AfricaCDC
Centres for Disease Control and Prevention

International CPHIA 2023
Conference on Public Health in Africa

ABSTRACT BOOK

3rd International Conference on Public Health in Africa

27- 30 November 2023 | Lusaka, Zambia

Hosted By:

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ZNPHI
ZAMBIA NATIONAL PUBLIC HEALTH INSTITUTE

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Foreword

2023 was a tremendous year of progress for health in Africa. Several African countries eliminated infectious diseases thanks to dedicated national efforts and collaboration across borders. Advocates and innovators drummed up attention on cross-cutting issues like climate change and gender equity. Extraordinary leaders raised their voices on the global stage to advocate for health independence, breaking barriers to take greater ownership in areas such as manufacturing and health financing.

The past year also showed that the International Conference on Public Health in Africa (CPHIA) has become the platform for accelerating health progress by showcasing world class science and innovation, for Africans and by Africans.

The third edition of this groundbreaking conference, CPHIA 2023, attracted more than 5,100 participants to the Mulungushi International Conference Center in Lusaka, Zambia, and more than 30,000 online – more than double the number of people who participated in 2022. The abstracts and side events programmes also increased considerably in size and scope from the year before and, for the first time, CPHIA featured a buzzing exhibition hall where 50 exhibitors were able to showcase their work. There were other firsts with CPHIA 2023 too: a robust pre-conference programme held virtually the week prior to the in-person convening, and the launch of a new 6-month media fellowship to nurture African science journalism in the lead-up to the event.

The content of the conference also evolved to reflect Africa's most pressing challenges and priorities. In the face of increasing climate-driven disasters such as cyclones and drought, we added climate change to the agenda. Amid tightening health budgets and stagnating donor contributions, we explored solutions for innovative financing mechanisms. As advocates across Africa demand greater gender equity and bodily autonomy, we spotlighted women at the helm of the reproductive health movement to invite dialogue and allyship.

It has never been more clear that CPHIA is advancing Africa's health revolution. It's been a pleasure and honor to be a part of this meeting's growth, and we look forward to its continued transformation.

We thank the African Union and Africa Centres for Disease Control and Prevention (Africa CDC) for their continued stewardship of public health, including convening this conference. We are also grateful to the Zambia Ministry of Health (MoH) and Zambia National Public Health Institute (ZNPHI) for serving as the CPHIA 2023 hosts, and the members of the Scientific Programme Committee and the Secretariat for their extraordinary leadership in bringing CPHIA to life.

We look forward to continuing the momentum at CPHIA 2024 in Morocco this year. See you in Rabat!

Professor Margaret Gyapong, MD
CPHIA 2023 Co-Chair

Professor Senait Fisseha, MD, JD
CPHIA 2023 Co-Chair

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3RD INTERNATIONAL CONFERENCE ON PUBLIC HEALTH IN AFRICA

ABSTRACTS BOOK

27- 30 NOVEMBER 2023
LUSAKA, ZAMBIA

Africa CDC is a continental autonomous health agency of the African Union established to support public health initiatives of Member States and strengthen the capacity of their public health institutions to detect, prevent, control and respond quickly and effectively to disease threats.

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Contents

CPHIA 2023 AT A GLANCE

2,314	total submissions
65%	increase compared to CPHIA 2022
93%	Submissions by African Researchers

Abstracts

The 3rd International Conference on Public Health in Africa (CPHIA 2023) launched an open call for abstracts across all nine of the conference's tracks.

CPHIA 2023 received a record 2,314 submissions, a 65 percent increase compared to the 1,402 submissions received in 2022. All submitted abstracts underwent a competitive blind review by three members of the Abstract Review Committee composed of members of the CPHIA 2023 Scientific Programme Committee, Secretariat, and senior technical experts referred by the committees. Of the submissions, 93 percent were submitted by researchers from Africa.

In response to the dramatic increase in submissions, CPHIA 2023 expanded the Abstracts Programme to allow for additional presentations. Abstracts were accepted across all 9 conference tracks for three categories of presentations: an 8-minute oral in-person presentation, an in-person poster presentation, or an 8-minute virtual presentation the week prior to the in-person convening. In total, 430 abstracts were accepted for the CPHIA 2023 Abstracts Program. Of the selected abstracts, 106 were confirmed for oral presentations, 197 were confirmed for the poster hall, and 100 presenters were confirmed for the Virtual Abstracts Programme. The free Virtual Abstracts Programme attracted 1,768 live participants.

This abstract book provides all accepted abstracts for CPHIA 2023, arranged by conference track. We thank all of our emerging and seasoned scientists and public health professionals for submitting their work, allowing us to collaboratively learn from each other, and contribute to the growing body of scientific knowledge being generated on the African continent.

Abstract Awards

The Abstract Awards recognise scientific excellence, with merit-based selection of the winners scored by a panel of judges from the Scientific Programme Committee.

Best Oral Abstract Presentation

The conference's Best Oral Abstract Presentation award went to Dr Namubiru Saudah Kizito of Uganda for her presentation titled "Increasing trends of antibiotic resistance, Uganda: an analysis of National antimicrobial resistance surveillance data, 2018-2021.". Dr Namubiru is an Advanced Field Epidemiology Fellow at the Uganda National Institute of Public Health (UNIPH).

Best Oral Abstract

Increasing trends of antibiotic resistance, Uganda: an analysis of National antimicrobial resistance surveillance data, 2018-2021.

Saudah Namubiru Kizito
Uganda National Institute of Public Health (UNIPH)

Conference Track

Key Words

Antibiotic resistance, Pathogenic, Surveillance, Drug susceptibility testing, Gram-positive organisms, Gram-negative organisms

Introduction

Continuous monitoring of antimicrobial resistance (AMR) among isolates from clinical samples can inform effective drug selection for patients. In Uganda, human AMR surveillance occurs at national and regional referral hospitals and in selected public universities. Pathogenic isolates from patient samples for routine care are sent to the National Microbiology Reference Laboratory (NMRL) for re-analysis to generate national AMR surveillance data. Despite the availability of national AMR surveillance data, there is limited analysis and utilization of this data to inform planning and policy. We evaluated trends and spatial distribution of AMR to common antibiotics used in Uganda to estimate national AMR burden over time.

Methods

We analyzed national AMR surveillance data of pathogenic bacteria isolated from sterile samples in Uganda, 2018-2021. We calculated the proportions of isolates that were resistant to common antimicrobial classes. We used the chi-square test for trends to evaluate changes in AMR resistance over time.

Results

Out of 537 isolates with 15 pathogenic bacteria, 89% were from blood, 6.3% from pleural fluid, 4% from cerebrospinal fluid, and 0.7% from peritoneal fluid. The most common pathogen was Staphylococcus aureus (20.1%), followed by Salmonella species (18.8%). Overall change in resistance over the four years was 63–84% for sulphonamides, 46–76% for fluoroquinolones, 48–71% for phenicols, 42–97% for penicillins, 17–53% for aminoglycosides, 8.3–90% for cephalosporins,5-26% for carbapenems, and 0-20% for glycopeptides. Annual resistance rates to ciprofloxacin increased from 26-45% (p=0.02) for Gram-positive organisms while among Gram-negative organisms, there were increases in resistance to: tetracycline 29-78% (p<0.001), ciprofloxacin 17-43% (p=0.004), ceftriaxone 8-72% (p=0.003), and meropenem 7-18 (p=0.03).

Conclusions

There was a significant increase in the trends of resistance of Gram-negative organisms to antibiotics such as quinolones, third-generation cephalosporins, and carbapenems in Uganda. We recommend continuous monitoring of national AMR trends to estimate the burden and inform AMR control measures.

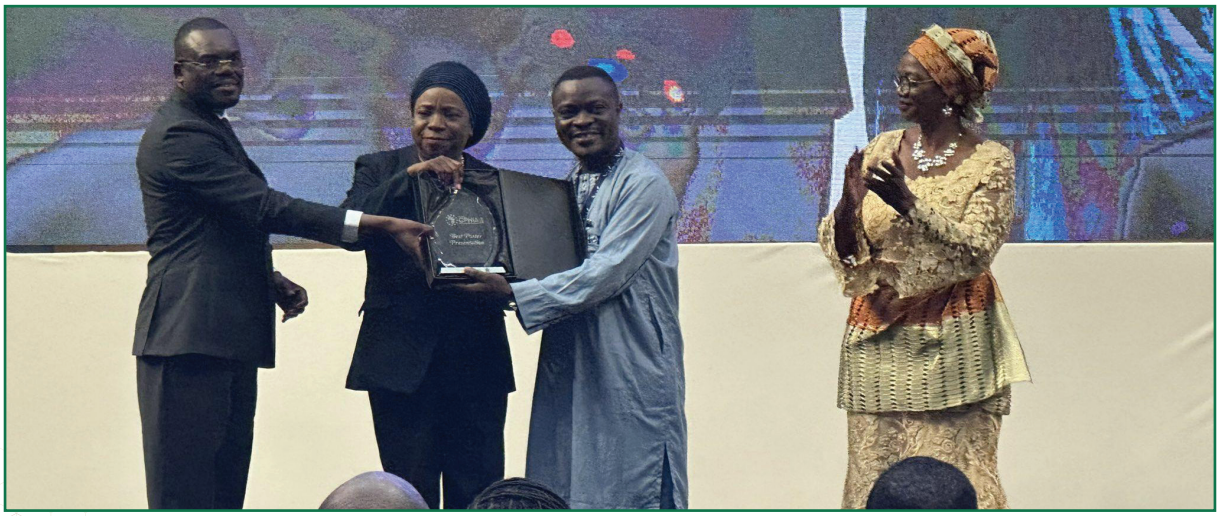
Best Abstract Poster Presentation

The best abstract poster award went to Dr Joseph Fokam of Cameroon for his abstract titled "Emerging integrase resistance in dolutegravir-treated individuals calls for more cautious use of dolutegravir-containing regimens in resource limited settings." Dr Fokam is a Virologist at the Chantal BIYA International Reference Centre for Research on HIV/AIDS Prevention and Management (CIRCB/FHS-UB).

Best Poster Abstract

Emerging integrase resistance in dolutegravir-treated individuals calls for more cautious use of dolutegravir-containing regimens in resource limited settings.

Joseph Fokam[1], Collins Chenwi[1,2], Desire Takou, Alexis Ndjolo, Vittorio Colizzi[3], Nicaise Ndembi[4], Carlo-Federico Perno[5]



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Conference Track

Key Words

HIV drug resistance; Integrase resistance, DTG-containing regimens, Cameroon

Introduction

With rapid expansion of DTG-based regimens, surveillance of acquired drug resistance is crucial especially in resource limited settings (RLS) where suboptimal transitions and other programmatic factors may favour HIV-drug resistance (HIVDR) emergence despite the high genetic barrier of these drugs. We evaluated the threshold of acquired HIV drug resistance (HIVDR) to DTG, in treatment-experienced patients in Cameroon.

Methods

A laboratory-based sentinel surveillance was conducted at the Chantal Biya International Reference Center (CIRCB), Yaoundé, Cameroon, between January-June 2023. As per the WHO-recommendations, remnant viral load samples of antiretroviral therapy (ART) experienced individuals with unsuppressed viral loads were sequenced in the HIV-1 pol-gene using an in-house assay, targeting the integrase, protease, and reverse-transcriptase regions with sequence analysis done using Stanford HIVdb.v.9.5 and statistical analyses using epi info.v7.2.5.

Results

We included 54 individuals; median age [IQR]:41 [28-46] years; 51.9% female. The majority were on first-line regimens (46.3%), and 18.5% (n-10) reported exposure to DTG-containing regimens. Overall, median ART-duration was 190[123-457] weeks, with 73[34-165] weeks on DTG-containing regimens. Median CD4-count was 157[70-299] cells/mm3 and median viral-load,16255[3695-68529] copies/ml. Overall HIVDR prevalence was 94.4% (95%CI: 84.6%-98.8%), with 92.6% (95%CI: 82.1%-97.9%) for both NRTI and NNRTI resistance, 33.3% (95%CI: 21.1-47.5) PI/r resistance and 7.4% (2.1%-17.9%) for integrase resistance. Amongst those with integrase resistance, three had just one mutation (R263K), while one individual (receiving concomitant rifampicin containing tuberculosis treatment) had multiple mutations (T66I, G118R, E138K, L74I) despite doubled DTG dosing. Individuals with integrase resistance had longer median ART-median duration with DTG (164 [86.7-198.4] weeks) as compared to those without resistance (34 [11.4-59.9] weeks).

Conclusions

In this RLS, emergence of integrase resistance is substantial, especially with longer duration on DTG-based regimens. This calls for strict viral load monitoring on DTG-containing regimens and the use of genotypic resistance testing to treatment optimisation after failing on DTG.

All Accepted Abstracts by Conference Track

Track 1: Pandemic Preparedness and Resilient Financing Mechanisms for Africa

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Evaluation of time from sample collection at health facilities in Kigezi region to receipt at Central Public Health Laboratory, Uganda from February to May 2023

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Keywords

Turnaround time, Viral Load, Uganda

Introduction

In 2011, Uganda established a national laboratory sample transport, referral, and results network. Using a hub-and-spoke model, HIV viral load (VL) samples collected at 'spoke' facilities and transported through a 'hub' are expected to be received by Central Public Health Laboratory (CPHL) within ≤7 days (≤2 days from collection to pick-up, ≤4 days to delivery, ≤1 day to receipt). However, in Kigezi Region, during October–December 2022, the mean total time was 11 days. We evaluated the VL sample transport process in the Kigezi Region from collection to receipt at CPHL.

Methods

We abstracted data from the CPHL sample tracking database (April–May 2023) on the date of VL sample collection, pick-up, delivery, and receipt at CPHL for the four hubs serving all six districts in Kigezi Region. We calculated mean days between respective time points. We brainstormed and held key informant interviews with CPHL management and Kigezi regional stakeholders to identify factors leading to delays in sample receipt. Thereafter we carried out a root cause analysis.

Results

Data were available for 6593 samples received during April–May 2023. The mean total turnaround time was 12 days, including 7 days from sample collection to pick-up by transporters, 2 days from pick-up to delivery at CPHL, and 3 days from sample delivery to sample receipt by CPHL. Factors identified as possible causes of delays included non-adherence to route schedules and delays in sample packaging for shipment.

Conclusions

Total turnaround was almost double the 7-day benchmark, and sample collection to pick up represented the longest delays in VL sample receipt at a central lab in Uganda. Future studies could evaluate the impact of efforts to improve adherence to route schedules and rapid sample packaging to address this issue.

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Strengthening HIV Test Kit Inventory Management at an HIV Testing Laboratory, Kampala, 2023

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Keywords

HIV-test kits, Inventory Management, stock

Introduction

Effective management of HIV test kit inventory is crucial for successful HIV testing programs. A laboratory in Kampala, Uganda conducts approximately 160,000 HIV tests annually using nine different platforms i.e. 3 HIV rapid test kits, Abbott RealTime HIV-1 viral load kits, COBAS® TaqMan® HIV-1 viral load and DNA Test kits, Elecsys HIV Combi test kits and the Geenius HIV 1/2 test kits, but is challenged by frequent kit

stockouts. A May 2021 survey of clinicians ordering HIV tests at the laboratory showed that 61% were dissatisfied with the turnaround time. We conducted a quality improvement project to strengthen HIV test kit inventory management in the laboratory.

Methods

We reviewed laboratory stock card records, HIV test kit orders, and kit supply forms from January 2022 to February 2023, interviewed inventory management staff to identify inventory-related challenges, and analyzed data thematically. We engaged laboratory leadership and staff to design quality improvement strategies and compared HIV test kit inventory data in February and May 2023. We developed and documented a standardized re-order system, implemented a real-time inventory tracking tool, and assigned staff to monitor stock in May 2023.

Results

From assessment of the system, the laboratory used a manual inventory management system without a defined algorithm for monitoring resupply needs and re-ordering. Data accuracy of stock cards improved from 78% to 90% from February to May 2023. In February 2023, only six of nine HIV test kits were available, each with only one month's stock, compared to all nine kits available with three months' supply in May 2023. The laboratory adopted a performance indicator to monitor HIV test stockouts.

Conclusions

A quality improvement approach engaging laboratory leadership improved inventory management in the short term. Continuous monitoring would facilitate sustainable inventory management.

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Evaluation of turnaround time for yellow fever testing in Uganda from Jan 2022 to Mar 2023

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Keywords

Yellow fever, Turnaround time, Uganda, Laboratory

Introduction

Control of yellow fever (YF) outbreaks relies on early detection and response, which requires short laboratory turnaround time (TAT). YF is endemic in Uganda; surveillance is conducted at sentinel health facilities in high-risk areas. TAT targets are defined for three phases: pre-analytic (target ≤7 days), analytic and post-analytic (target ≤5 days). We evaluated the TAT for YF testing and factors affecting TAT in Uganda.

Methods

Median and range TAT was calculated from the national FY database, January 2022-March 2023. We conducted key informant interviews (KII) with staff involved in YF surveillance in March 2023 to assess factors affecting TAT and strategies to improve TAT.

Results

Among 1,274 entries evaluated, 25 (2.0%) were positive, and 1,249 (98%) were negative. In the pre-analytic phase, all samples had TAT >7 days (median=30 days, range 10-64). In the analytic and post-analytic phases, 15 (60%) positive samples had TAT >21 days (median=29 days, range 13-50), while 10 (40%) were within the target TAT. All negative samples had TAT ≤7 days (median=7 days, range 3-7) in the analytic and post-analytic phases. Among 20 KII, 18 persons reported delayed sample delivery from sentinel sites to UVRI due to inconsistent sample pick-ups.

Conclusions

The highest TAT was observed in the pre-analytic phase and affected all samples; due to delayed sample transport. We recommend alternative means of sample transportation aimed at ≤7 days TAT and improvement of TAT in the analytical phase by optimizing the YF confirmatory assay.

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MARBURG VIRUS DISEASE OUTBREAK PREPAREDNESS AND RESPONSE IN THE SOUTH REGION OF CAMEROON, FEBRUARY – APRIL 2023

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Keywords

Marburg Virus Disease, preparedness, Disease outbreaks

Introduction

Since the declaration of the first Marburg Virus Disease (MVD) outbreak in Equatorial Guinea on February 13th, 2023, several neighboring countries have been implementing preparedness efforts to prevent MVD cross-border transmission and respond in case of a confirmed MVD outbreak. We described the experience of the South region, Cameroon, bordering Equatorial Guinea, in MVD preparedness activities.

Methods

We conducted a descriptive study of preparedness activities in the South Region, Cameroon from February to April 2023. We collected data from activity reports and from the South regional delegation staff involved in MVD preparedness. Preparedness activities were organized into seven key pillars: coordination, epidemiological surveillance, specimen transportation, and biologic diagnostic, case management and infection prevention and control, risk communication, emergency supply, and continuity of essential care and services.

Results

As part of coordination, the South regional Incident Management System was activated on February 13th, 2023, with 14 biweekly meetings held and 11 situation reports developed on a weekly basis as of April 30th, 2023. Case definitions are developed and disseminated in the community and health facilities. A total of 120 community health workers have been recruited. At Points of Entry, 4272 passengers have been screened. A total of 159 alerts were investigated, which led to 7 samples collected and transported to Centre Pasteur Cameroon, all negative. Risk communication messages were developed and used to sensitize 62283 persons. Isolation and treatment units have been established in Ambam, Olamze, and Kye-Ossi Health Districts.

Conclusions

As of April 30th, 2023, there was no confirmed case of MVD as the South Region has continued to make significant progress in MVD preparedness. There is a need to sustain these efforts, not only for MVD but also for other epidemics.

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How did the COVID-19 pandemic affect HIV, tuberculosis and malaria indicators in Togo? An interrupted time series analysis.

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Keywords

Impact, COVID-19 pandemic, HIV, tuberculosis, malaria, Togo.

Introduction

The effects of the COVID-19 pandemic on health systems in Africa are increasingly well documented. We aimed to estimate the impact of COVID-19 pandemic on a selection of HIV, malaria and tuberculosis (TB) indicators in Togo.

Methods

In this interrupted time series analysis, national health information system data from January 2019 to December 2021 and TB programmatic data from Q1 2018 to Q4 2022 were analyzed (2 152 health facilities). Nine indicators were included, namely: the monthly number of people tested for HIV, PCR tests in infants, ART initiations, malaria cases confirmed by a rapid diagnosis test (RDT) or thick smear (TS), simple malaria cases, hospitalized malaria cases and quarterly positive microscopies, positive Mycobacterium tuberculosis (MTB) Xpert tests and TB cases. We used Poisson segmented regression to estimate the immediate impact of the pandemic as well as per-pandemic trends through incidence rate ratios (IRRs) and 95% confidence intervals (95% CIs).

Results

Overall, there was a significant drop in 5 of the 9 indicators, ranging from 19.3% (hospitalization of patients for malaria) to 36.9% (TB diagnosis by MTB Xpert), immediately after the onset of the COVID-19 pandemic. A significant drop was observed in the level of all malaria indicators the month after the onset of COVID-19, with a constant observed monthly trend during the pandemic. The immediate drop in monthly HIV PCR testing among infants (IRR: 0.735; 95% CI: 0.625-0.866) and in the quarterly number of reported TB cases (IRR: 0.728; 95% CI:0.667-0.795) was followed by a gradual improvement in the subsequent months during the pandemic.

Conclusions

The COVID-19 pandemic had a moderate impact on the three major infectious disease indicators in Togo. However, given the decline in levels immediately after the pandemic onset,

there is room to improve the preparedness of the health care system to cope with future epidemics.

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"This is just Malaria…;" Lessons learnt from the COVID-19 sensitization programs amongst Ugandan rural fishing communities for future emergency preparedness.

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Keywords

Covid-19, guidelines, emergency, mass-media

Introduction

Exploring how people make sense and construct ideas around a new disease has the potential to inform interventions around health promotion and emergency preparedness. During the Covid-19 emergency, the government introduced health-promotion programs to sensitize communities. These included sensitization on mass media. In 2021, research was conducted on people's perceptions about the government health-promotion measures used during Covid-19. This has the potential to inform communication/health-promotion during emergencies.

Purpose: Exploring how people construct ideas around a new disease and draw lessons from the perception of health-promotion programs.

Methods

This qualitative study was conducted in Bwondha landing-site, Mayuge-District, between July-August-2021, using 12 in-depth interviews and 8 observations of COVID-19 prevention practices. Data were transcribed and analyzed thematically.

Results

We found that COVID-19 was mainly considered a common malaria/flu, a disease far away from the community, money-making, political disease and COVID-19 death was doubted. Such perceptions were informed by health-promotion programs in media and security deployments. COVID-19 deaths were doubted because on TV, the deceased shown were on life-support which wasn't the case with COVID-19 deaths in the community, they were not buried by the established burial-team in white-overalls as they saw on TV in other areas. Some mentioned following COVID-19 guidelines only to avoid arrest but not preventing COVID-19, implying to them the problem was mainly not COVID-19 but avoiding political arrest.

Conclusions

Message packaging and presentation in media impact how communities perceive health-promotion programs, and what they do to prevent transmission. These findings can inform how involving the media is crucial in emergency communications.

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"In terms of sustainability, we are thinking different things.": An exploration of how donors and recipients discuss sustainability in Liberia

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Keywords

sustainability, financing, global health, Liberia

Introduction

Following years of civil conflict and the Ebola outbreak, the West African country of Liberia has a long history of reliance on external funding to meet national health priorities. This provides a rich source of perspectives on when, how, and why donors and recipients think about financial investments for sustainable outcomes, including pandemic preparedness and resilient financing mechanisms. Here we explored how sustainability is understood and discussed by different donor and recipient entities in Liberia.

Methods

We applied qualitative thematic analysis to study 35 interviews from the perspectives of financial donors and recipients in Liberia. Respondents were recruited through purposeful and snowball sampling strategies and deemed eligible if they had experience working in Liberia in either a financial donor or recipient role. Interviews were conducted between July and August of 2022, and categories for analysis were determined from close reading by the analysis team. All data was transcribed by the interview team, and analysis was conducted in NVivo.

Results

Preliminary results indicate great variability in how sustainability is understood, defined, and applied by donors and recipients. Specifically, foreign donors spoke more often about meeting short term metrics in projects with defined endpoints, while Liberian government officials, Liberian academics, and NGOs/implementing partners spoke of building long term, permanent systems. Often, there was a discrepancy in describing sustainability as a concrete output or abstract term.

Conclusions

With final analysis pending, we have found that the variability of how sustainability is understood by donors and recipients has the potential to break down collaborative efforts. Without shared definitions and timescales, different actors are left to understand "sustainability" with different mindsets that can rupture the long-term success of a project, a partnership, and the process of building resilient and responsive financing systems.

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Data Management Systems for Wastewater-Based Surveillance of SARS-CoV-2

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Keywords

Wastewater, Data Management, SARS-CoV-2, South Africa

Introduction

During the COVID-19 pandemic, the NICD wastewater-based epidemiological surveillance (WBES) network emerged as a sensitive tool for early detection of increases in transmission rates, monitoring of changes in population burden of disease and detection of new variants. WBES requires coordination across multiple sectors including laboratorians, water and sanitation and public health officials, therefore robust data management systems must be established for WBES for maximum efficiency. We share our progress in creating an integrated data management system to support data collection, processing, reporting and analysis.

Methods

A data architecture was designed to handle diverse data sources and involve individuals across different stages of data generation, from sample collection to laboratory processing and analysis. Paper-based forms were initially created to record sample metadata for result interpretation. Later, electronic data collection via the REDCap Mobile App was adopted. Sample metadata was integrated with sample test outcomes within an SQL database, facilitating data retrieval in a suitable format for analysis. Finally, comprehensive data analysis using R (v4.2.2) was performed to visualise sample collection sites on GIS maps, assess laboratory processing times, quantify viral levels, and examine genomic variations.

Results

The data management approach facilitated regular production of COVID-19 process and laboratory test reports, enabling meticulous monitoring of sample metadata and test data. Reports supported timely detection and response to problems with sample collection, laboratory processing and genomic sequencing. The data management system provided valuable insights into areas within the processing workflow that could be optimised, leading to an enhanced overall turnaround time and improved data quality. The structure of the dataset ensures seamless communication with backend data structures of our wastewater dashboard, a dynamic data visualisation and dissemination tool.

Conclusions

The implementation of these systems facilitated the integration of complex epidemiological and genomic data and provided a solid foundation for future endeavours involving monitoring additional pathogens.

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Wastewater Based Epidemiology for the Detection of Enteric Pathogens in Dakar

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Keywords

Environmental surveillance, Wastewater, Enteric pathogens, Emerging diseases

Introduction

The circulation of pathogens in wastewater and its outlets constitutes a potential risk of epidemic outbreaks. To anticipate this risk, wastewater-based environmental monitoring could be considered. It is a tool for detecting and monitoring pathogens. Commonly, the amount of pathogens found in wastewater reflects contamination levels within the community. Despite its importance in the development of disease prevention and response strategies, its use remains poorly understood. The aim of this work is to assess the presence of certain pathogens in wastewater and bathing water in order to contribute to the prevention of the emergence or re-emergence of diseases.

Methods

wastewater samples and faecal sludge were taken at the entrance to the stations and in the receiving environment (the sea) over the period from June 12 to 20, 2023. Total nucleic acid (TNA) extraction was performed with the ZymoBIOMICSTM DNA/RNA Miniprep Kit according to the manufacturer's instructions. TNAs were subjected to multiplex qPCR using SeeGene AllplexTM kits targeting 25 gastrointestinal pathogens.

Results

Of 13 samples analysed, the preliminary results revealed a strong bacterial (84.61%, n=11), parasitic (76.92%, n=10) and viral (69.23%, n=9) presence. Of the 25 pathogens targeted, only 28% (n=7) were not detected. Detailed analysis shows the simultaneous presence of pathogens in certain samples with EAEC and ETEC predominating among bacteria at 84.62%. The viruses are mainly represented by Norovirus GII at 69.23% (n=9) and the parasites by Giardia lamblia at 76.92% (n=10).

Conclusions

These results reveal that wastewater and bathing water can be sources of information relating to the circulation of pathogens of interest and with epidemic potential. Therefore, this valuable epidemiological tool could serve as an adjunct to clinical surveillance in order to prevent future epidemics.

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Risk Factors and Knowledge of Ebola Virus Disease Among Hunters in Kwara State, Nigeria

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Keywords

Ebola virus disease, Hunters, Risk factors, Knowledge, Zoonotic disease, Nigeria

Introduction

Ebola virus disease (EVD) is a severe zoonotic infection with high mortality, primarily transmitted through contact with infected bats and non-human primates. This study aimed to evaluate the risk factors and knowledge of EVD among hunters in Kwara State.

Methods

A cross-sectional survey was conducted involving 427 hunters, utilizing a structured questionnaire administered from January to April 2016. The majority of participants (99.3%, n = 424/427) were male, with a mean age of 39 years.

Results

The mean knowledge score was 4.30±9. While 96.2% (n = 411/427) of hunters were aware of EVD, only 42.6% (n = 182/427) demonstrated good knowledge (GK) of the disease. A subset of hunters (22.5%, n = 96/427) hunted bats and monkeys, and 17.1% (n = 73/427) consumed raw or undercooked bush meat. Marital status, education, occupation, and religion significantly influenced EVD knowledge. Hunters with formal education (OR: 4.6; 95% CI: 2.6, 8.1; $p < 0.001$), married individuals (OR: 4.4; 95% CI: 1.4, 11.0; $p = 0.051$), and those pursuing professional farming (OR = 23.1; 95% C.I.: 7.3, 55.2; $p < 0.01$) were more likely to have good EVD knowledge. Similarly, education (OR = 4.6, 95% CI = 2.6–8.1; $p < 0.001$), ethnicity (OR = 2.4; 95% CI = 1.4–4.1; $p = 0.002$), and religion (OR = 8.7, 95% CI = 2.0–38.9; $p = 0.004$) significantly impacted EVD knowledge.

Conclusions

While high awareness of EVD existed among Kwara state hunters, the study highlights the need for renewed mass advocacy, emphasizing transmission modes, preventive measures, and control strategies to prevent EVD re-emergence in the human population.

1261

Autonomous hospitals financing and operational challenges, internal mitigations and resilient mechanisms during the COVID-19 in Ghana

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Keywords

Financial health, operational challenges, coping strategies, resilience mechanisms, COVID-19

Introduction

Autonomous hospitals (self-financing and faith-based) that admitted, treated and managed COVID-19 cases faced significant challenges along with rising cost of supplies and limited government support. Yet the COVID-19 induced challenges on their managerial and financial health remains poorly documented empirically. This study examined the impact of the COVID-19 economic adversities on autonomous hospitals operational and financial performances and the coping methods and resilience strategies they adopted.

Methods

A mixed-methods study drawing utilisation and financial data before and during COVID-19 from 247 referral autonomous hospitals that admitted and managed COVID-19 cases in Ghana. Qualitative data were collected from a purposively sampled 50 executive managers and CEOs involved in strategic decision-making process of the hospitals. The qualitative data were recorded and transcribed verbatim for themes using Nvivo 12 software. We calculated changes in utilisation (outpatient, admission and elective procedures) and mapped against liquidity ratios before COVID-19 onset in 2019 and the first half of 2021 when vaccines were rolled-out. Measures of financial health and qualitative findings were triangulated and reported.

Results

All the hospitals reported severe liquidity challenges associated with overdue receivables from public and private insurance organisations, repurposing of units to COVID-19 care and dramatic decline in utilisation of admission and elective procedures that accounted for 40% internal revenue pool. Limited access to capital coupled with astronomical expenditures on COVID-19 protective equipment aggravated liquidity risks prompting the hospitals to respond by increasing prices, cashing in from premature investment, furlough and salary freeze that attracted considerable agitations. Operational, structural, and technological resilience were adopted to absorb the monumental shocks and strengthen the hospital's operational and financial performances beyond the COVID-19.

Conclusions

The findings underscore the need for autonomous hospitals to be supported to overcome the COVID-19 imposed economic adversities. Tax cuts, ease of access to capital and restructuring to improve cash flow are recommended.

1273

A cost-effectiveness analysis of active and passive vaccinovigilance of adverse events following Measles-Rubella Immunization for children in Eastern Uganda.

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Keywords

Cost-effectiveness analysis
Vaccinovigilance
Adverse events surveillance
Measles-Rubella vaccination
Eastern Uganda

Introduction

Adverse Events Following Immunization (AEFI) reporting in mass immunization campaigns is crucial for enhancing acceptance and minimizing disease resurgence. This study assessed the cost-effectiveness of active vaccinovigilance (AVV) and passive vaccinovigilance (PVV) for identifying AEFI following Measles-Rubella (MR) mass immunization in Iganga and Mayuge districts.

Methods

This was a cost-effectiveness study nested in a cohort that followed up children on 1, 2-3,10, and 14 days after vaccina-

tion for AEFI. Costs were collected using an ingredients-based approach. Data on costs and yield of AEFI cases were collected from health facilities and Iganga-Mayuge surveillance site. Cost-effectiveness was assessed as cost per Disability Adjusted Life Years (DALYs) averted and the GDP per capita US$794.451 as the threshold. A static decision modeling framework was used to estimate the costs and DALYs of alternative strategies from societal perspectives over a one-year timeframe. Sensitivity analyses were done to assess the uncertainty of the Incremental Cost-Effectiveness Ratio (ICER) around variations in key variables.

Results

AVV yielded 1.56 DALYs compared to the PVV of 33.13 DALYs. The AVV arm averted 31.57 more DALYs, whilst costing USD 574.3 more than the PVV arm with an ICER of USD 18.2 per DALY averted. The AVV remained cost-effective after sensitivity analyses. The ICER was most sensitive to detecting AEFI and severe AEFI due to MR in the active strategy.

Conclusions

AVV was more cost-effective compared to PVV from the societal perspective. Implementation of AVV is important in realizing better surveillance outcomes in a mass campaign setting.

1324

GESTION OPTIMISÉE DES INTRANTS POUR LE DIAGNOSTIC MOLECULAIRE ET LA SURVEILLANCE GÉNOMIQUE DE COVID-19 AU CAMEROUN : ÉVIDENCE D'UNE RÉPONSE EFFICACE DANS LE CONTEXTE D'UNE PANDEMIE (EDCTP PERFECT-Study EF2020-RIA3000)

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Keywords

COVID-19; Intrants; gestion logistique; CIRCB; Cameroun.

Introduction

La stratégie de riposte contre la COVID-19 repose sur un approvisionnement adéquat en intrants. En qualité de laboratoire de référence COVID-19, le Centre International De Reference Chantal Biya (CIRCB) a évalué la consommation des intrants en tests PCR, criblage et séquençage, à des fins de meilleures prévisions.

Methods

Il s'agissait d'une étude transversale descriptive menée entre Aout/2021-Juillet/2022 qui portait sur l'évaluation des intrants à travers l'analyse des données de services réalisés au CIRCB, Cameroun. La méthode des moyennes pondérées a été utilisée en statistique.

Results

Globalement, 31.453 échantillons ont été reçus, 37.008 extractions (35.280 en plateforme-manuelle et 1.728 en plateforme-automatique) et 37.248 PCR (35.520 en manuelle et 1.728 en automatique) ont été réalisées pour le diagnostic de la COVID-19; soit une consommation moyenne mensuelle de 3.084 extractions et 3.104 PCR pour ~2.621 échantillons/mois (~1,17 extractions/échantillon, et ~1,18 PCR/échantillon). Sur les 2.238 (7.1%) cas diagnostiqués positifs, 265 ont été soumis au criblage et 200 au séquençage du fait de leur cycle seuil (CT) élevé (CT 25 En criblage, 288 tests ont été utilisés soit 1,08 test/échantillon. En séquençage, 279 tests ont été utilisés soit 1,39 test/échantillon.

Conclusions

Les estimations obtenues révèlent une quantification précise des intrants utilisés en période de haute épidémie pour le diagnostic de la COVID-19, le séquençage et le criblage des variants au CIRCB-Cameroun. L'implémentation adéquate de cette stratégie logistique permettrait d'optimiser la gestion des intrants et de faire des economies budgétaires tout en assurant la surveillance génomique ou la riposte à tout autre incident de santé au Cameroun.

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Impact of the implementation of the free healthcare policy during the tenth Ebola outbreak on the health service utilization and case notification, in North Kivu province, DR Congo, 2018-2020: Interrupted time-series analysis

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Keywords

North Kivu; tenth Ebola Virus Disease epidemic; Free healthcare; Free healthcare policy; Interrupted time-series analysis; EVD10, Ebola

Introduction

On August 1, 2018, the DR Congo Ministry of Health declared the tenth Ebola Virus Disease (EVD10) outbreak in North Kivu province. This study aims to determine the impact of the implementation of the Free healthcare policy (FHP) during EVD10, on the volume of health service utilization before and during the outbreak and on the notification of alerts.

Methods

During EVD10, 18 Health Zones (HZ) were affected. We conducted this quasi-experimental study in 8 HZ in which FHP was implemented. We tracked the volume of health service utilization (in number of cases), between January 2017 and 30 June 2020, of curative and prenatal consultations (ANC); assisted deliveries and referral consultations at the hospital and determined the variation in this volume before and after the FHP using an Interrupted time-series analysis. Binomial negative regression enabled us to assess the impact of FHP in terms of the percentage of improved service utilization volume.

Results

Over the course of the epidemic, FHP led to an increase, compared with the volume of service utilization prior to EVM10: 27% (CI95%:13-41%) in the number of women at ANC1; 33% (CI95%: 18-48%) in the number of women at ANC4; 29% (CI95%: 14-45%) of new cases at the curative consultation; 39% (IC95%: 22-55%) of institutional deliveries and 72% (IC95%: 51-92%) of hospital referrals.

Conclusions

FHP during EVD10 was beneficial in maintaining the population's use of healthcare services. Subsidizing care for the population during outbreak ensures that suspected cases are easily identified in health facilities when using health services.

1372

Approche de l'amélioration continue de la qualité dans la prise en charge du paludisme dans le Haut-Katanga

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Keywords

Amélioration continue, écarts, Haut-Katanga ; RDC

Introduction

L'amélioration continue de la qualité (ACQ) est une approche permettant l'adhérence des prestataires au respect des directives sur la prise en charge du paludisme dans les formations sanitaires. La mise en œuvre de ce programme requière un accompagnement rapproché des prestataires de soins pour déceler les goulots d'étranglements dans la pratique courante. Ce projet avait pour objectif d'implémenter une approche de supervision formative innovatrice axée sur la communication bidirectionnelle.

Methods

Ce projet pilote a été mené dans la Province du Haut-Katanga du Mois d'Octobre 2020 au Mois de Septembre 2021 dans 80 formations sanitaires. La sélection des FoSa s'était basé sur la fréquentation élevée et l'accessibilité. Cette sélection a été faite par le PNLP dans les établissements privés et publiques situées au chef-lieu de la province et Hors chef-lieu. L'analyse des données a été réalisée faite via Stata 16.

Results

L'ACQ a abouti aux résultats suivants : 91% à 99% des prestataires demandent une confirmation biologique avant un traitement du paludisme simple. 79% à 88% des prestataires utilisent les molécules recommandées dans les directives pour prendre en charge le paludisme simple ; 71% à 91 % des prestataires classifient le paludisme selon les directives nationales de la prise en charge, 74% à 84% des prestataires administrent la TPI chez les femmes enceintes dans les 4 semaines.

Conclusions

L'étude montre que la mise en œuvre de l'approche de l'amélioration continue de la qualité des soins contribue énormément à la création d'un environnement propice pour les formations sanitaires dans la résolution des écarts sur la prise en charge du paludisme dans le Haut Katanga.

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Effect of COVID-19 pandemic on social health insurance schemes:adaptations and implications for future pandemic situations in low resource settings

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Keywords

COVID-19 pandemic, Social health insurance scheme, Adaptation, Health financing mechanism, Low resource settings, Systematic review

Introduction

In low resource settings, social health insurance schemes (SHISs) are means or mechanisms of financing healthcare. We undertook a systematic review to identify the adaptations made to SHISs during the COVID-19 pandemic on what to buy, from whom to buy, how to pay and whom to buy for.

Methods

A systematic review was conducted between June 30, 2023, to July 31, 2023. Within this period, EconLit, EMBASE, Global Health, MEDLINE, PubMed, Scopus, Social Science and Web of Science were searched from 1976 to 31 July 2023. Studies describing adaptations to SHISs during the pandemic were included.

Results

Of 178 articles,18 studies which met the eligibility criteria and described adaptations to SHISs were found for India (n = 6), Nigeria (n = 6) and Indonesia (n = 2). The remaining (n=4) were for Ghana,Togo, Philippines, and Bangladesh. On what to buy (In India, Nigeria, most of the other countries: adaptations were made to largely purchase free COVID-19 tests and facility-based COVID-19 treatment services). From whom to buy (In Nigeria, COVID-19 testing services were purchased from 54 new laboratories but not through the SHISs; In India, a mix of 20,257 public, private, and non-profit providers were engaged by the national scheme to expand COVID-19 services provision; most of the other countries onboarded also a mix of providers). On how to pay (In Nigeria, purchasing arrangements with public providers were viewed passive; In India and most of the other countries adaptations to purchasing arrangements especially with the private sector were deemed as strategic). On whom to buy for (In Nigeria, India, most of the other countries, hospitalized COVID-19 patients were first considered).

Conclusions

In low resource settings, adaptations to SHISs underpinned the resilience of the schemes during the COVID-19 pandemic. These adaptations should be considered by other countries within the context of future pandemic preparedness.

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XBB.1, BQ1.1 and Atypical BA.4.6/XBB.1 Recombinants Predominate Current SARS-CoV-2 Wavelets with Flu-like Symptoms in Cameroon: A Snapshot from Genomic Surveillance

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Keywords

SARS-CoV-2, Omicron, COVID-19, Genomics, Cameroon

Introduction

Since December 2022, Cameroon has observed a slight resurgence of COVID-19, raising concerns on genomic surveillance of related-SARS-CoV-2 variants under circulation.

Methods

Following a laboratory-based survey, positive SARS-CoV-2 samples detected from December-2022 through March-2023 were processed for targeted sequencing at the Chantal BIYA International Reference Centre (CIRCB) in Yaoundé-Cameroon.

Results

From all positive cases detected, 13 were successfully sequenced (mean age 34 years, 70% female); the majority of the cases were unvaccinated (70%, 9/13) and symptomatic (92%, 12/13); all with flu-like symptoms (100%, 12/12). Following RT-PCR, the median cycle threshold was 22.23 [18-24] for the N gene; and 24.09 [20-26] for the ORF gene, underscoring high viral loads. Phylogenetic analysis of nucleotide sequences identified four major sub-variants in circulation, of which BA.5 (3/13), the recombinants BQ.1.1 (4/13), XBB.1 (4/13) and novel atypical variant of BA.4.6/XBB.1 (2/13).

Conclusions

This snapshot surveillance indicates the introduction/emergence and circulation of new Omicron sub-variants, all accompanied by minor/mild symptoms. However, these new sub-variants and recombinants call for continuous genomic surveillance to prevent further resurgence of Covid-19 epidemiological wave.

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Performance characteristics of INDICAID antigen rapid diagnostic test on SARS-CoV-2 Samples During the Omicron wave in Cameroon

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Keywords

SARS-CoV-2, Antigen detection, Diagnostic performance, INDICAIDTM Ag-RDT, Cameroon

Introduction

WHO recommends the use of COVID-19 antigen rapid diagnostic tests (Ag-RDT) with at least 80% sensitivity and 97% specificity. In the era of Omicron variants, we sought to ascertain the performance of the INDICAIDTM Ag-RDT compared to real-time PCR (RT-PCR) as the gold standard.

Methods

A laboratory-based study was conducted among consenting individuals tested for COVID-19 at the virology laboratory of the Chantal BIYA International Reference Centre, Yaoundé-Cameron. The samples were processed by INDICAIDTM Ag-RDT and DaAn Gene real-time PCR according to the manufacturer's instructions, and PCR-results were interpreted as per cycle thresholds (CT). The sensitivity, specificity, positive and negative predictive values (PPV and NVP) of INDICAIDTM Ag-RDT were evaluated according to PCR CT-values.

Results

A total of 565 nasopharyngeal swabs were collected from participants (median age [IQR]: 40 [31-75]; M/F sex-ratio was 1.2 and 380 were vaccinated). Following PCR, overall COVID-19 positivity was 5.66%. For CT<37, INDICAIDTM Ag-RDT sensitivity was 21.9% (95%CI: [8.3-39.9]), specificity 100% (95%CI: [99.3-100]); PPV 100% (95%CI: [59.0-100]), NPV 95.5% (95%CI: [93.4- 97.1]) and kappa=0.34 (95%CI: [0.19-0.35]). For CT<25, sensitivity was 100% (95%CI: [47.8-100.0]), specificity 99.6% (95%CI: [98.7-99.9]); PPV 94.4% (95%CI: [51.7-100]), NPV 100% (95%CI: [99.3-100]) and kappa=0.83 (95%CI: [0.6-1.0]). COVID-19 sequences generated were all Omicron BA.1 subvariants.

Conclusions

For patients infected with high viral loads (CT<25), INDICAIDTM Ag-RDT has high intrinsic (sensitivity and specificity) and extrinsic (predictive values) performances for COVID-19 diagnosis. Due to its simplicity and short turnaround time, INDICAIDTM Ag-RDT is, therefore a reliable tool to prevent the spread of COVID-19 at community level in the current era of Omicron subvariants.

1414

Advocacy As a Determinant for Sustainable Domestic Financing Towards an Effective Pandemic/Epidemic Preparedness and Response in Africa: Using Ghana As a Case Study, from 2021-2023.

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Keywords

Advocacy, Public health, Emergency, Fund, Ghana

Introduction

In Ghana, the COVID-19 pandemic made clear the impact of financing gaps on epidemic response. There are recommendations and country policy objectives for the establishment of a Public Health Emergency Fund (PHEF) for Ghana since 2017. Ghana has not yet met this objective, which is key to ensuring sustainable financing capacity, toward global health security. Advocacy can ensure urgent action by the government. The Global Health Advocacy Incubator has sought to ensure that Ghana achieves this objective. The objectives of the advocacy for a PHEF include; generating broad national stakeholder discussions; mobilizing citizens' support and calls to the government; and generating recommendations to the government.

Methods

Using a systematic and explorative approach, we mapped out civil society organizations, Members of Parliament, Ministries of Health and Finance, Academia, Journalists, health professional bodies, and Key Opinion Leaders as stakeholders. We sensitized, built coalitions, and cultivated champions among the stakeholders. Using effective media communications strategies, we shared resonating advocacy messages, targeting policy decision-makers, on the importance of a PHEF. We convened national stakeholders' fora, academic symposiums, and journalists' awards. A citizens' petition calling for a PHEF was generated and presented to the government.

Results

We have generated over 20 earned media reports, over 30 published articles in print and electronic media, over 100 social media posts, and engaged at least 15 policy-makers on the PHEF. The citizens' petition gathered nearly 600 signatures, culminating in a request by the Ministry of Finance for a proposal on the establishment of the PHEF. A workshop of key national stakeholders was held to generate recommendations for the proposal.

Conclusions

The advocacy has enhanced understanding and knowledge of the need for a PHEF, offering a platform for stakeholders to make recommendations. Engagement for an effective financing mechanism to support pandemic/epidemic preparedness in Ghana is advanced.

1433

Willingness to accept COVID-19 vaccine and its determinants in Ethiopia: A systematic review and meta-analysis

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Keywords

COVID-19 vaccine, COVID-19 vaccine uptake, willingness to accept COVID-19 vaccine, Vaccine acceptance, Ethiopia

Introduction

Vaccination is one of the most crucial strategies in the control of pandemics such as COVID-19. Although a couple of research has been conducted to assess the willingness of the population to accept the COVID-19 vaccine, the findings are inconsistent and inconclusive. This study aimed to assess the pooled willingness to uptake the COVID-19 vaccine and its determinants in Ethiopia

Methods

Published and unpublished articles were accessed from various electronic databases and digital libraries. A random-effects model was used to estimate the pooled effect size with a 95% confidence interval. Inverse variance (I2) was used to visualize the presence of heterogeneity. Publication bias was assessed using funnel plots and Egger's statistical test.

Results

A total of 2345 studies were identified from several databases and 16 studies fulfilled the eligibility criteria and were included in the final meta-analysis. The pooled magnitude of willingness to accept the COVID-19 vaccine in Ethiopia was 55.19 % (95% CI: 42.91, 67.48). The current meta-analysis indicated that age greater than 25 years (OR=1.49, 95% CI: 1.12, 1.98) and having a good attitude towards the COVID-19 vaccine (3.57, 95% CI: 1.46, 8.72) were significantly associated with the COVID-19 vaccine uptake.

Conclusions

In general, the magnitude of the COVID-19 vaccine acceptance rate among the public is unacceptably low in Ethiopia. Therefore, there is a need to build public trust through the provision of reliable and consistent information about vaccines using different media outlets.

1437

Investment in newborn care in the era of the COVID-19 pandemic: Qualitative assessment of investment threats and opportunities in four African Countries.

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Keywords

COVID-19, Small and sick newborn, investment, funding, health system

Introduction

Investment in Small and sick newborn care (SSNC) intervention has potential to avert >750,000 deaths yearly, yet district hospitals in 90 highest-burden countries lack functional newborn care unit. Increasing political visibility for newborn targets has yet to translate into major donor investments, and national investments are harder to track. COVID-19 pandemic strained SSNC service delivery, and LMICs received major funding and donations from the World Bank and other bilaterals. Through NEST360, an international alliance working with governments in Kenya, Malawi, Nigeria and Tanzania to provide high-quality SSNC, we explored investment opportunities and threats for resilient health systems across the four countries.

Methods

We qualitatively collected data using co-designed in-depth Interview guide from purposively sampled (n=62) policymakers and funders responsible for maternal newborn health across the four countries. Data were digitally recorded, transcribed verbatim and coded in NVivo-13 software using common coding framework. Multi-country team conducted inductive and deductive content thematic analyses, and secondary analyses focusing on investment themes.

Results

COVID-19 pandemic changed funding environment. Although direct investment in SSNC was not prioritised in funding proposals, SSNC benefited from indirect funding influxes. Most investments were directed towards pandemic-specific responses including virtual training and enforcing infection control measures. There was increased direct government allocation and donor funding including philanthropic cash and in-kind donations. In Kenya and Nigeria, national banks and non-governmental organisations supported funding for oxygen systems while in Nigeria and Malawi private philanthropists were mentioned as supporting financially and community-based organisations in Tanzania. Donations were short-term giving false sense of investments that were unsustained beside supportive environment that COVID-19 created for funding proposals and swift action.

Conclusions

Optimising synergies during acute investments on areas that benefit SSNC like infection control and oxygen systems should be sustained. Using evidence-based investment cases enable local champions to make case now and in future for resilient health system.

1464

A modular deep sequencing laboratory for infectious disease diagnostics, surveillance, and biosecurity in low-income countries

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Keywords

AMPHEUS, genomic surveillance, pandemic preparedness

Introduction

Background: Low-income countries face challenges maintaining biosecurity and population health and would benefit from decentralized diagnostics for endemic diseases like HIV, with integrated genomic surveillance.

Methods

Methods: The Analytics and microbiology for precision health and epidemiology – unified solutions (AMPHEUS) platform is a high-throughput modular laboratory system performing diagnostics and pathogen-agnostic metagenomic-based sequencing from low-volume samples. Multiplexed-PCR quantifies pathogens during library preparation, providing rapid clinical data while sorting samples for targeted or untargeted or metagenomic analysis. Our prototype, in Lusaka, Zambia, is designed according to ISO15189 WHO standards, with hybrid solar power for temperature regulation and power resilience. The modular design enables distribution of the diagnostic step to smaller facilities for faster turnaround times and cost efficiency. Deployment to Zambia is supported with clinical audits and qualitative studies to identify shortfalls in existing sampling strategies, data handling, and user acceptability.

Results

Results: Laboratory methods were initially validated in Oxford for HIV detection and drug resistance surveillance using 6,000 finger-prick blood specimens. The same protocol generated up to 1,500 weekly SARS-CoV-2 genomes during the pandemic and identified active viraemic infections, even without pathogen-specific primers or probes. Ongoing formative work reveals underutilization of genomic data (eg. for HIV resistance surveillance), slow return of diagnostic data, and community disengagement that needs to be addressed for successful integration.

Conclusions

Conclusion: The AMPHEUS platform offers a sustainable solution for diagnostics, clinical monitoring, and public health surveillance in low-income countries to enhance infectious disease management and strengthen pandemic preparedness in resource-limited settings.

1469

Prioritizing zoonoses for global health security in Zambia, 2023: a One Health approach.

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Keywords

One Health, Pandemic, Preparedness, Zoonoses, Multisectoral, Strategic, Coordination.

Introduction

Zoonotic diseases represent critical threats to global health security. Emerging and re-emerging zoonotic diseases pose a threat to humans, animals, and the environment. To address these threats, Zambia conducted a One Health Zoonotic Disease Prioritization (OHZDP) workshop to prioritize zoonotic diseases of greatest concern with equal input from representatives of human, animal (domestic and wildlife), and environmental health sectors and others and develop next steps and action plans to address the priority zoonotic diseases using a One Health approach.

Methods

In July 2023, Zambia utilized OHZDP Process, which is a mixed-methods prioritization process developed by the U.S. Centers for Disease Control and Prevention (CDC) and supported by Africa CDC. During the Zambia workshop, the Zambian government ministries finalized a list of zoonotic diseases considered for prioritization, defined the criteria and questions, and determined weights relevant to each criterion. A ranked zoonotic disease list was shared, and participants selected Zambia's priority zoonotic diseases and developed next steps and action plans to address the priority zoonotic diseases in collaboration with One Health partners.

Results

The five criteria used for prioritization in Zambia in weighted order were disease severity, availability of coping capacity to prevent, detect, and control, pandemic/epidemic potential, socioeconomic/environmental impact, and One Health collaboration. Ten zoonotic diseases were identified as priority for Zambia: African Trypanosomiasis, Anthrax, Rabies, Plague, Influenza Like Illnesses (Zoonotic Avian Influenza), Viral Hemorrhagic Fevers (Ebola), Zoonotic tuberculosis, Cysticercosis, Enteric Diseases (Salmonellosis), Brucellosis. Participants also developed next steps and action plans for One Health coordination, preparedness planning, outbreak response, surveillance, laboratory, prevention and control, and research.

Conclusions

Effective mitigation of the impact of endemic and emerging zoonotic diseases requires One Health collaboration across all relevant sectors to effectively protect human and animal health and the environment.

1498

Contribution and impact of PANDORA-ID-NET consortium activities on the repositioning of Africa in the global health and research architecture

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Keywords

Emerging, Re-emerging, Epidemic, Epidemiological, Surveillance, Outbreak

Introduction

Emerging and re-emerging infectious diseases are causing loss of life worldwide. In order to respond rapidly, effectively, and robustly to these epidemics, a PANDORA-ID-NET "One Health" public-private partnership involving 22 institutions (13 African and 9 European) Lead by the Fondation Congolaise pour la Recherche Médicale was created following EDCTP call (2016).

Methods

PANDORA-ID-NET implements its activities through 4 African hubs (West, East, Central, and Southern) to set up intervention teams equipped with rapid and mobile laboratory services, capable of reacting rapidly to any epidemic outbreak and carrying out inter- and intra-epidemiological actions.

Results

Some results obtained under PANDORA-ID-NET: Research Ethics during Epidemics (2021), Lassa fever in Sierra Leone (2021-2022): has been a major public health threat, 73% died (19/26 cases), Establishment Lassa fever Clinical trial capacity Nigeria (2021), Seroepidemiological survey of SARS-COV2 virus infection (2021), Vaccination assessment (2021-2022), Rift Valley fever study, Tanzania (2021): Strong positive correlations between all animal and human seropositivity (rho=0.904), MR/MDRTB whole genome sequencing, Lusaka-Zambia (2023), Bioethics and clinical research during pandemics, Entebbe-Uganda (2023), Monkeypox RoC (2023): 31% seroprevalence of antibodies against (n=104), SARS-Cov-2 Epidemiological and genomic surveillance, Autopsy Studies Zambia (2023), organization of several workshops with CDC-Africa in 2021/2022 attended by 2144 participants from 93 countries thanks to its Capacities Building and Training Success program (>1000 health workers; >17 laboratory training), more than 220 publications, including more than 20 in the Lancet (https://www.pandora-id.net/).

Conclusions

PANDORA-ID-NET has an impact on research and contributes to improving epidemiological and genomic surveillance capacities in the COVID-19 pandemic in sub-Saharan Africa and the global response. It is an important tool for building capacity in public health and supports public authorities in their efforts to put in place more resilient health systems. Finally, it supports CDC-Africa in its actions could contribute to repositioning African countries in the global health and research architecture.

1513

Safety Results of Janssen Ad26COVS1 and Novavax NVX-CoV2373 COVID-19 vaccines following Homologous and Heterologous Boosting in Adults Aged 18 to 64 Years with and without HIV infection in 3 African Countries: A Phase 2b, Randomized, Double-blind, Controlled trial

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Keywords

COVID-19, Adverse Events, Janssen Ad26COVS1, Novavax NVX-CoV2373

Introduction

The COVID-19 pandemic caused by the SARS-CoV-2 resulted in untold suffering worldwide, leading to an urgent global need for safe and effective vaccines and drugs. Despite the rapid successes in vaccine development and issuance of Emergency Use Listings/Authorizations for COVID-19 vaccines, both WHO SAGE and FDA reported limited safety data in certain underserved populations.

Methods

We evaluated the safety of two COVID-19 vaccines when given to adults with or without HIV infection in Kenya, Rwanda and the Democratic Republic of Congo (PACTR202203582920839). Adults aged 18 to 64 years who received homologous primary vaccination platform with mRNA, Adenovector or Inactivated COVID-19 vaccines, received a homologous or heterologous single booster dose of either Janssen Ad26COVS1 or Novavax NVX-CoV2373 COVID-19 vaccine. The primary safety objective was 7-day reactogenicity assessment post-vaccination and serious adverse events (SAEs) occurrence throughout the trial.

Results

Baseline characteristics were similar between study arms. Among the 1619 enrolled participants, majority were between 18-44 years old (mean age 40 years) and >65% female. Local AEs occurred in 586/1619 (36%) participants, with at least one local AE (Vaccine A: 325/808 (40%) and vaccine B: 261/811 (32%)). The most common local AE was mild pain. Other local AEs were itchiness, redness, and swelling. For systemic AEs, 693/1619 (43%) participants reported at least one systemic AE (Vaccine A: 357/808 (44%) and vaccine B: 336/811 (41%)). The most common systemic AE was fatigue, followed by muscle ache, and headache. Some participants reported diarrhoea, nausea and vomiting. Overall, 702/1619 (43%) participants reported at least one unsolicited AE (Vaccine A: 342/803 (42%) and vaccine B: 360/811 (44%). Finally, SAEs occurred in 34/1619 (2%) participants including 1 death in an HIV+ participant with tuberculosis.

Conclusions

The AEs were mild, the SAEs were unrelated and there were no serious safety concerns in both HIV+/- populations

1517

Financing Landscape for Key Populations HIV/AIDS in Uganda: March 2022

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Keywords

Key populations, HIV/AIDS, Financing landscape, Uganda

Introduction

Uganda, a low-income country with a growing population of 45.74 million, faces challenges in healthcare financing. Amidst economic fluctuations and the COVID-19 pandemic, Uganda's health sector struggles with inadequate funding, especially for key populations affected by HIV/AIDS. HIV prevalence remains high at 6.2%, necessitating targeted interventions.

Methods

This study examines Uganda's health financing and its implications for key populations affected by HIV/AIDS. It reviews government expenditure, donor contributions, and out-of-pocket spending. The study also assesses funding trends for HIV/AIDS response, particularly for key populations.

Results

Uganda's health expenditure constitutes 9.5% of the GDP, with public, private, and donor contributions. Notably, donor funding comprises 42% of total health financing. HIV/AIDS intervention expenditures peaked in 2016/17 and then declined. While the government's domestic public expenditure on the HIV/AIDS response increased significantly, it remains below recommended levels. Key populations, disproportionately affected by HIV/AIDS, receive less than 1% of HIV prevention funding, with sex workers receiving the majority.

Conclusions

Uganda's health sector faces financial challenges, with HIV/AIDS interventions for key populations requiring urgent attention. Donor reliance raises sustainability concerns, and declining funding threatens progress. Sustainable financing strategies, innovative resource allocation, and increased government commitment are crucial for addressing HIV/AIDS in key populations. Without addressing these financial gaps, achieving the 90-90-90 goals and mitigating the HIV epidemic's impact will remain challenging.

1543

Enhancing Epidemic Preparedness in Uganda: A Policy Analysis of Infection Prevention and Control In The Ebola Outbreak of 2022

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Keywords

Epidemic-preparedness, Ebola, infection prevention and control, policy analysis, Uganda

Introduction

Uganda is a hotspot for epidemics, with at least 15 outbreaks of Viral Hemorrhagic Fevers in the past 20 years. This presents a heightened risk of transmission in medical facilities, for which enhancing Infection Prevention and Control (IPC) with robust governance and financing is a key health systems intervention.

Methods

To identify IPC policy priorities, map the politics in Uganda's IPC landscape, and inform policy action, IDI conducted a qualitative case study of IPC during the Ebola outbreak in Uganda between September 2022 and July 2023 (policy window). The team reviewed relevant health systems and strategic documents related to IPC. The Winstanley's stakeholder matrix was used to identify key informants who were interviewed through in-person, telephone, and written communication. Data were synthesized guided by Kingdon's multiple streams framework – problems (priorities), policies and politics, using content analysis.

Results

In total, 17 documents were reviewed, including laws (n=4), official reports (n=4), strategic plans (n=4) or guidelines (n=3), and published literature (n=2). Of 14 key informants identified, 11 (78.6%) were interviewed: an Ebola survivor (n=1), a member of a professional association (n=1), frontline workers (n=2), non–state (2) and state actors from ministries, departments, and agencies (n=5). The emerging policy priorities were creation of legal pathways for compensation for frontline workers who died from Ebola (critical juncture) and outstanding IPC strategic documents (guidelines, strategic framework and operational plan). The politics manifested as diverse IPC financing driven by development partners with fragmented implementation, and a skilled IPC workforce with constrained jurisdiction.

Conclusions

The Ebola outbreak in Uganda presented a policy window for structural reforms to streamline IPC governance, financing and human capital. IPC stakeholders in Uganda could negotiate a new consensus to strengthen IPC implementation at health facilities.

1559

Wastewater matrices for the early detection of new and re-emerging outbreaks of enteric viruses in Yaounde, Cameroon

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Keywords

Enteric viruses, Wastewater, Adenovirus, Noroviruses, Rotavirus, Astroviruses

Introduction

Background: Human enteric viruses are a major cause of gastrointestinal illness and can be introduced into environmental through various routes. However, early detection of these viruses in wastewater would substantially contribute to the prevention of a wide range of gastroenteritis outbreaks in the community. This study aims to investigate the prevalence of five human enteric viruses in several types of environmental wastewater of Yaounde, Cameroon.

Methods

Methods: Untreated wastewater from hospital, residential sewage system and plants watering points were collected monthly between January to August 2023 and concentrated using polyethylene glycol precipitation process. Processed samples were analyzed for molecular detection of Adenovirus, Noroviruses Genotype I, Noroviruses Genotype II, Rotavirus, and Astroviruses using Real-Time PCR Bosphore® Gastroenteritis Panel Kit v1.

Results

Results: A total of 48 wastewater samples were collected in the six different sampling sites: a canal wastewater from the hospital (CHUY), a canal irrigation water (Diderot), canals wastewater from residential (Mvog Ada, Bonas, and PAPOSY) and a stagnating wastewater point from Biyem-assi, a suburb of Yaounde. Interestingly, all targeted five viruses were detected in all the sites with adenoviruses being the most predominant, at 93.75% (45/48) followed by Rotaviruses and Astroviruses 75.0% (36/48) and 66.7% (32/48), respectively. In addition, Noroviruses genogroups I and II were also detected in 35.4% (17/48) and 52.08% (25/48) samples, respectively. Our results also showed that Bonas, PAPOSY and Diderot sites were significantly the most polluted sampling sites containing all targeted viruses at high frequencies (p=0.03) compared to CHUY and Biyem-assi (of positives samples, 2/36 rotaviruses 3/32 astroviruses and only 1 noroviruses).

Conclusions

Conclusion: Despite the limited sample size tested, our results highlight the usefulness of wastewater matrices for environmental surveillance of enteric viruses in the population and the risk of acute gastroenteritis infections. Wastewater could be a useful tool to evaluate and predict outbreaks.

1684

Emergence de la Dengue au Tchad dans un contexte sanitaire vulnérable : Risque d'une épidémie généralisé : A propos de la première épidémie en Aout 2023.

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Keywords

Emergence, épidémie-généralisé, contexte-sanitaire-vulnérable Chad

Introduction

Le Tchad est confronté à une situation sanitaire caractérisée par une morbidité et une mortalité élevées dues aux épidémies (méningite, rougeole, choléra, fièvre jaune chikungunya, grippe AH1N1/2009 leishmaniose viscérale…), aux autres maladies transmissibles et non transmissibles ainsi qu'aux affections maternelles. Les efforts fournis par le Gouvernement pour la mobilisation des ressources et le renforcement de la surveillance épidémiologique ont permis ces dernières années d'assurer la détection des épidémies et d'organiser des ripostes. Durant le mois de juillet, le district d'Abéché à l'Est du Tchad à noter une augmentation des cas de fièvre avec une TDR/paludisme négative. Les échantillons prélevés ont permis de poser le diagnostic de la Dengue et l'épidémie a été déclaré en Aout 2023.

Methods

C'est une enquête transversale descriptive d'une épidémie de la Dengue en cours à l'Est du Tchad.

Results

Au total 456 cas répondant à la définition des cas de dengue ont été enregistrés jusqu'au 29/08/2023 dans 3 provinces du Tchad (deux provinces de l'Est et la capitale Ndjamena) . L'âge médian était de 25 ans [12-70ans] le sexe ratio H/F= 1. Les signes cliniques étaient dominés par la fièvre (100%)

céphalée (100%) myalgie (100%). Le taux de léthalité est de 3,8%.

Conclusions

Les épidémies ont un impact considérable sur le système de santé au Tchad. Les défis pour lutter contre ces épidémies sont marqués par une insuffisance des ressources humaines, financières et logistiques. La présence du vecteur dans tout le pays rend la situation encore plus préoccupante, car une riposte inadéquate pourrait avoir des conséquences désastreuses sur le système de santé et sur la santé des populations, en particulier les plus vulnérables. Pour réduire cet impact, il est crucial de mettre en place une surveillance accrue, une détection rapide et une riposte efficace.

1701

One Health Approach to Identify Novel Non-rodent Lassa Virus Hosts in Nigeria

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Keywords

Lassa virus, Lassa fever, zoonotic, spillover, transmission dynamics

Introduction

Identifying host species contributing to zoonotic spillover events is critical to the One Health approach to outbreak preparedness. To characterize animal hosts of Lassa virus (LASV), we sampled animals in four locations in southern Nigeria with human cases of Lassa Fever (LF).

Methods

Between May 2021-October 2022, non-rodent animals were sampled in two LF-endemic regions (Ebonyi and Ondo States) and two LF non-endemic regions (Ogun and Oyo States). Blood, oral and rectal swabs were collected from animals including dogs, cats, sheep, goats, cattle, pigs, lizards, and birds around consented households with human LF. Samples were tested for LASV using RT-qPCR and for LASV exposure via ELISA. Whole genome sequencing was performed on selected samples. All tests of significance were two-tailed.

Results

Of 870 non-rodents sampled, 585 were analyzed by RT-qPCR and 679 for LASV IgG by ELISA. 144/585 (24.6%) tested positive for LASV by RT-qPCR. Ebonyi State (91/243—37.4%) demonstrated a significantly higher positivity compared to other states ($p < 0.0001$). Lizards had the highest rate of positivity (37.9%). Total seropositivity by ELISA in all animals was 10.8% (73/679), with the highest seroprevalence in cattle (21.7%) and lowest in pigs (4.3%). Though not statistically significant, seroprevalence was highest in Ogun State (14.8%) compared to other locations. Genomic sequencing of isolated LASV was consistent with sub-lineage 2g.

Conclusions

This study characterizes a wider range of animal LASV hosts than previously identified. Though specific impacts are still unknown, detecting LASV in non-rodent animals living near confirmed human LF cases suggests their involvement in transmission as potential reservoirs and underscores the importance of a One Health approach to outbreak preparedness. Additional assessments comparing viral genomes from humans and animals will be critical in understanding LASV transmission dynamics and will ultimately guide the development of LF countermeasures.

1709

Moving the Needle for COVID-19 Vaccinations in Nigeria Through Leadership, Accountability, and Transparency.

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Keywords

Vaccines
Funding
Collaborators
Leadership, Governance & Accountability

Introduction

The National Primary Healthcare Development Agency (NPHCDA) aimed to vaccinate 70% of the Nigerian population by December 2022, however, by June 2021, only 3% had received a dose. Funding gaps and accountability issues hindered progress. In September 2021, Nigeria Solidarity Support Fund (NSSF) partnered with NPHCDA to address these challenges. 6 states were selected based on geographical distribution, performance, political will, and absence of external resources: Adamawa, Edo, Imo, Katsina, Nasarawa, and Ogun states. The approach consisted of unrestricted funding and technical support at sub-national and national levels respectively.

Methods

NSSF collaborated with NPHCDA to provide training to healthcare workers on vaccine advocacy, communication and vaccine logistics. Information gaps were addressed to increase their confidence in the vaccine's efficacy. Stakeholders and community leaders were mobilized to debunk rumors and promote vaccine importance, connecting community members to vaccination services.

Indicators were established for accountability and transparency. Each state set population-based targets, reporting progress weekly. Immunization data was reported via the EMID application and weekly data review meetings were conducted to ensure data quality.

Results

5 out of 6 states received unrestricted funding and vaccine supplies to ramp up vaccination coverage. 12,000 healthcare workers were trained on safe immunization practices and 133 local government areas were reached using religious and community leaders. As of March 2022, 5,235,493 people had been vaccinated in the five states, which is almost half of the 11,985,336 people who had been vaccinated in Nigeria at the time.

Conclusions

The NSSF-NPHCDA partnership demonstrated what can be achieved in the health sector through strategic collaborations and private-sector funding. It showed that strengthened leadership, management, and coordination are vital to the implementation of effective interventions for pandemics.

Although Nigeria is still one of the countries with the lowest COVID-19 vaccination coverage, leadership buy-in, accountability mechanisms, and unrestricted funding moved the needle.

1746

The Impact of Vaccination and Surveillance on Controlling an Ebola Virus Disease Outbreak in Rwanda

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Keywords

Ebola Virus Disease, Outbreak, Rwanda, Surveillance, Vaccination

Introduction

Ebola virus disease (EVD) is a severe, often fatal disease resulting from Ebola virus infection, with mortality rates ranging between 25% and 90%. Despite Rwanda's efforts to prepare for a potential EVD outbreak, its proximity to Uganda and the Democratic Republic of Congo (DRC), which both had EVD outbreaks recently, puts it at elevated risk for an outbreak. This study applied mathematical models to assess the potential effects of improved surveillance and targeted vaccination on the number of EVD cases if an outbreak occurred in Rwanda.

Methods

We developed an EVD compartmental model for 13 Rwandan districts bordering Uganda and DRC, comprising 6.2 million individuals, of which 8% are healthcare workers (HCWs). The model assumed that HCWs have a higher infection risk compared to community members. We assessed three interventions: 1) case detection (surveillance) at two, four, and eight days from symptom onset; 2) vaccination of community members versus HCWs; and 3) vaccinating individuals prior to the outbreak ("proactive") versus during the outbreak ("reactive").

Results

Detecting cases quickly is crucial for limiting outbreak size. The model predicted up to 70,000 cases over a period of 365 days if case detection takes 8 days. However, cases dropped to 300 within 2 days of detection. Proactive vaccination was more effective in limiting incidence than reactive vaccination, for both health workers and community members. With limited vaccines, prioritizing health workers over the public minimizes cases most effectively. Increasing vaccine coverage in any group consistently reduces cases.

Conclusions

Timely surveillance is paramount, with a focus on detecting cases early, ideally within two days of symptom onset. We recommend a proactive vaccination strategy, and in scenarios with few vaccines, HCWs should be first in line because of their increased exposure risk. Ultimately, combining enhanced surveillance with vaccination is the most effective strategy to minimize infections.

1775

Building Resilient Financing Mechanisms through PFM Reforms in Kenya's Decentralized system

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AMREF Health Africa, Kenya, Nairobi, Kenya

Keywords

Autonomy; Predictable; Timely; Appropriation in Aid; Entity and defray

Introduction

Most (82%) African countries including Kenya have decentralized health care systems. Prior to devolution, Public health facilities were allowed by law to raise, retain and use revenues collected. Post devolution, health facilities, remit all their monies to County Revenue Fund (CRF) account. Due to this, health facilities lost financial autonomy and the accountability that comes with it. This in turn affected the accessibility, availability and quality of health services

Methods

AMREF Health Africa in Kenya and the Council of Governors co-created a Health Investment and Policy Project that focus on ringfencing health funds through PFM reforms that facilitate health facility operational and financial autonomy. The project provides Technical Assistance to counties in line with PFM Act (2012) Sec 109(2)(b) to allow health facilities to collect, retain and utilise their monies to defray costs through Appropriation in Aid (AiA).

Results

The Nakuru County experience reveals that granting health facilities operational and financial autonomy results in increased, predictable and timely revenue –important levers in pandemic preparedness. Consequently, there's timely procurement of essential commodities; hiring of locum medical staff as well as support staff to bridge HRH gaps; improved motivation among HCWs; increased availability of specialized services and overall better health outcomes.

Conclusions

1. Africa needs to prioritize PFM reforms to grant health facilities operational and financial autonomy and corresponding accountability measures so that they become responsive to the communities they serve.

2. Given the lessons from Covid-19, there is need for political support to increase domestic resource allocation to the social sectors to mitigate the gaps left by donor funding.

1812

PERSPECTIVES ON ADOLESCENTS TOWARDS COVID 19 VACCINES IN SELECTED SCHOOLS IN LUSAKA DISTRICT, ZAMBIA

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Keywords

COVID 19, vaccine, adolescents, perceptions

Introduction

The outbreak of COVID-19 caused by the SARS-CoV-2 virus has become a severe global public health crisis since its first identification in December 2019. Following the first case in Zambia in March 2020, the Ministry of Health (MoH) aligned its response with the World Health Organization (WHO) guidelines. While personal prevention measures have been effective, achieving herd immunity through vaccination is crucial for long-term success. Zambia has approved six vaccines and vaccinated around 70% of its population. However, vaccine hesitancy, particularly among adolescents, remains a significant challenge. Understanding the factors influencing vaccine perceptions and attitudes in this age group is critical but unexplored in Zambia. This study aimed to explore adolescent perspectives on COVID-19 vaccines in schools within Lusaka district, Zambia

Methods

Qualitative research methods, including focus group discussions and in-depth interviews, were employed to collect data on the attitudes and perceptions of the participants regarding COVID-19 vaccines. The study area, Lusaka district, comprised four distinct geographic areas with low vaccination coverage. The sample size included forty adolescent school-going pupils selected through typical purposive sampling. Thematic analysis was used to analyze the data gathered from the focus group discussions and in-depth interviews.

Results

The findings revealed that adolescents generally had an understanding and awareness of COVID-19 and the vaccine's purpose in preventing virus transmission. Positive perceptions of the vaccine's efficacy correlated with higher vaccine acceptance, while concerns about potential side effects and misinformation acted as barriers to uptake. Motivating factors included the perceived risk of contracting COVID-19. Community health workers and peers also influenced vaccine uptake decisions.

Conclusions

Adolescents' vaccine willingness is hindered by fears and misinformation. Health providers and robust public health campaigns, using diverse media, can counter this. Community health workers and peer support aid in addressing hesitancy. Informed adolescents contribute to global vaccination goals.

1846

Evaluation by participants of a tailored model of webinars in COVID-19 for healthcare workers in Zambia – A post webinar survey in 2023

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Keywords

COVID-19, healthcare workers, webinars, pandemic preparedness,

Introduction

Zambia has been adversely affected by COVID-19. Capacity building for staff is essential for pandemic preparedness, however most in-service trainings mix different healthcare workers, and have untailored training material, thus reducing uptake of skills and knowledge. In 2023, the Zambian Ministry of Health piloted a series of five COVID-19 webinars with material tailored differently for clinicians, nurses, pharmacy staff, laboratory workers and data entry cadres, and carried out a post webinar survey among the attendees to assess this strategy's effectiveness.

Methods

An online based structured questionnaire was administered to all attendees, gathering information such as profession, and their assessment of the content, teaching methods, and the relevance of the knowledge acquired. Additionally, participants were asked the likelihood to recommend the training to colleagues. Likert scales were used to aggregate participant responses and stored on REDCap®. Data was analysed using Microsoft Excel.

Results

A total of 116 (34.1%) responses were recorded from 340 attendees. Of the respondents, 44 (37.9%) were nurses, 41 (36.1%) were clinicians ,21 (18.1 %) were laboratory workers. Both environmental health technicians and pharmacy staff gave 5 (4.3%) of the responses each. The teaching strategies were rated as being very effective by 72 (81%) of the participants, with 76 (73%) of them agreeing that their expectations were met, and 88 (78%) of the respondents saying they would recommend the webinars to a colleague. Ninety-five (82%) of the respondents affirmed an increase in knowledge and skills after the webinars.

Conclusions

Different healthcare workers found tailored online sessions in COVID-19 training effective and agreed to an increase in their knowledge and skills after the sessions. Most participants would recommend the webinars to colleagues. These findings necessitate consideration for upscaling of such a virtual training model in resource limited settings like Zambia for in aiding pandemic preparedness.

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EXAMINING THE SUSTAINABILITY AND IMPACT OF AN INNOVATIVE COMMUNITY PHARMACY MODEL IN EXPANDING ACCESS TO NON-COMMUNICABLE DISEASE MEDICINES IN NAIROBI, KENYA

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Keywords

Sustainability , Impact , Access , Nairobi ,Health Financing, Community Pharmacy

Introduction

As the burden of non-communicable diseases (NCDs) continues to rise globally, low and middle income countries are increasingly appreciating the role of primary health care (PHC) facilities in early screening, detection and disease management. However, PHC is poorly funded in most countries, resulting in capacity and operational challenges.

There is increased recognition that the most effective solutions to NCDs management will come from strengthening community and PHC services. However, most PHC facilities have minimal capacity to address NCDs as compared to infectious diseases. Previous studies have found PHC facilities are poorly equipped with essential NCD medicines.

In response, innovative models have begun emerging, including community-linked initiatives. This study sought to examine an innovative revolving fund pharmacy established through partnership between a registered community group (with upto1000 members living with diabetes /hypertension) and a PHC facility designed to bridge PHC inadequacies.

Study Objectives

To describe the features, sustainability and perceived effectiveness of the model in promoting access to NCD medicines in Nairobi, Kenya.

Research Questions

What are the features of the model?

Is the model sustainable?

What is the perceived effectiveness?

Methods

This was an exploratory single case study of the revolving fund model. Being a qualitative study, depth rather than numbers informed the study. Key informant in-depth Interviews were administered to the leadership, registered members of the community group and facility service providers. Interviews were recorded and audio transcripts analyzed using the thematic framework approach.

Results

The study revealed that the actor ecosystem generally understood the key model features, including its operations and financing. There was general agreement that the community pharmacy had promoted access to NCD medicines across key groups. Analysis of sustainability factors suggested that the model was relatively sustainable.

Conclusions

The study recommends a policy framework with a regulation and oversight framework for sustainability of the community pharmacy model .

2032

Assessing challenges and opportunities in enhancing sustainable oxygen supply and access in South African district rural hospitals during pandemics, July 2022 to December 2022.

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Keywords

Oxygen supply, sustainable access, pandemic preparedness.

Introduction

During the COVID-19 pandemic, South Africa faced significant challenges in ensuring adequate oxygen supply, heightening mortality rates. These challenges disproportionately affected rural hospitals, compounded by geographical and logistical obstacles, emphasizing the need for sustained oxygen solutions. In collaboration with the National Department of Health, the Clinton Health Access Initiative undertook oxygen infrastructure assessments in selected South African rural hospitals. The objective was to investigate the barriers of oxygen infrastructure and supply impeding access and devise recommendations for addressing these disparities for future health emergencies.

Methods

A comprehensive evaluation approach was utilized and 106 rural district hospitals in 7 provinces were assessed and evaluated. The hospitals were sampled purposively for the assessments. Both quantitative and qualitative methods were used to collect data. Data on patient numbers, oxygen consumption alongside semi-structured interviews with hospital staff were collected. Descriptive analysis highlighted oxygen

infrastructure and consumption trends, while thematic analysis uncovered recurring patterns and barriers to oxygen supply.

Results

A total of 106 hospitals were assessed across 34 districts in 7 provinces with 40 hospitals in Eastern Cape and 20 hospitals in Limpopo. Eighty-five (80%) had oxygen reticulation installation in the wards, 20% lacked oxygen infrastructure entirely and solely rely on mobile cylinders. Notably, 33% had insufficient oxygen outlets relative to bed count. Scarce access to medical gas for neonatal care was evident, with outdated infrastructure prevalent. Moreover, transportation issues, road conditions and distance from air separation units remained a challenge.

Conclusions

Oxygen infrastructure gaps expose rural hospitals to risk of oxygen shortages. Addressing these gaps is crucial to improve access and supply of oxygen. Endorsing viable solutions can guide national health authorities for future pandemic preparedness and long-term healthcare needs. Proposed solutions include bulk liquid oxygen supply, oxygen concentrator systems, monitoring supplier performance, thereby yielding uninterrupted supply, resulting in substantial cost savings.

2436

VirCapSeq-based Metagenomics Survey of Viruses Circulating Among Rodents in the Eastern Region, 2022

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Keywords

Metagenomics, Surveillance, Virome, Zoonotic, VirCapSeq

Introduction

Many studies have clearly demonstrated the likelihood of zoonotic virus spillover when people are in close contact to large numbers of animals serving as viral reservoirs. In order to understand the potential for zoonotic diseases in Zambia's Eastern region, we engaged in a survey of the viruses carried by rodents using a pan-viral metagenomics technique termed VirCapSeq-VERT.

Methods

After collecting animals in the field, we harvested tissue, extracted total nucleic acids, and applied the VirCapSeq-VERT protocol which comprises a positive capture augmentation to standard Illumina NGS workflow. The technique is able to identify the genome of any virus able to infect vertebrates that is present in the specimen. We interrogated the genomics data using a novel graphics-based bioinformatics analysis tool termed, the Rapid Identification of Microbes (RIM) to afford access to more students, faculty, technicians, and public health policy leaders.

Results

Using RIM and standard bioinformatics tools available to the public, we identified known and novel viruses capable of impacting human health. Over 50% of the specimen had papillomavirus while over 25% of the specimen had novel or known paramyxovirus. Additionally novel or known strains of polyomavirus, herpesvirus, and kobuvirus were detected as well. The data are being prepared by the UNZAVET team for long-term storage and availability in accordance with policy developed by UNZAVET and Zambia government leaders including ZNPHI and the Ministry of Fisheries and Livestock.

Conclusions

We have demonstrated the utility of using animals as sentinel tools to monitor circulating pathogens by applying metagenomics techniques such as VirCapSeq-VERT. The One Health approach fusing both animal and public health, which have been traditionally treated as separate and distinct, is effective and essential to the efforts to prevent the next pandemic. The tool is valuable for early warning surveillance of known and novel pathogens among potential reservoirs.

2552

Acceptability of the Ebola Virus Disease Vaccine Among Healthcare Workers in Uganda, August 2023.

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Keywords

Ebola virus disease, vaccine hesitancy, acceptance, healthcare workers

Introduction

Emerging infectious diseases like the Ebola Virus Disease (EVD) pose significant global public health threats. Uganda has experienced multiple EVD outbreaks, the latest occurring in 2022. Frontline healthcare workers (HCWs) are at increased risk, yet their acceptance of the recently approved EVD vaccine is not well understood. This study aimed to investigate the determinants of EVD vaccine acceptance among HCWs in Uganda.

Methods

This multicenter cross-sectional study was conducted from July to August 2023 across 16 tertiary hospitals in Uganda. HCWs providing clinical care at emergency departments or equivalent units were eligible. We consecutively recruited 658 participants using the probability-proportional-to-size sampling technique and collected data using a self-reported questionnaire. Data analysis was performed using STATA, and factors influencing EVD vaccine acceptance were identified through multivariable logistic regression.

Results

The median age was 32 years (IQR: 28 – 38), with more female HCWs (55.6%) and nurses (57.8%). Social media (70.1%) and television (68.8%) were the most common sources of information, while 34.8% had received EVD training in the past year. About 73.4% (n=483) were willing to accept the EVD vaccine, and this was associated with age (p=0.013), years of practice (p=0.029), educational level (p=0.029), professional cadre (p=0.015), previous EVD training (p=0.043), and receiving EVD information over the radio (p=0.023). Being male (aOR: 2.04, 95%CI: 1.32–3.13, p=0.001), age >35 years (aOR: 1.82, 95%CI: 1.17–2.84, p=0.008), a nurse (aOR: 2.16, 95% CI: 1.07–4.38, p=0.032) and receiving EVD training (aOR: 1.57, 95%CI: 1.04–2.38, p=0.033) were significantly associated with vaccine acceptance.

Conclusions

About 73.4% of Ugandan HCWs are willing to accept the EVD vaccine, with acceptance significantly higher among males, nurses, those aged >35 years, and those who have received EVD training. Continuous training, especially in sub-populations with lower acceptance, is recommended. Future research should investigate the barriers to vaccine acceptance and solutions.

2571

Limited awareness of HIV-positive status and HIV prevalence among female sex workers in Rwanda "Progress towards reaching the first 95 of UNAIDs 95-95-95 targets by 2030": a cross-sectional study, June 2023

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Keywords

Sex workers, Survey, Respondent-driven sampling, Rwanda

Introduction

Various factors influence the utilization of HIV testing services (HTS) among female sex workers (FSWs), encompassing their understanding of HIV and familiarity with available services to people living with HIV. An integrated biological and behavior survey was conducted to determine HIV prevalence and progress towards the first 95 of UNAIDs 95-95-95 targets among FSWs in Rwanda.

Methods

A cross-sectional biological and behavior survey was conducted among FSWs in Rwanda. Respondent-driven sampling was used to recruit participants aged 15 years and resided in the country for at least 3 months prior to the survey, 2489 was the expected sample size. The study was conducted from 9th May to 25th June 2023, consented participants were interviewed and tested for HIV as per Rwandan national guidelines. Tablets were used to collect data and daily transfer to central server for storage. Descriptive analysis was done, and multivariable logistic regression model was performed using STATA 17 to analyze factors associated with unawareness of HIV-positive status.

Results

A total of 2,541 FSWs participated in the survey. Overall, 854 were infected with HIV, yielding a prevalence of 35.2% [31.8,38.7]. The high and low HIV prevalence was in Kigali city

and Northern Province with 43.5% [37.0 - 50.2] and 21.6% [17.6 - 26.2] respectively. In total 698 (82%) [76.6-86.3] FSWs were aware of their HIV-positive status. In multivariable logistic regression model, unawareness of HIV-positive status was high in FSWs aged 15-19 years [Adjusted Odd Ratio (aOR): 10.5, Confidence interval (C.I): 2.2-50.2], 25-29 years (aOR: 2.9, C.I: 0.7-2.2), FSWs who were divorced or separated (AOR:0,6, C.I: 0.7-0.9) and those waiting their clients at the street or car park (aOR: 0.4, C.I: 0.2-0.8).

Conclusions

Being unaware of their HIV-positive status limits the uptake of HIV treatment among FSWs in Rwanda. This highlights the importance of enhanced case-finding approaches to increase HTS among FSWs

2607

Immunogenicity Results following Homologous and Heterologous Boosting with Janssen Ad26COVS1 and Novavax NVX-CoV2373 COVID-19 vaccines in Adults Aged 18 to 64 Years with and without HIV infection in 3 African Countries: A Phase 2b, Randomized, Double-blind, Controlled trial

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Keywords

COVID-19 Adverse Events, Janssen Ad26COVS1, Novavax NVX-CoV2373

Introduction

The COVID-19 pandemic caused by SARS-CoV-2 resulted in untold suffering worldwide. The recurring new waves of COVID-19 cases caused by Variants of Concerns exacerbated the global public health crisis. Observational studies also showed waning immunity to primary vaccination or SARS-CoV-2 mutants, and a decline in vaccine effectiveness overtime after primary vaccinations.

Methods

We evaluated the immunogenicity of two COVID-19 vaccines given to adults with or without HIV infection in Kenya, Rwanda and DRC (PACTR202203582920839). Adults aged 18-64 years who received homologous primary vaccination with mRNA, Adenovector or Inactivated COVID-19 vaccine platforms, were randomized 1:1 to receive a single booster dose of Janssen Ad26COVS1 or Novavax NVX-CoV2373 vaccine. The primary immunogenicity objective was assessment of SARS-CoV-2 neutralization antibody titers and ELISA IgG antibodies 28 days post-booster vaccination.

Results

Baseline characteristics were similar between study arms. Of 1619 enrolled adult participants, majority were 18-44 years age old (mean 40 years, SD=10.5). Overall, the analysis showed a substantial rise in SARS-CoV-2 rS Protein IgG Antibody levels at Day 28, shown by Geometric Mean Ratios (GMRs): HIV- (Vaccine A, 1.80 [95% CI:1.61 - 2.02] vs Vaccine B, 3.09 [95% CI: 2.67 - 3.58] ($p<0.0001$)) and HIV+ (Vaccine A, 1.81 [95% CI: 1.68 - 1.95] vs Vaccine B, 2.51 [95% CI: 2.31 - 2.72] ($p<0.0001$)). At Day 85 and Month 6, the GMRs remained significantly >1, with values lower compared to Day 28. Vaccine B consistently elicited a stronger immune response than Vaccine A across all time points. The GMRs between platforms varied non-significantly; among HIV- participants, there was a more favourable response to vaccine B, while HIV+ participants a better response to vaccine A (p 0.508).

Conclusions

ELISA and neutralization assay results showed both vaccines increased antibody levels with vaccine B displaying a higher response, particularly on the Inactivated and Adenovector platforms on Day 28.

2723

Improving Community Engagement through Localized Interpersonal Communication (IPC) Interventions: Lessons Learnt from COVID-19 Vaccination Campaigns for future pandemic preparations.

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Keywords

IPC, Vaccination, emergency, Covid

Introduction

Efforts to generate demand for COVID-19 vaccines necessitate collaborative actions and strategic mobilization campaigns. The USAID Social Behavior Change Activity (SBCA) partnered with the Ugandan Ministry-of-Health to execute a campaign titled "WE-SHOULDN'T-GO-BACK," employing community-tailored Interpersonal Communication-(IPC) strategies. Collaborative actions and strategic mobilization campaigns for generating demand for COVID-19 vaccine initiatives like the "WE SHOULDN'T GO BACK" campaign are critical for achieving widespread vaccine acceptance, controlling/preparing for the pandemic, and fostering culture of health protection. This kind of campaign has the potential to promote behaviour-change, enhance health-communication, and strengthen resilience in the healthcare sector. Thus, improving future public health vaccination emergency preparedness.

The campaign aimed to establish a strong presence and heightened COVID-19 risk awareness, employing techniques such as "dominating spaces" and "creating a siege."

Methods

Intensive IPC initiatives were conducted across 67 districts in Uganda between June and July 2022. SBCA trained mobilizers, including Village Health Team members (VHTs), as well as influential figures like religious and cultural leaders, in customized IPC methods, selection of these categories of people was guided by the district officials, and the participants were mobilized by the community leaders. These approaches encompassed adapting messages into folk arts, incorporating music, dance, and drama, along with home visits, discussions within places of worship, and outreach activities in bustling locations like markets and bus/taxi parks.

Results

The campaign successfully conveyed COVID-19 vaccine-related messages to over 16,129,510 individuals via mass and social media. Notably, vaccination coverage increased from 45% to 57% for complete vaccination and 74% to 81% for initial doses.

Conclusions

The IPC established an enabling environment for COVID-19 vaccine adoption by fostering a comprehensive understanding. Hence, informing future emergency vaccine preparedness.

2725

Prioritizing Infection Prevention and Control Improves Health Facility and Health Worker Safety During the COVID-19 Pandemic in Five African Countries, 2021–2023

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Keywords

Infection prevention and control (IPC), Health workers, Africa, COVID-19

Introduction

Infection prevention and control (IPC) is an evidence-based approach that can prevent health worker and patient infections in health facilities. In 2021–2022, of 18 surveyed countries in Africa, only eight had an active national IPC program and six had a trained IPC focal point. There is therefore a need to implement IPC program where they do not exist to make health facilities safer and reduce health worker COVID-19 infections.

Methods

We implemented multi-phased IPC programs in five African countries (Ethiopia, Liberia, Sierra Leone, Uganda, and Zimbabwe) with Ministries of Health and other partners. Phase 1 (March 2021–February 2022) focused on real-time mentorship, health facility infrastructural improvements, personal protective equipment (PPE) procurement, and continuous monitoring and evaluation of health facility data to address IPC gaps. Phase 2 (June 2022–May 2023) introduced non-intervention facilities to evaluate program outcomes; intervention facilities continued to receive from the package of inter-

ventions from phase 1, whereas non-intervention facilities received monitoring only. During phase 2, tasks were shifted from external mentors to health facility-based mentors to increase sustainability. In both phases, health facilities were assessed monthly using a standardized tool, on a range of IPC indicators with scores (0–100) reflecting five domains (screening/triage, training, hand hygiene, waste management and environmental cleaning, and PPE availability and use).

Results

In phase 1, overall IPC scores improved from 64% to 90%. In phase 2, intervention facilities sustained higher IPC scores than non-intervention facilities (90% versus 67% respectively). Health worker infections remained low in intervention facilities during the program.

Conclusions

A structured mentorship approach resulted in improved IPC scores, and gains were sustained through ongoing supportive supervision and task shifting. Monitoring alone did not result in improved scores. Investment in IPC is critical to protect health workers and patients during a pandemic and as a prevention strategy.

2745

SYNERGISM OF VIRAL CAPTURE SEQUENCING WITH STANDARD LABORATORY TESTING TO DETERMINE FEBRILE ILLNESS ETIOLOGIES IN BAMAKO, MALI

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Keywords

Etiology, fever, infectious diseases, lab diagnosis, sequencing, Mali

Introduction

Given the challenge of identifying the underlying cause of infectious disease across a diverse urban population, we sought to assess metagenomics methods that may provide more insight than standard single-pathogen-directed clinical tools. The aim of this study was to determine the etiologies of febrile illness in hospital settings in Bamako, Mali.

Methods

After obtaining informed consent/assent, clinical and demographic data were collected, and blood samples were obtained for testing by rapid diagnostic tests, RT-PCR, and ELISA for common and emerging infections involving viruses (HIV, Zika, Lassa, yellow fever, Ebola, SARS-CoV-2 using an NP swab, chikungunya, dengue, rift valley fever, west Nile, Crimean-Congo hemorrhagic fever, measles, and Marburg), bacteria (Leptospira spp., and Salmonella Typhi), and parasites (Plasmodium). Unbiased metagenomic sequencing for viruses was performed using Virome Capture Sequencing (VirCapSeq) with bioinformatics pipelines developed by Columbia University. Statistical analyses were done using R-studio/Prism GraphPad.

Results

Of 108 patients enrolled, 52% were male and 56% were <15 years old. After clinical evaluation and laboratory testing, measles (44%) was the most common diagnosis, primarily in children, followed by malaria (12%), typhoid (12%), and COVID-19 (8%). The etiology remained unknown for seven participants. No participants tested positive for viral hemorrhagic fever. Among 101 participants with VirCapSeq results, 36 results agreed with the clinical diagnosis. In 8/36 (22%), VirCapSeq was the only positive lab result, as the standard laboratory result was negative or not done.

Conclusions

Combining metagenomic sequencing with standard laboratory testing can synergistically enhance the identification of the etiologies of febrile illness. Additional bacterial diagnostic methodologies, such as blood culture, may further increase the diagnostic yield and determine antimicrobial resistance patterns.

2785

Changes in the health financing mechanisms deployed before and during the COVID-19 pandemic in resource-limited settings:a systematic review

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Keywords

Health financing mechanism, Changes, COVID-19 pandemic, Social health insurance, out-of-pocket payments, low resource settings

Introduction

Health financing mechanisms are the means of mobilizing resources for financing healthcare. Our team performed a systematic review to clarify changes in the health financing mechanisms deployed before and during the COVID-19 pandemic in resource-limited settings.

Methods

A systematic review was conducted between June 30, 2023, and July 31, 2023, of the following databases: EconLit, EMBASE, Global Health, MEDLINE, PubMed, Scopus, Social Science and Web of Science from 1976 to 31 July 2023. Studies which described the health financing mechanisms deployed before and during the pandemic for countries were included.

Results

Of 178 potential studies,17 met the eligibility criteria.The studies were found for India (n= 6), Nigeria (n = 6), Indonesia (n = 3), Togo(n=1) and Ghana(n=1). Social health insurance was deployed as a health financing mechanism before and during the pandemic in India, Nigeria, Indonesia, Togo, and Ghana. Out-of-pocket payments were deployed as a health financing mechanism before and during the pandemic in India, Nigeria, Indonesia, Togo, and Ghana. On changes to health financing mechanisms during the COVID-19 pandemic (In India, government declared projected earnings of USD3. 9million from sale of natural minerals and government properties to fund COVID-19 costs; In Nigeria, USD70 million was mobilized through the ''CACOVID'' private sector initiative to majorly escalate the country's COVID-19 testing capacity; In Indonesia, government redirected fifty percent of its Family and Health Division budget to COVID-19 costs; In Togo, a new cash transfer mechanism ''NOVISSI'' was introduced to cushion income loss among highly vulnerable citizens and In Ghana, ''LEAP'' cash transfer mechanism was implemented among vulnerable households).

Conclusions

Social health insurance and out-of-pocket payments remained the health financing mechanisms before and during COVID-19 pandemic in resource-limited settings. Innovative changes were also adopted during the pandemic.Underscoring the implications of these innovative changes to resilient health financing mechanisms is imperative for Africa.

2802

Sequencing of rabies virus from multiple host species throughout Zambia in 2023 shows circulation of strains associated with domestic dogs in dogs, wild canids and several other species

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Keywords

rabies sylvatic domestic dogs molecular epidemiology

Introduction

During the first half of the year 2023 23 rabies cases from across Zambia (20 domestic dogs, 2 cattle and a jackal) were confirmed by conventional microscopy and real-time PCR LN34 at CVRI and sequenced using nanopore sequencing technology. It is critically important in the case of rabies investigations involving multiple species and wildlife to carry out molecular epidemiology.

Methods

Total RNA was extracted from brain tissue, and one-step RT-PCR was performed using primers that broadly amplify the complete nucleoprotein and glycoprotein genes across diverse rabies virus variants. The amplicons were sequenced using an Oxford Nanopore MinION MK1b sequencer. Aligned nucleoprotein genes were used to conduct the phylogenetic analysis

Results

Phylogenetic analysis revealed that all 2023 Zambia rabies

virus sequences were consistent with cosmopolitan canine lineage of rabies and clustered within the African 1b clade. The phylogenetic analysis identified four rabies virus clusters. The major cluster was established across the central part of the country; the remaining three clades were closely related to rabies previously detected in neighboring countries of the Democratic Republic of the Congo and Tanzania; spillover between wildlife (jackals) and dogs was also observed..

Conclusions

In light of the data obtained, the goal of eliminating all human deaths due to rabies by 2030 is achievable by vaccination of domestic dogs if carried out in a systematic manner and after rabies sequencing capacity was implemented at CVRI, it is no longer necessary to refer samples internationally to achieve urgent, actionable molecular epidemiology

2820

Elaborating efficient communication strategies to face a pandemic: feedback from Covid-19 outbreak in Algeria, 2021

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Keywords

Covid-19, communication strategies, sensitization, Algeria

Introduction

Management of health crises constitutes a real challenge to authorities, in particular when they are of international concern. Indeed, in addition to the outbreak spread management, the authorities must elaborate on communication strategies that aims to inform the population about the involved risks and how to deal with them. These strategies must raise the populations' awareness without inducing fear and hence negative consequences. In this regard, we analyse the feedback on the used communication strategies in Algeria during the Covid-19 outbreak, to identify the most impactful ones and characterise the population sensitivities.

Methods

Computer Assisted Personal Interviews (CAPI) were conducted among 1500 households to collect the data, from May to June 2021. A selected series of videos and posters concerning Covid-19 information were showed to the interviewees. The obtained data were then analysed using a method inspired by that of Elimination and Choice Expressing REality (ELECTRE) is used to select the most impactful messages. Moreover, statistical models are used to identify the corresponding message to each target population.

Results

Algerians are mostly more sensitive to video messages than poster ones. Furthermore, the videos containing real images and celebrities appear among the most impacting videos, especially for youth. In the posters' messages, those having schemes are more impactful than those containing a lot of writing.

Conclusions

To make the messages more impactful the government must focus on messages that contain real images, or famous people having good credibility, especially to target youth and urban people. A special attention must however be paid to the real images in order to find the right balance between awareness and offensive messages. Furthermore, the design of posters must focus mostly on schemes than writing.

Track 2: Fostering African-led Innovation: Advancing Local Production in Vaccines, Diagnostics and Therapeutics

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Pre-Pandemic Cross-Reactive Immunity against SARS-CoV-2 among Congolese individuals in rural and urban areas

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Keywords

SARS-CoV-2, IgG, cross-reactive, Immunity

Introduction

For more than three years after the emergence of COVID-19 (Coronavirus Disease-2019), the world has faced the most challenging health crisis of our time. But the significant regional differences in term of morbidity and mortality was observed. Studies identifying the host factors, including pre-existing immunity that lead to patient's death and disease severity are crucial. Hence the purpose of the present study was to investigate circulating cross-reactive antibodies against SARS-CoV-2 in Congolese individuals living in rural (Bomassa) and urban (Brazzaville) areas.

Methods

A total of 151 specimens (sera) from bio-bank, collected before COVID-19 pandemic in urban and rural areas were used. 69 of the samples were collected in urban area in 2014 and 82in rural area since 2019. The presence of IgG antibodies against five major antigen of SARS-COV-2 (Anti-N; Anti-S2; Anti-S1; Anti-NTD; Anti-RBD) in these pre-pandemic samples were determined by ELISA methods with an innovative multiplex immunoassay from INNOBIOCHIPS Company (CoViDiag® assay). Data analyses were done with graphed prism5.

Results

Among 151 pre-pandemic assayed samples; 53 (35.1%) recognized the mentioned five SARS-CoV-2 antigens. In urban area, anti-S2 IgG seroprevalence was higher 4/69 (5.8%) compared to the other four antigens tested (anti-NTD IgG = 2/69 (2.9%); anti-S1= 1/69 (1.4%); anti-N = 1/69 (1.4%); anti-RBD = 0/69 (0%). In agreement, samples proceeding from urban area showed similar results. IgG antibody seroprevalence was significantly higher with S2 antigen compared to other antigens (IgG anti-S2 27/82 (32.9%); anti-N 22/82(26.8%); anti-S1 8/82(9.7%); anti-NTD 8/82(9.7%); anti-RBD 2/82 (2.4%). This finding may contribute to the higher seroprevalence of SARS-CoV-2 in many African countries.

Conclusions

According to this study, Congolese individuals have a high prevalence of cross-reactive IgG antibodies against SARS-CoV-2 antigens, which can explain the low mortality rate for SARS-CoV-2 infection mates in the country.

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Diagnostics and surveillance for priority epidemic-prone diseases in Africa: An assessment of testing capacity and laboratory strengthening needs.

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Keywords

Diagnostics, Surveillance, Epidemic potentials, Priority epidemic-prone diseases

Introduction

Introduction: Recent increases in disease outbreaks including COVID-19, Ebola and mpox among others have been reported in the African continent. IHR (2005) identifies disease mapping and prioritization for public health emergency preparedness and response. The Africa CDC and the European CDC have identified priority epidemic-prone diseases for effective emergency preparedness and response. This study evaluates the testing capacity and technologies used for diagnosing priority diseases among 17 sub-Saharan African countries.

Methods

Methods: We conducted an online self-reported survey for national Laboratory Directors in Africa between December

1, 2022, and January 30, 2023, using an online qualitative survey. The capacity to diagnose the priority epidemic-prone diseases on a five-point scale was ranked from 1 – 5, with 5 being the highest. Multiplexed diagnostics and priority disease surveillance technologies were considered.

Results

Results: Responses were received from across national laboratories from 17 member states representing all five major regions of Africa. Seven diseases were frequently tested: COVID-19, Poliovirus, Measles, Mpox, Cholera, Meningitis, and Rabies, Diagnostic capacity which was ranked as intermediate for a further eight diseases and low for the remaining five diseases, specifically Rift Valley Fever, Crimean Congo haemorrhagic fever, plague, dengue fever, and Zika virus disease. Most responding countries reported surveillance programs for poliovirus (91%), measles (85%), COVID-19 (80%), while few countries reported surveillance for Lassa fever (25%), Rift Valley Fever (27%) and Crimean-Congo haemorrhagic fever (30%). Six (35%) of countries responding to the survey conducted limited multiplex testing. The most common multiplex combinations were SARS-CoV2/Influenza and SARS-CoV2/influenza/RSV.

Conclusions

Conclusions and recommendations: Diagnostic capacity and surveillance activities are more advanced for only a limited number of diseases such as polio, measles, cholera, and Covid-19. Investment in other priority diseases is crucial for epidemic preparedness and early response to high-risk outbreaks. Assessments are needed for key interventions, including testing integration and use of multiplex technologies.

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Expression and purification of Crimean Congo Haemorrhagic Fever antigens for developing serodiagnosis and vaccines.

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Keywords

zoonosis, virus, diagnosis, vaccine, antigens

Introduction

Crimean-Congo hemorrhagic fever virus (CCHFV) causes a zoonotic disease, Crimean–Congo hemorrhagic fever (CCHF) endemic in many regions including Africa, Asia, the Middle East, and South-eastern Europe. However, the prevalence of CCHF is not monitored in most of the endemic countries due to limited availability of diagnostic assays.

Methods

In this study, we designed expression vectors and established a protocol to purify the recombinant CCHFV glycoproteins (Gp) and nucleoprotein (NP). We designed an antigen bait to isolate human monoclonal antibodies and investigated the utility of these proteins for serodiagnosis in an enzyme-linked immunosorbent assay (ELISA) to detect CCHFV-specific antibodies. The CCHFV genes from the south African isolate SPU187/90 were codon optimized and cloned into pCDNA3.1+ and human embryonic kidney cells (293F) were transfected with the plasmid. The expressed proteins were purified from the supernatant using nickel resins and concentrated using centrifugal filters.

Results

The antigens purified were used to develop an in house CCHFV ELISA to detect IgG from CCHF survivors and we efficiently detected CCHFV-specific IgG in human samples. We compared our data with a commercially available CCHFV immunofluorescence kit and our ELISA showed similar results.

Conclusions

The results obtained demonstrate that CCHFV antigens can be produced to a reasonable yield from 293 F and these antigens can be used as reagents for serodiagnosis development.

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Harnessing Artificial Intelligence for African-led Innovation in Medical Diagnostics: The Case of NeuralSight a technology by Neural Labs Africa

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Keywords

Artificial Intelligence
AI-powered diagnostics
NeuralSight
Machine Learning

Introduction

Africa faces substantial public health challenges, particularly in the realm of medical diagnostics necessitating innovative diagnostic tools for timely intervention .Traditional diagnostic methods often lack the speed, scalability, and accuracy needed to combat diseases such as tuberculosis, pneumonia, and various cancers. Emerging from this challenge, Neural Labs

Africa introduces a novel MedTech solution, showcasing the untapped promise of artificial intelligence (AI) in the realm of diagnostic healthcare.

Our groundbreaking tool, NeuralSight leverages cutting-edge AI technology to screens medical images in real-time, identifying over 20 pathologies associated with lung cancer, pneumonia, tuberculosis, as well as prostate and breast cancer. NeuralSight demonstrates the transformative power of AI, enabling rapid, accurate, and scalable diagnostics to improve healthcare access and outcomes across Africa.

Study Objectives: Evaluate the accuracy and effectiveness of revolutionary approaches in diagnostics; assessing its scalability in diverse healthcare settings across Africa; investigate its potential to reduce diagnostic delays and improve patient outcomes.

Methods

Study Design: We conducted a comparative analysis i.e. accessing the technology's accuracy with field trials working with pre-selected hospitals.

Study Setting: Clinical trials in Kenya and Senegal in collaboration with the UNICEF Innovation Fund.

Study Population: Radiologists, hospitals, and patients requiring medical image diagnostics.

Results

Preliminary outcomes from our ongoing clinical trials in collaboration with the UNICEF Innovation Fund highlight NeuralSight's potential in drastically curtailing diagnostic lead times and offering actionable insights for optimal patient interventions.

Conclusions

The adoption of AI technologies like NeuralSight can revolutionize medical diagnostics and serve as a foundation for African-led innovation in healthcare. This includes the development and local production of advanced diagnostics, therapeutics, and vaccines. Such pioneering endeavors are pivotal in sculpting a resilient public health infrastructure that not only bolsters Africa's standing in the scientific and healthcare spectrum but also integrates it prominently in the global health architecture.

725

An investigation of novel peptide-functionalized gold nanoparticles on colon cancer cells for diagnostic and therapeutic intervention, 2021-present.

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Keywords

Nanotechnology, Cancer, Diagnosis, Therapeutics, Gold nanoparticles

Introduction

Colon cancer is a common and deadly form of cancer, and chemotherapy has limitations of targeting cancer cells specifically hence cancer-related fatalities are on the rise despite significant advances in theragnostic. Furthermore, present cancer diagnostic methods are expensive and produce detection at a late stage, which has prompted worldwide interest in discovering sensitive and specific cheap cancer diagnostic tools. Cancer has a great impact on community health systems and economic sustainability since the national government bears the financial burden of expensive cancer diagnosis and treatment to all citizens. The creation of nanoscale targeting delivery has recently caught the interest of researchers. Herein, the development of functionalized gold nanoparticles as cellular probes and delivery agents to cell lines and primary cells is described, with the higher aim to develop a specific diagnostic prototype.

Methods

Gold nanoparticles (AuNPs) were synthesized and stabilized through chemical conjugation. Then characterized using UV-Vis spectroscopy, transmission electron microscopy (TEM), dynamic light scattering (DLS), Fourier transform infrared (FTIR) spectroscopy, and electrophoresis mobility assay. The stability of bioconjugates in physiological solutions (PBS, NaCl, and cell culture media), and their cytotoxicity were tested on colon carcinoma (HT-29 and Caco-2 cells) by employing the 4, 5-dimethylthiazol-2,5-diphenyltetrazolium bromide (MTT) and neutral red uptake (NRU) assay. Furthermore, genetic effects through real-time polymerase chain reaction (RT-PCR), localization and uptake (HRTEM), and peptide specificity were also determined.

Results

Different peptide-AuNPs were found to have preferential toxicity at higher concentrations as revealed by cell viability assays, however, all AuNPs presented immaculate stability for over 3 months after synthesis. The final obtained peptide-AuNP conjugates showed good biocompatibility in the presence of high ionic solutions and biological media and good cellular uptake. The effect on apoptosis and cell cycle was determined through RT-PCR.

Conclusions

This study's success demonstrates great potential for developing a targeted drug delivery agent and diagnostics tool.

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Adaptation of local rabies virus isolates to cell lines to develop vaccine strain in Ethiopia

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Keywords

Adaptation; Cell culture vaccine; Local virus isolates; Pathogenicity

Introduction

Rabies is a zoonotic viral disease that causes acute encephalitis in both humans and animals. The disease is particularly severe in developing countries where modern cell culture-derived anti-rabies vaccines are not readily available or affordable for the majority of the population. The nervous tissue-derived vaccines currently available are of questionable immunogenicity and may lead to neurological complications.

Methods

Street rabies viruses were isolated from the brains of rabid dogs and human saliva, and were adapted to Swiss albino mice brain and cell lines (BHK-21 and Vero) through several blind passages to increase viral titer. The viral titers were monitored by titration at every five consecutive passages, both in vivo and in vitro. For the pathogenicity study, mice were inoculated intramuscularly with 250MICLD50/0.1 ml of each adapted virus isolate and observed for 45 days.

Results

By titration, a minimum of 10* 6.5 TCID50/ml (in vitro) and 10* 4.5 MICLD50/0.03 ml (in vivo) virus titer were obtained. According to the pathogenicity study, only two virus isolates, human origin sululta (HOS) and dog origin (DO), caused 12.5% death, indicating the presence of virulence via intramuscular route of inoculation.

Conclusions

The increase in viral titer was significant and was observed through high viral titer via in vitro virus propagation. Death due to intramuscular inoculation may indicate the phylogroup origin of the viruses, showing a decline in virulence due to adaptation. The adaptation of viruses to mice brain and cell lines to increase virus infectivity titer significantly affects viral virulence via intramuscular inoculation. Further studies are required to investigate the genetic relationship with fixed rabies virus strains using molecular techniques, and a vaccinal strain with local challenge virus should be used from locally isolated viruses.

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From Rabies to COVID-19: CSIR's Multifaceted Approach to Monoclonal Antibody Development

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Keywords

Monoclonal Antibodies, Rabies PEP, COVID-19 mAbs, Passive Immunisation, Broadly Neutralising antibodies

Introduction

The Council for Scientific and Industrial Research (CSIR) has been actively involved in the development of monoclonal antibodies (mAbs) for over a decade, focusing on their public health implications. Utilising a proprietary cost-effective production platform, we have developed a diverse portfolio of antibodies targeting infectious diseases like Rabies, HIV/AIDS and COVID-19. We will update delegates on our plans for establishing a small-scale open-access CDMO-like production facility for investigational clinical trial material, and highlight the role of supportive regulations for its impact in translating these prototypes to the clinic.

Methods

Our methods involve usind biopharming for upstream production, chromatography techniques for purification, specialised engineering techniques for post-translational modifications, and analytical characterisation and biophysics to elucidate quality attributes. We collaborated with institutions like the World Health Organisation (WHO) Collaborating Centres for Rabies and the National Institute of Communicable Diseases (NICD) for in vitro testing and characterisation.

Results

Our results have been promising across multiple fronts. The Rabivir cocktail for Rabies Post-Exposure Prophylaxis (PEP)

demonstrated superior potency in animal models compared to the gold standard HRIG. Our CAP256 broadly neutralising antibodies for HIV/AIDS have shown significant promise in both pre-exposure prophylaxis (PrEP) and post-exposure treatment. In response to the COVID-19 pandemic, we rapidly developed five mAbs, three of which have shown potency in neutralising SARS-CoV-2 infection.

Conclusions

In conclusion, CSIR's work in the field of mAbs not only contributes to scientific understanding but also holds significant promise for public health, particularly in developing and cost-sensitive markets. Our research is a testament to the potential of African-led scientific innovation to drive meaningful change in public health, both in Africa and globally. We continue to seek partnerships for further testing and remain committed to advancing public health objectives through cost-effective mAb production technologies.

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Evaluating a fit-for-purpose African Vaccine Manufacturing Footprint

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Keywords

Vaccine Manufacturing, Pandemic Preparedness, Market Health, Commercial Viability

Introduction

Lack of timely access to Covid-19 vaccines for Africa triggered international awareness to the lack of vaccine production on the continent, and prompted investments to address the glaring gap. Whilst the burst of attention is cause for optimism in scaling-up African vaccine manufacturing, it is imperative for the global health community to establish a well-defined target footprint for African vaccine manufacturing (AVM). Our analysis outlines a more detailed view on what this target could be than has been provided elsewhere.

Methods

Through desktop research of publicly available information, market analysis, and expert consultations, we conducted a theoretical analysis that establishes a strategic alignment between global health security and pandemic preparedness (PPR), while ensuring sustainability of global antigen markets and potential of commercial viability for manufacturers in international markets.

Results

Our analysis indicates that a fit-for-purpose AVM footprint would include approximately 170 million doses of antigen-specific end-to-end Drug Substance (DS) capacity across various platforms and roughly 460 million doses of antigen-agnostic Drug Product (DP) capacity. This total AVM footprint of 630 million doses by 2030 represents ~40% of projected African Vx demand for 2030, and therefore corresponds closely with the plans by PAVM to ensure that 60% of all vaccines used on the continent are African-made by 2040.

This balanced target for vaccine manufacturing would encompass a diverse range of DS production capacities across eight existing and novel antigens. The additional DP capacity would be versatile and could, theoretically, be increased fourfold in emergency situations like pandemics, thereby allowing this footprint to meet the WHO PPR goal of having capacity to produce 2 doses per person for 70% of the population of the African continent.

Conclusions

This fit-for-purpose AVM footprint can align initiatives of ecosystem stakeholders behind achieving a beneficial level of PPR, strengthening global antigen market health, and supporting commercial viability for manufacturers.

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Development of Novel Protective Polyvalent Irradiated Pseudomonas aeruginosa Vaccine for Immuno-Compromised Patients

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Keywords

P. aeruginosa, vaccine, immuno-compromised, irradiation, protective efficacy, challenge test.

Introduction

Background: Pseudomonas aeruginosa is an opportunistic

pathogen affecting immuno-compromised patients; however, no effective vaccine is currently available in the market.

Aim: Here, we aimed to develop novel polyvalent irradiated P. aeruginosa vaccine using cobalt 60 that inhibited pathogen viability but retained antigenic expression functionally.

Methods

Methods: Mice were vaccinated by the developed vaccine by intranasal, intramuscular and subcutaneous route of administration followed by challenge test.

Results

Results: The protective efficacy of the novel vaccine reached up to 95%. This significant protection was mainly associated with measurable antiserum opsonic killing activity.

Conclusions

Conclusion: In conclusion, the novel vaccine provides a promising strategy of both prophylactic and therapeutic approaches for immunocompromised patients against MDR P. aeruginosa.

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MADE IN GHANA AGAROSE FOR GEL ELECTROPHORESIS OF DNA, 2022

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Keywords

Molecular, Agarose, Gracilaria cervicornis, Hydropuntia dentate

Introduction

Although there is a high demand for agarose in Molecular research of infectious diseases, it is not produced locally to meet this demand. It is very expensive and also not readily available in the Ghanaian/African markets. Importing of agarose from other countries for research comes with a high cost and delay in shipping of the products. Therefore potential of local seaweeds in agarose production as an alternative to imported agarose and their abilities in gel electrophoresis for the separation of DNA fragments was explored.

Methods

Seaweeds; Gracilaria cervicornis, Hydropuntia dentata, Ulva fasciata, and Caulerpa taxifolia growing along the coasts of Kpone and Labadi in Ghana were collected for this work. Seaweeds were first bleached with 10% H2O2 and treated with 5% NaOH prior to agarose extraction. Three different methods such as polyethylene glycol (PEG), DEAE Cellulose, and dimethyl sulfoxide (DMSO) were used for the extraction of the agarose from agar produced from the seaweeds.

Results

The results indicate that the red algae; Gracilaria cervicornis and Hydropuntia dentata were found to contain agar from which agarose was extracted while the green algae; Ulva fasciata, and Caulerpa taxifolia do not produce agar. The melting temperatures for agarose produced from Gracilaria and Hydropuntia ranged from 50 0C - 80 0C and 40 - 75 0C respectively while their gelling temperatures ranged from 41 0C – 53 0C and 31 0C – 46 0C. Agarose yield from Gracilaria cervicornis for the three methods (DMSO, PEG, and DEAE) ranged from 4%, 7.2%, and 10.1 % respectively while the agarose yield from Hydropuntia dentata for the three methods (DMSO, PEG, and DEAE) ranged from 3.2%, 6%, and 8.2% respectively

Conclusions

DNA electrophoresis proved that the local agarose prepared from both Gracilaria cervicornis and Hydropuntia dentata had an electrophoretic property and could be further refined and used for molecular research in Ghana/Africa.

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Back to our roots? Tracing the evolution of Pharmaceutical Manufacturing in Africa

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Keywords

African Traditional Medicine, Pharmaceutical manufacturing

Introduction

Back to our roots? Tracing the evolution of Pharmaceutical Manufacturing in Africa

African Traditional Medicine is one of the oldest forms of healthcare systems that has stood the test of time. The advent of COVID-19 and other epidemics such as Ebola and Marburg call for urgency for Africa to meet its increasing need and demand for pharmaceutical products and tackle persistent lack of access to essential medicines.

Methods

The study was conducted in 2022 using a case study design focusing on a local indigenous pharmaceutical manufacturer start-up in Uganda. Qualitative methods were used. Reflexivity and positionality were applied to improve the sensitivity of the researchers to the political and social context of the topic so that the researchers adopt an introspective attitude to examine her own beliefs and assumptions to ensure, that these do not influence the research.

Results

In pre-colonial African society, health problems were resolved using African Traditional Medicine. However, the coming of Europeans marked a turning point of this age-long tradition and culture. Colonial states used both civil and criminal laws to challenge and marginalize most African therapeutics. Medical pluralism became the norm even when colonial services received the lion's share of resources. In post-independence, concerted efforts were and are being made to recognize traditional medicine as an important aspect in healthcare system. Recently there has been a resurgence in use of traditional therapeutics coupled with calls for Africa to develop capacities in pharmaceutical manufacturing and integration of traditional medicines to improve access to medicines.

Conclusions

Africa needs to transform its traditional and complementary medicines into a frontier for pharmaceutical innovation and production to meet its ever-growing needs for sustainable access to medicines. This will be achieved through targeted investments across the pharmaceutical value chain with emphasis on regional collaborations.

1285

Stakeholder Engagements to Understand the Feasibility and Acceptability of Integrating IMARA in the community in Zambia

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Keywords

HIV, Adolescents, Adolescent Girls, Prevention, Intervention

Introduction

Zambian adolescent girls and young women (AGYW) ages 16-24 are at exceptionally high risk of acquiring HIV and Sexually Transmitted Infections (STIs).The Informed, Motivated and Aware Adolescents and Adults (IMARA) intervention is designed to strengthen mother-daughter relationships and communication and has been shown to decrease STI incidence in the United States and improve mental health in South Africa. We conducted stakeholder engagements with policy makers, mothers in the community and adolescents to co-design research on the feasibility and acceptability of implementing IMARA in Zambia.

Methods

We solicited feedback on the proposed intervention from six (6) Ministry of Health (MOH) representatives and the adolescent health technical working group, attended by 35 members. We also discussed the proposed intervention and research design with two (2) groups of mothers from high-density, poorly resourced residential areas in Lusaka and seven (7) members of CIDRZ's adolescent advisory group. A research assistant wrote notes during the discussions and memos from debrief sessions. We conducted rapid analysis based on the memos by iteratively reading them to create a global understanding of the points raised.

Results

We found IMARA to be highly acceptable intervention that could build a healthy relationship between mothers and daughters. Stakeholders suggested MF include older close aunties, sisters, grandma, or cousins that AGYW can trust and confide in. Participants also recommended including other topics such as financial management, economic empowerment and menstrual hygiene management. For successful integration, participants encouraged working with churches, schools, and adolescent programs. Some participants urged the team to include father figures in the program.

Conclusions

We found that IMARA has the potential to be successfully integrated in the community and reduce HIV infections among AGYW in Zambia. We will use the lessons learned from these stakeholder engagements to integrate the suggestions into the curriculum and tailor as needed for the Zambian context.

1310

The domestication of the African Union model law on medical products regulation: Perceived benefits, enabling factors, and challenges

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Keywords

African Union, African Union Model Law on Medical Products Regulation, African Medicines Agency, African Medicines Regulatory Harmonization Initiative

Introduction

In 2016, the African Union (AU) Model Law on Medical Products Regulation was endorsed by AU Heads of State and Government. The aims of the legislation include harmonisation of regulatory systems, increasing collaboration across countries, and providing a conducive regulatory environment for medical product development and scale-up. A target was set to have at least 25 African countries domesticating the model law by 2020. However, this target has not yet been met. This research aimed to apply the Consolidated Framework for Implementation Research (CFIR) in analysing the rationale, perceived benefits, enabling factors, and challenges of AU Model Law domestication and implementation by AU Member States.

Methods

This study was a qualitative, cross-sectional, census survey of the national medicines regulatory authorities (NRAs) of Anglophone and Francophone AU Member States. The heads of NRAs and a senior competent person completed self-administered questionnaires.

Results

The perceived benefits of model law implementation include enabling the establishment of an NRA, improving NRA governance and decision-making autonomy, strengthening the institutional framework, having streamlined activities which attract support from donors, as well as enabling harmonization, reliance, and mutual recognition mechanisms. The factors enabling domestication and implementation are the presence of political will, leadership, and advocates, facilitators, or champions for the cause. Additionally, participation in regulatory harmonization initiatives and the desire to have legal provisions at the national level that allow for regional harmonization/international collaboration are enabling factors. The challenges encountered in the process of model law implementation are the lack of human and financial resources, competing priorities at the national level, overlapping roles of government institutions, and the process of amending/repealing laws being slow and lengthy.

Conclusions

The AU Model Law will result in a harmonized legal environment for medicines regulation in Africa and be an important enabler for the effective operation of the African Medicines Agency.

1450

Plasmodium falciparum hrp2 and hrp3 Genes Deletion Typing by Digital PCR to Monitor Malaria Rapid Diagnostic Test Efficacy in Benin

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Keywords

Rapid Diagnostic Tests, Plasmodium falciparum, pfhrp2/3 genes, malaria, Benin

Introduction

Histidine-rich protein 2 (hrp2) rapid diagnostic tests (RDTs) have been widely used for malaria diagnosis in Benin. The antibodies used in these kits specifically recognize the parasite hrp2 antigen. However, in the last decade, the accuracy of pfhrp2-based RDTs has been challenged by the emergence of Plasmodium falciparum strains harboring deletions of the Plasmodium falciparum histidine-rich protein 2 (pfhrp2) gene, resulting in false-negative results. The main objective of this study was to determine the prevalence of the pfhrp2/3 genes in Benin.

Methods

Deletions of pfhrp2/3 in blood samples (n=35) were investigated from November 2021 to February 2022 in 10 health

facilities throughout Benin. Samples with negative PfHRP2-based RDTs, but positive Giemsa-stained thick blood smears were evaluated for pfhrp2/3 deletions. The samples were screened by Plasmodium falciparum-specific varATS qPCR and the deletion of hrp2/3 was detected by droplet digital PCR (ddPCR). Only the sample that the parasitemia ≥ 0.33 parasites/µl was typing for hrp2/3 deletion.

Results

VarATS qPCR showed the absence of Plasmodium falciparum DNA in one (1/35) RDT-negative but microscopy-positive samples. Among 34 samples that were positive by varATS qPCR, 23.52 % (8/34) presented low density, and the remaining 26 were all successfully typed for hrp2/3 deletion. No deletions of hrp2/3 genes were detected in the sample.

Conclusions

No deletions of hrp2/3 were detected in the 26 samples. The result showed that the false negatives were not due to deletion of the pfhrp2 and pfhrp3 genes. Nevertheless, active surveillance for the emergence of PfHRP2 deletions is required.

1496

Regional Economic Communities and vaccine manufacturing in Africa, what is their role?

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Keywords

local vaccine manufacturing, regional integration

Introduction

The COVID-19 pandemic exposed the gross inequities in access to vaccines in Africa. Currently the continent produces less than 2% of its vaccine requirements and this has contributed to the struggles with access to vaccines. Vaccine manufacturing conversations began before the pandemic, but have recently become more prominent. The African Union (AU) and its affiliated regional organizations, have laid out a plan to ensure that the continent is able to manufacture 60% of its vaccine needs by the year 2040. To establish a sustainable vaccine manufacturing ecosystem in Africa, regional economic communities (RECs) have a critical role to play in establishing a market and sourcing financing for local vaccine manufacturing initiatives. Further to their role, is important to analyze the legal, policy and institutional frameworks that might either facilitate or hinder vaccine manufacturing within the different RECs.

Methods

The study set out to assess the role of RECs in building a sustainable vaccine manufacturing ecosystem in East, West and Southern Africa. Data were collected from primary and secondary data sources and analyzed using thematic content analysis.

Results

The three RECs had several laws, treaties, policies and institutions that speak to their role in advancing vaccine manufacturing in Africa. However, the biggest challenge in implementing most of these agreements and initiatives has been domestication, ratification and participation by member states. Additionally, RECs that actively encourage members to participate have made more progress in advancing vaccine manufacturing within their region.

Conclusions

In conclusion, the RECs biggest role in advancing vaccine manufacturing in Africa is to coordinate member states to participate in agreed initiatives including establishment of reliable markets and sustainable funding for local vaccine manufacturing. We therefore recommend that RECs partner up with other regional entities such as civil society and professional bodies to lobby for implementation of programs advancing vaccine manufacturing in Africa.

1622

Accelerating Molecular Diagnostics and Bioinformatics using Genomic Algebra

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Keywords

Molecular Diagnostics, Bioinformatics, Genomic Algebra, Mathematics, Group Theory, Linear Algebra

Introduction

Genome bioinformatics and Next Generation Sequencing (NGS) technologies are at the core of sequence-based molecular diagnostics. So far, the use of strings of characters (GATC) to describe and represent nucleic acid sequences, has

been instrumental to building the current understanding of genes and genomes. However, the lack of a "grammar" relating to these text symbols hampers a rigorous mathematical analysis of genetic information. Consequently, bioinformatics relies upon the use of sophisticated, time-consuming, and resource-intensive sequence alignment strategies.

Methods

To make nucleic acid sequences amenable to mathematical analysis, a recently discovered Genomic Algebra framework (Berthet et al., submitted) was used, to represent sequence data under the form of compact matrices of integers. By combining group theory and linear algebra, Genomic Algebra allows to virtually wrap nucleic acid sequences around the vertices of a cube. In this workflow, sequences in FASTA format can be encoded into lightweight (4x4) matrices referred to as TISA (Topologically Invariant Sequence Array) and TDM (TISA Deconvolution matrices).

Results

Convolution of genomic information into TISA matrices is advantageous for NGS since it reduces enormously the amount of data required to represent a genome, while TDM are preserving its informational and sequence features. TISA matrices can easily be used to represent genomic sequences on a hexagonal lattice, opening the possibility of performing innovative phylogenetic analyses and providing useful and compact visualization tools. Genomic detection of any sequence of interest (mutation, polymorphism, etc.) can be achieved by simple Euclidean division (modulo the cognate prime number) of a TDM matrix.

Conclusions

Genomic algebra provides an innovative and powerful mathematical toolbox that will boost progress in genomics and sequence-based molecular diagnostics. The associated intellectual property will be used to promote local manufacturing and broad dissemination of the technology on the African continent.

1656

MALARIA VACCINE AGAINST PLASMODIUM FALCIPARUM IN CLINICAL PHASE;CHALLENGES AND PERSPECTIVES

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Keywords

Malaria, Vaccine, Effacacity , Challenges 2023.

Introduction

Malaria remains a major public Health concern. In recent years, several factors have undermined progress towards eradicating the disease, while there is only one prequalified antimalarial vaccine to date, RTS,S with an efficacy rate of 36%. The World Health Organisation recommends the development of a vaccine with at least 75% efficacy by 2030. The aim of this study was to provide an update on the status of malaria vaccines candidates that have reached at least phase II against Plasmodium Falciparum, the most feared species, to identify challenges involved in developing these vaccines, and to discuss the outlook.

Methods

We conducted a systematic literature review on two platforms clinicaltrial.gov and ISRCTN registry to list vaccine trials, and an additional search on Pubmed, Embase, Google schoolar and scopus for results.

Results

Ten active vaccines candidates were identified : RTS,S, The R21, PfSPZ, The PfSPZ-CVac, The PfSPZ-GA2, The MSP3-CRM, The RH5, The RH5,1, The RH5.2 –VLP and The Pfs230 D1M.

Pre-erythrocytic vaccines were most advanced with RTS,S prequalified and R21 in phase III, with 77% vaccine efficacy reported in phaseII. However, the serious adverse events reported(convulsion, meningitis), suggest that further investigation and monitoring are required in subsequent phase. The RH5 targeting the blood phase reduces the rate of parasite multiplication by 33%.

Conclusions

The approach of a multivalent vaccine combining R21 and RH5 could improve efficacy. The 2030 target could be reach. The next challenge will be to make the vaccine available in developing countries that bear the greatest burden of malaria.

1666

Addressing supply challenges for reproductive and maternal health products in sub-Saharan Africa: Unveiling opportunities for improvement, 2023

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Keywords

Reproductive, Maternal, Health, Manufacturing, Access, Quality, Supply

Introduction

Improving reproductive and maternal health has been a significant focus for national health authorities and global health partners, particularly in low- and middle-income countries (LMICs). However, maternal mortality rates remain high, particularly in sub-Saharan Africa. A key challenge impeding the improvement of reproductive and maternal health (RMH) outcomes is uneven access to quality-assured health products.

Africa relies heavily on imports to meet its healthcare needs, with imports accounting for over 70% of the medical commodities used in the region. This overdependence on foreign manufacturers and the lack of diversification in the supply of medical products have weakened the pharmaceutical supply chain, posing a significant threat to health security in Africa.

USP conducted a landscape analysis in 2023 focused on assessing manufacturing capacity and corresponding demand for heat-stable carbetocin, magnesium sulfate, misoprostol, oxytocin, and tranexamic acid. The study aimed to identify gaps and challenges that hinder the production of quality-assured products and determine necessary interventions to ensure sustainable access to these essential products.

Methods

A qualitative and a quantitative assessment on the current manufacturing capacity and corresponding demand was done. A survey tool was developed and administered to manufacturers in Sub-Saharan Africa (SSA). Focus was on each country in SSA that has a major manufacturing base and that has the potential to export pharmaceutical products. The current demand assessment was done from major procurers and from the private sector.

Results

Findings revealed the technical interventions required to ensure sustainable manufacturing of quality reproductive and maternal health products within the region. There is need for an active, strategic, dynamic tracking to monitor the overall landscape and define mechanisms that adequately meet the market demand in sub-Saharan Africa.

Conclusions

USP identified gaps and challenges, providing valuable insights for improving access to quality-assured RMH products that are crucial in addressing supply chain challenges from RMH products.

1692

Developing a customized approach for strengthening uptake of Quality Laboratory Diagnostics in African resource limited settings: Lessons from Homa Bay County Laboratory External Quality Assurance Scheme.

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Keywords

Customized, Approach, Quality, Laboratory, Diagnostics, EQA

Introduction

Participation in an external quality assessment (EQA) program or Inter-laboratory comparison (ILC) as required by ISO 15189 standards provides a useful external supplement to the various internal quality controls procedures, which must be employed in the laboratory to maintain a high degree of reliability in the production of results. In this study, we developed ILC in 2020 as a customized approach to assess the testing phase of Laboratories.

Methods

Biannual surveys comprising of 3-5 Tuberculosis smear slides, Malaria blood slides, Serum sample for syphilis and Hepatitis, whole blood for CD4 and complete Blood Count (CBC) were prepared by the liaison committee using standard procedures and validated by an accredited laboratory then distributed to enrolled participants, tested and result submitted by email to the committee. Results are analyzed and feedback reports sent back with advice for corrective action on unsatisfactory performance.

Results

Six surveys have been conducted with participant enrollment increasing from 10 at pilot to 60 at survey six. Malaria parasite species identification performance increased from 30%(3/10) at survey one to 79%(37/47) in survey six. Parasite quantification remained poor at 21%(10/47). Errors of High false negative in TB microscopy were the highest at 14%(33/235). Serology has sustained a performance of 100% across the surveys; however, participation in CD4 and CBC has not been optimal due to inconsistent reagent supplies. Mentorship has been utilized to support unsatisfactory performance corrective actions across sites with quarterly performance review incorporating all the stakeholders.

Conclusions

ILC has proved to be an important tool in process improvement and its utilization by accredited laboratories during assessments have demonstrated a cost effective means of achieving quality while also reaching out to expanded participation. Effective implementation of this program can be used to assess staff competency, performance of equipment and reagents as part of post-market surveillance.

1714

Assessing Change Management Processes as a Component of Technology Transfer to a Local Vaccine Manufacturing Company in Cape Town South Africa.

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Keywords

Change Management, Technology Transfer, Vaccine, Manufacturing.

Introduction

The African Union (AU) New Public Health Order mandate's expansion of local production of vaccines. Technology transfers are a priority support area identified by the Partnerships for African Vaccine Manufacturing (PAVM) and manufacturers in Africa. An essential part of the vaccine technology transfers is the process of change management by the recipient vaccine manufacturing company. This study aimed to review the change management implemented in a local vaccine manufacturing company in Cape Town following a technology transfer from an international vaccine manufacturer.

Methods

Three main constructs were identified: process of change, readiness for change and climate of change. A quantitative pencil-and-paper survey was used to explore and describe employee (24) experience of the change management process within a single department of the local vaccine manufacturing company in Cape Town. The survey questionnaire was extracted from the literature and comprised three main constructs as previously mentioned

Results

Cronbach alpha coefficient confirmed the internal reliability (- = 0.94) of the questionnaire constructs. Employees across all ages reported average scores for all constructs (M ≥ 2.5 < 4), indicating a similar experience regardless of age. A medium-strong positive correlation ($p < 0.01$; $r = 0.49$) was observed between the process of change and climate of change. The mean values of each construct showed that the study sample rated process of change, readiness for change and climate of change/internal context as average (M ≥2.5<4).

Conclusions

Based on the research findings and also drawing from literature and personal experience, some recommendations were made to improve employee experience of change management. These recommendations mostly include building trust through good leadership and communication to ultimately build staff morale and retain loyal and highly skilled employees.

1728

Landscaping and development of supply security interventions and investment opportunities for diagnostic development, manufacturing, and distribution companies across Africa

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Keywords

diagnostics, local supply security, investments in Africa

Introduction

The COVID-19 pandemic highlighted accessibility and affordability issues in African diagnostic markets, underscored by lack of supply security and stable demand characterization. PATH undertook a project which identified investment opportunities for Africa-based companies that sought to increase access to locally supplied diagnostics.

Methods

PATH landscaped ~200 companies through secondary research to assess existing capacity of Africa-based companies and via a survey, narrowed down to ~80 companies located on the continent. Primary research was conducted with 10 companies across Senegal, Uganda, South Africa, Kenya, and Nigeria using a standardized due diligence framework which assessed areas like company structure, product range, operations, manufacturing, quality assurance, regulations, and finances. Consequently, PATH evaluated value proposition based on potential public health impact, market sustainability, and return on investment. These 10 comprehensive investment cases, including PATH-identified risks, were presented

to ~15 investors through written reports and virtual presentations.

Results

In Africa, diagnostic companies encounter challenges supplying quality products locally and regionally. Key barriers identified during due diligence include capital shortages, raw material instability, technical expertise gaps, fluctuating demand, and complex regulatory processes hindering expansion into new countries. To address these, PATH formulated and developed 10 company-specific $1-$50M business cases for potential investors. These investment cases outlined company strategy, investment recommendations including machinery acquisition, product expansion, WHO GMP certification studies, quality system improvements, and more, as well as PATH's assessment of potential impact. When these were presented, development finance institutions, impact investors, and donors were interested to hear about talented Africa-based companies and how PATH could provide technical assistance to de-risk a potential investment.

Conclusions

Aligning stakeholders to implement targeted interventions and expanding the pool of interested funders in diagnostics companies located across the African continent can catalyze expansion of business and operational capabilities ultimately improving equitable access to diagnostics and filling supply security gaps.

1737

Driving the research and development (R&D) agenda for Africa's high-ranked epidemic-prone diseases: Ebola and Cholera

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Keywords

Ebola; Cholera; epidemic-prone disease; Innovation; Research and development; funding

Introduction

Africa CDC recently ranked Ebola and Cholera as the highest epidemic threats, highlighting inadequate outbreak preparedness. Prioritizing preparedness, including developing innovative products to meet local needs is crucial. Leveraging our R&D expertise, we analyzed global R&D funding for both diseases contextualized with the product pipeline and Africa's needs. Our modelling forecasts product launches, informing research priorities and investment decisions.

Methods

Investment data (2007-2021) was collected from funders, intermediaries, and product developers via the G-FINDER survey. Pipeline candidates were identified from major data sources including clinical trial databases (2015–2023), and the Portfolio-to-Impact(P2I) tool predicted launches. All analysis was performed in Microsoft Excel.

Results

Ebola R&D funding peaked in 2015($595m) during an outbreak, subsequently dropping to $150m in 2021. Vaccine R&D dominated, with US NIH and BARDA contributing 57% of funding since 2014 and nearly all in 2021, without LMICs. Only one diagnostic meets WHO benchmarks and Sudan ebolavirus lacks licensed tools. Three multi-filoviral vaccines are in clinical development. R&D for two Sudan ebolavirus vaccines are US-based. A robust but immature vaccine pipeline suggests no new launch before 2040. Cholera R&D received $419m(2007-2021) and $27m in 2021. US NIH($338m) and Gates Foundation($68m) led funding. Infant-friendly vaccines and rapid diagnostics are needed. Two simplified, all-ages, low-cost inactivated vaccines are in Phase II development. The US hosts two preclinical antibodies. A new cholera vaccine and two outbreak-detection diagnostics are expected in three years.

Conclusions

Reliance on US government renders the landscape susceptible to high-income countries' priorities, jeopardizing African product applicability and access. Outbreaks have propelled vaccine-focused R&D, with demonstrable potential for cholera. No expected Ebola vaccines risks future epidemics, necessitating diversified tools including therapeutics and diagnostics. A diverse funder base with LMIC representation, and local innovation will enhance preparedness against these epidemic threats.

1830

Comparaison de l'efficacité de trois inactivants chimiques usuellement utilisés dans la production des vaccins viraux inactivés; Application sur le virus de la fièvre catarrhale ovine

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Keywords

Formaldéhyde, Binary Ethymine, Betapropopiolactone, Bluetongue et Vaccination

Introduction

je vaccins inactivé, bien qu'ils exigent des rappels fréquents pour une bonne immunité, ils sont les plus recommandés pour la sécurité. Dans la technologie des vaccins inactivés, la durée d'exposition de l'antigène à une certaine concentration des agents chimiques, sont des facteurs très importants pour obtenir un vaccin de qualité ayant conservé ses propriétés immunologiques tout en étant sécuritaire. Dans ce travail, l'efficacité de trois inactivants chimiques a été testée sur le virus de la fièvre catarrhale pour l'obtention d'un vaccin. Un criblage à été réalisé en variant plusieurs paramètres à la recherche des paramètres de référence pour l'obtention d'un bon produit.

Methods

Un antigène produit sur tapie monocouche des cellules de rein de hamster nouveau-né. Un dépistage est réalisé. Le Binary éthylènimine, le Formaldéhyde et la Bêta-propiolactone sont testés à des concentrations et à des températures différentes. L'effet inactivant du virus est suivi par titrage des prélèvements effectués à des intervalles de temps allant de 1h à 48h lors du cycle d'inactivation. Le titre infectieux est évalué par l'effet cytoplasique du virus sur le tapi cellulaire. Les titres infectieux nous ont permis d'établir les courbes d'inactivations. Trois des courbes d'inactivations choisies ont permis de produire trois lots de vaccins relativement à chacun des agents inactivants. Suite au contrôle qualités et à l'ajout de l'adjuvant, pour avoir des vaccins prêts à l'emploi. Les trois lots pour les essais sur trois groupes d'ovins.

Results

Suite aux 21 jours poste vaccinaux,Le groupe d'ovins ayant reçu le lot A, a montré une très bonne innocuité. Aucun animal n'a été malade. Les ovins sont séropositifs dès le 7ème jour de la vaccination.

Conclusions

Le Binary éthylènimine comme le formaldéhyde et la bêta propiolactone garantissent la production d'un vaccin totalement inactivé. Mais Le Binary éthylènimine fournit un vaccin sécuritaire tout en conservant très bien ses propriétés immunogènes.

1831

Accurate prediction of V. Cholerae specific serum antibodies using non-invasive saliva techniques in naturally infected individuals

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Keywords

Cholera, saliva, natural infection, rapid diagnotic test

Introduction

The importance of easily accessible, non-invasive samples such as saliva, to effectively monitor serum antibody levels is underscored by the cholera endemicity in Zambia. Traditionally, serum has been the most widely used biological sample for measuring immunoglobulin isotypes following exposure to natural infection and vaccination. However, in recent times, saliva has emerged to be the most promising proxy biological sample due to its numerous advantages.

This study presents compelling evidence showcasing the potential of measuring Vibrio cholerae antibody levels in saliva samples as a reliable indicator of corresponding serum levels. Our approach utilizes vibriocidal antibodies (IgM/IgG) as markers for accurate determination.

Methods

This was a cohort study in which all cholera patients presenting to cholera treatment centres in Eastern province during the 2022/2023 outbreak were enrolled. Paired serum and saliva samples obtained from a total of 63 cholera patients enrolled. The samples were collected simultaneously at the time of patient enrolment, allowing for a direct comparison of serum and saliva antibody levels. Vibriocidal antibody assay was used to determine cholera specific antibody levels. Correlations and scatter plots including geometric mean titre levels were used for expression of results.

Results

Of the 63 that were enrolled, 59 were included in the final analysis. Scatter plots of the 59 showed high levels of antibody titres in patients sampled 10-20 days after date of onset. The lowest saliva antibody titres were detected in patients who were sampled 40 days post-date of onset. We also observed a significant positive correlation between saliva and serum antibody response (P-value < 0.001).

Conclusions

Thus, the ability to rely on measurements of antibodies in saliva to accurately predict the level of antibodies present within blood would be very advantageous, cheaper and quicker for early diagnosis and reduction of severe cholera outcomes. Further studies should explore waning of vibriocidal antibodies in saliva.

1879

Invitro Studies On Safety And Efficacy Of Natural Therapeutic Products from innovators In Uganda

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Keywords

Invitro, Natural Therapeutics, Safety, Efficacy, Selective Index

Introduction

The COVID-19 pandemic highlighted the need for global pandemic preparedness. Various natural remedies were developed with the aim of providing a cure. Ugandan innovators came up with possible natural therapeutic products (from plants - leaves, tree bark, roots, and from insects). Testimonies from communities that had used the natural therapeutics indicated that they were possibly curative. However, there was no scientific data to prove their safety and efficacy. To address this, the Invitro Studies of Natural Therapeutics was started. Its main aim is to develop invitro safety and efficacy studies on natural therapeutic products.

Methods

To assess the safety of the natural products, bacterial and fungal sterility tests were performed on all 23 products received at Uganda Virus Research Institute. This was done by incubating them in appropriate media and later assessing the bacterial and fungal growth. Then, cytotoxicity testing was done using Vero E6 cells in cell viability assays. The proportion of viable cells was measured by luminescence to assess the 50% cell cytotoxicity (CC50). For efficacy of the products, the antiviral assay was done to assess visual Cyto-pathic effect and viral Toxglo. The effective inhibition of the Vero E6 cells (Effective concentration - EC50) was assessed. To determine the selectivity of the potential antiviral product, the selective index (a ratio of CC50/EC50) was obtained.

Results

For bacterial, fungal sterility and cytotoxicity, all 23 products were found to be sterile. 22/23 products were nontoxic to cells, and 1/23 was highly cytotoxic to cells. 9/23 products were assessed for antiviral efficacy and the selective indices were measured as 1.15, 1.9, 2.1, 2.9, 3.0, 3.4, 4.6, 5.0, and 9.3.

Conclusions

Products were generally found to be safe and Selective index of 2 and above showed good efficacy against SARSCOV2. 2/9 products have advanced to clinical trials and others are going for animal studies.

1893

Isolation of oral cholera vaccine specific peripheral blood mononuclear cells: Lessons learned in remote Zambia, a low to middle-income country in Africa.

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Keywords

PBMC, Cholera, Oral Cholera Vaccine, processing

Introduction

The use of PBMCs in vaccine research in LMICs has recently become an important component of both humoral and cellular immunity research. Although oral cholera vaccines (OCVs) are currently being deployed in rural parts of Zambia, there is a paucity of data on whether research samples collected in these settings remain viable. Thus, we hereby present the lessons learned after investigating the viable cell number, viability, and immune phenotype.

Methods

A total of 225 adults (≥18 years) were enrolled in the study and re-vaccinated with OCV at baseline (day 0) and on day 14. Whole blood (20mls) for PBMC isolation was collected before vaccination on day 0, and days 28, 60, and 90 after post-full vaccination. PBMC isolation was completed within

six to eight hours of collection using standardized protocols, stored (from 500 000 to 1.5× 106 cells/ml), and cryopreserved in liquid nitrogen until further analysis. ELISPOT was used to measure immune phenotype and function on thawed PBMCs.

Results

PBMC viability and viable cell number significantly reduced over time compared with samples that were processed and tested immediately. The total PBMC count and viability declined by more than 25% and 30% respectively in those samples stored for longer, while for the freshly isolated PBMCs, there was minimal to no decline in cell count and viability.

Conclusions

A sample delay of 6-8 hours at RT does not impact the viability and total viable cell numbers. When long-term delays exist (>280 d) total viable cell number and cell viability losses are increased in samples stored in liquid nitrogen. Immune phenotype and function were equally altered after 280 days of storage. However, impacts of storage are reduced in samples stored under the same conditions for <15 days and much reduced in those that are immediately processed and tested within 3 hours of collection.

1903

Effective reduction of unsuccessful Xpert MTB/RIF Ultra test results in Ethiopia through the implementation of improved preventive packages

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Keywords

Unsuccessful test, Xpert MTB/RIF Ultra, preventive package, turnaround time

Introduction

Background: Xpert MTB/RIF Ultra is a rapid molecular diagnostic test that can detect tuberculosis (TB) and rifampicin resistance. It is highly accurate and effective in diagnosing TB in Ethiopia. However, there were high rates of unsuccessful test results prior to the implementation of an improved unsuccessful test preventive package under the USAID Eliminate TB project.

Methods

Methods: A quasi-experimental study with a pre-post intervention design was conducted to determine the effect of improved unsuccessful test preventive package implementation in 252 GeneXpert health facilities in Ethiopia with baseline data collected in July 2022 and post-intervention evaluation data collected in July 2023. The package includes the installation of an inverter, provision of job aids, training supported by intensive mentorship, and timely performing Xpert checks. Data was analyzed by the SPSS statistical method.

Results

Results: The implementation of the improved unsuccessful test prevention package was effective in reducing the rates of unsuccessful Xpert MTB/RIF Ultra test results in Ethiopia. The rate of unsuccessful test results decreased from 12.1% in July 2022 to 5.9% in July 2023 after the implementation of the package, a 48.8% reduction. Out of the total unsuccessful test results, 'no result' was reduced from 5.2% to 2.3%, 'Errors' was reduced from 5.7% to 3.1%, and 'Invalid' was reduced from 1.2% to 0.5%. Moreover, a total of 28,242 cartridges were protected from wastage with a saving cost of 319,569 USD during the reporting period.

Conclusions

Conclusions: An improved unsuccessful test preventive package was effective in reducing the rates of unsuccessful Xpert MTB/RIF Ultra test results. The package decreased the turnaround time (TAT) for the test and was efficient in starting treatment by reducing repeated tests. These findings suggest that similar interventions could be implemented in other countries to improve unsuccessful TB testing rates and save resources.

1945

Strengthening Level of Public health Emergency preparedness and Response in Africa through the Medical countermeasures mapping and advancing local production of Vaccines, Diagnostics and Therapeutics.2023

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Keywords

Preparedness, Response, Medical countermeasures, Mapping

Introduction

Strengthening health systems needs to be an integral part of preparedness including building stronger systems that are adequately staffed, supplied and resourced.

Availability, accessibility and affordability of medical countermeasures are a major constraint to a timely response to epidemics and pandemics in Africa. This can have a significant impact on the level of preparedness and response to disease outbreaks in Africa and reduction in morbidity and mortality. Africa CDC is working with UNICEF to increase access to vaccines, therapeutics and diagnostics for priority pathogens to meet the increasing demands during outbreaks.

Methods

Using descriptive cross sectional study method, Africa CDC conducted mapping of MCM products for therapeutics, diagnostics and vaccines available for priority infectious disease pathogens through review of UNICEF product list of essential commodities under GAVI support and using an MCM mapping template. Identification of access issues was also done in terms of availability, affordability, acceptability, accessibility and quality. The range of appropriate supply and access interventions across the products was also explored.

Results

A total of 10 vaccine products were available for the 4 priority pathogens except CCHF and Ebola (Sudan). Three for Ebola (Zaire), 3 for cholera, 4 for Covid-19 and 5 for yellow fever. For the therapeutics, 2 antivirals were available for Ebola (Zaire), 3 antibiotic classes for cholera and 5 therapeutic classes for Covid-19 while none was available for CCHF and yellow fever. For the diagnostics, all the 5 priority diseases have available diagnostic testing kits ranging from PCR to RDT and ELISA.

Conclusions

Funding constraints, low product demand limited R&D capacity, manufacturing capacity, number of suppliers, weak regulatory systems and procurement mechanisms were some of the supply issues identified. However, R&D push, stockpiling, regulatory strengthening, pooled procurement and market shaping are identified potential interventions that can address the challenges.

2322

The time is now for the African Medicines Agency to deliver on its promise for a better future for patients in Africa and the world.

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Keywords

African medicines agency, AMATA, pandemic preparedness, regulatory harmonization

Introduction

The African Medicines Agency Treaty Alliance (AMATA) is a multi-stakeholder alliance set up to advocate for the ratification of the African Medicines Agency (AMA) and for meaningful engagement with patients, academics, industry and civil society, in all aspects of the Agency's implementation and development.

Methods

The AMA's rapid inception should signify a proactive response to the pressing need for a coordinated approach to medical regulation across African nations. Drawing from the lessons learned during the COVID-19 pandemic, AMATA is looking forward to the AMA to promptly adapted its functions to streamline the assessment, approval, and monitoring of medical products.Importantly, AMA serves as a hub for sharing best practices, harmonizing regulatory standards, and coordinating surveillance efforts, thus bolstering the collective ability of African countries to manage health crises. By cultivating a suitable environment, the AMA can facilitate both innovation and the assurance of medical product quality.

Results

Furthermore, the AMA's significance extends to the realm of post-pandemic recovery. A robust regulatory framework enables the swift introduction of essential medical supplies, including vaccines, treatments, and diagnostics. This expeditious response not only helps contain ongoing outbreaks but also expedites the restoration of healthcare services. The agency's efficiency in expediting regulatory approvals mitigates disruptions in medical supply chains and fosters a sense of trust, thereby revitalizing regional health systems and economies.

Conclusions

In conclusion, AMATA calls for the rapid operationalization of the African Medicines Agency as it signifies the region's proactive stance in pandemic preparedness and recovery. By emphasizing the pivotal role of regulatory system strengthening, the AMA signifies a paradigm shift in viewing regulatory frameworks as central to effective crisis management. As African nations navigate evolving global health challenges, the AMA stands as a symbol of enduring cooperation, harmonized

regulation, and swift responsiveness—key factors in shaping a safer and more resilient future.

2324

The in vitro effects of a synthetic compound, MAZ-51, and a natural compound, epigallocatechin gallate, on cellular inhibition in B16F10 melanoma cells

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Keywords

Anticancer, MAZ-51, EGCG, B16F10, cytotoxicity, melanoma

Introduction

In 2020, the International Agency for Cancer Research reported approximately 10-million cancer deaths worldwide. The South African population represented over 60,000 of these cancer deaths. Melanoma is the cancer of the skin melanocytes which has an aggressive malignancy and low survival rate. Current therapeutics for melanoma are limited in efficacy. Epigallocatechin gallate (EGCG) is a flavonoid found in green tea which interacts with cellular targets to inhibit tumour cell proliferation. 3-[[4-(dimethylamino)-1-naphthalenyl]methylene]-1,3-dihydro-2H-indol-2-one (MAZ-51) is a selective tyrosine kinase inhibitor that acts as an antagonist in ligand-induced vascular endothelial growth factor receptor-3 autophosphorylation.

Methods

The in vitro effects of MAZ-51 and EGCG on tumour cell survival was determined using mouse melanoma (B16F10), human keratinocyte (HaCaT) and murine macrophage (RAW 264.7) cell lines. Using the crystal violet assay, EGCG (50– 200 µM) and MAZ-51 (11 – 16 µM) were used to determine percentage cytotoxicity. Additionally, morphological alterations were determined at inhibitory concentrations to characterise cell death.

Results

The IC50 values for B16F10 cells were obtained at 48 hours, 107 µM for EGCG ($p<0.0001$) and 34 µM for MAZ-51 ($p<0.0001$), whereas for the non-cancerous cell lines, cell death was not observed. Morphological changes concurred with the cytotoxicity data showing decreased cell density and cell rounding indicative of apoptosis and necrosis in B16F10 cells.

Conclusions

This study demonstrates cell death in B16F10 cells upon MAZ-51 and EGCG treatment. Cytotoxicity in RAW 264.7 cells was less pronounced, with none in HaCaT cells, highlighting compound selectivity. Flow cytometry data suggest an alternate pathway drives B16F10 cell death, not involving caspase 3. This study falls under the sustainable development goal 3; good health and well-being, whereby exploring natural compounds such as EGCG as cancer therapeutics holds promise for sustainable treatment strategies, advancing human well-being. This research contributes to global health by promoting better outcomes and overall well-being.

2328

Regulatory pathways for the registration of nirmatrelvir/ritonavir in South Africa, lessons from a COVID-19 Test and Treat program from January 2021 to March 2023

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Keywords

COVID-19, Regulatory, nirmatrelvir/ritonavir, NEMLC, SAHPRA

Introduction

South Africa faced challenges in controlling the spread of COVID-19, with more than four million cases and more than 102 000 deaths. The increase in cases globally led to global efforts to develop and introduce therapeutics. Two entities, the National Essential Medicines List Committee (NEMLC) and the South Africa Health Products Regulator Authority (SAHPRA), play crucial roles in determining treatment use. NEMLC provides evidence-based recommendations for treatment guidelines, while SAHPRA regulates health products. This analysis focuses on the regulatory processes surrounding the introduction of COVID-19 oral antiviral nirmatrelvir/ritonavir and suggests improvements for future product introductions.

Methods

We describe and review the regulatory process of NEMLC and SAHPRA from January 2021 and March 2023. Two rapid reviews of nirmatrelvir/ritonavir for COVID-19 of March 2022

and March 2023 were conducted to provide insights into the NEMLC recommendation process.

Results

NEMLC, acting on behalf of the National Department of Health reviewed nirmatrelvir/ritonavir's use after its emergency authorization by the US FDA in December 2021. It recommended against its use in the public sector, due to lack of evidence in vaccinated patients and absence of nirmatrelvir/ritonavir registered products as co-packaged or separate oral solid dosage form in South Africa. SAHPRA registered nirmatrelvir/ritonavir for COVID-19 treatment in South Africa January 30, 2023. A subsequent review by NEMLC in March 2023 again did not recommend nirmatrelvir/ritonavir due to insufficient evidence of efficacy in vaccinated or previously infected individuals, as well as lack of local cost and availability information.

Conclusions

There is need to generate local evidence to support drug registration and investments should be made to support such initiatives in the context of COVID-19 and future health emergencies. This analysis underscores the need for an integrated approach involving all stakeholders to address concerns and improve regulatory mechanisms for future drug reviews.

2340

Systematic Review and Meta-analysis of Reference Interval for Ghanaian Populations.

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Keywords

Hematological, Biochemical, Analytes, Analyzers, Laboratories, Ghana

Introduction

Reference intervals (RIs) are crucial tools for analyzing laboratory test results and making medical diagnoses. Depending on one's age, gender, and ethnicity, these intervals can vary. However, due to the variability caused by different analyzers, establishing reference ranges for commonly measured biochemical and hematological analytes for Ghanaian populations has proven difficult. More study and attention are needed to guarantee appropriate patient diagnoses. Therefore, we conducted a survey and meta-analysis on the different RIs used by Ghanaian laboratories and the similarity and variation of RIs for numerous biochemical and hematological analytes.

Methods

We contacted 50 laboratories to seek consent to participate in the study. We gathered RIs through either hardcopy or softcopy data reporting sheets. The laboratories were required to provide specific details such as the analyte name, units of measurement, instrument names, lower and upper reference limits, and age and sex for 21 hematological analytes and 32 biochemical analytes. We then subjected the data to statistical analysis using R and GraphPad Prism 8.4 (GraphPad Software Corporation, US). Finally, the outcome measures, such as lower and upper reference limits, were evaluated for heterogeneity.

Results

Only 29 laboratories provided data for the study. We collated all data into a single spreadsheet with all analytes converted to a single unit before we ran the analysis. We observed significant variations for most analytes among various. For fasting Blood Glucose in Adult males, the mean lower RI and upper RI were 3.6 g/dL (SD 1.5) and 6.6 g/dL (1.9), respectively (figure shown below). However, AST somehow showed the slightest variations.

Conclusions

Significant gaps exist for RIs used by Ghanaian laboratories. This informs the need for harmonizing RIs for accurate diagnostic decisions. For the first time, we report a comprehensive study and meta-analysis of RIs for biochemical and hematological analytes used in Ghana.

2365

Utilizing DHIS2 to Enhance Health Infrastructure and Boost HPV Vaccination in Kenya by Identifying and Monitoring Unseized Opportunities—Insights leading to the Implementation of the S2VHPV Approach.

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Keywords

HPV Vaccination, Health Infrastructure, DHIS2, S2VHPV Approach, Implementation

Introduction

Cervical cancer is a significant global health concern. The World Health Organization (WHO) aims for its elimination by

2030 using the 90-70-90 strategy, targeting 90% HPV vaccination in girls by age 15. In Kenya, despite introducing a two-dose HPV vaccine, the uptake is low with notable regional disparities. Although school-based vaccination has been primary, it's costly. A shift towards facility-based strategies might be more sustainable and efficient. This study evaluated missed HPV vaccination opportunities in Kenya, utilizing the District Health Information System 2 (DHIS2) and assessed the potential of the Screen to Vaccinate (S2V HPV) approach to enhance vaccination rates.

Methods

We extracted outpatient data from DHIS2, focusing on girls aged 10-14 and analyzed their health facility visits. By contrasting these visits with actual HPV vaccinations given, we gauged the extent of missed vaccination opportunities, utilizing R software for analysis.

Results

Within a year, 1,251,817 girls sought essential services at health facilities, but only 879,431 received the HPV vaccine, missing 373,386 opportunities. With Kenya's HPV vaccinations being 75% school-based, missed opportunities rose to approximately 1,031,934. Pilot implementation of the S2V HPV method at select locations resulted in a 49% uptick in HPV vaccinations (IRR 1.474, P value < 0.005, 95%CI [1.324 – 1.641]). This evidence underscores the potential of the S2V strategy in Kenya to complement other measures, aligning with WHO's 2030 cervical cancer elimination goal.

Conclusions

Our findings advocate for the S2V approach in Kenya as a pathway to meet the IA 2030 objectives. Emphasizing the role of targeted vaccination campaigns and technology like DHIS2 in areas with limited resources, this study suggests a data-centric, targeted vaccination approach, encouraging the adoption of digital health tools to enhance health results.

2371

Capacity Building of National Regulatory Authority towards WHO Maturity Level 3 (Vaccine Producing) authorization oversight and regulation.

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Keywords

Regulatory Systems Strengthening (RSS); Emergency and Pandemic Response; World Health Organization (WHO) Maturity Level 3 (ML 3); WHO Global

Introduction

USAID MTaPS supported the Pharmacy and Poisons Board (PPB)—Kenya's national medicines regulatory authority—to undertake a competency mapping to identify skill and competency gaps, identify staffing and training PPB gaps required for medicines and vaccines regulations; and recruit and select new technical staff. This was in an effort strengthen PPB's regulatory capacity in support of ML3 status, local vaccine manufacturing and improved pandemic and emergency preparedness and response.

Methods

The WHO Competency Framework and Implementation tool was adapted into an interactive competency mapping questionnaire for the Kenyan context. The tool identifies skills and competencies across six of the eight regulatory functions outlined in the WHO Global Benchmarking Tool (GBT) [1]. Competency mapping workshops and webinars were held for PPB staff involved in the six respective functions. The questionnaires were self-administered with discussions held in plenary to validate the responses by various teams. Recommendations were then made based on summation of the performance scores with a focus on priority regulatory areas and skills development.

[1] Global Benchmarking Tools (who.int)

Results

The weakest role specific function was the laboratory analyst with a score of 66%, whereas the strongest role specific function was the Inspectorate with a score of 86%. In the practice core roles, pharmacovigilance and post-market surveillance was the weakest at 60% whereas the leadership function was found to be strongest. The meta roles were generally found to be fairly comparable across the regulatory functions reviewed.

Conclusions

Implementing recommendations of the mapping will help PPB to prepare and adopt capacity-building plans that will strengthen identified gaps. This will bring the regulator closer to attaining ML3 status. Kenya will be able to build self-sufficiency by being WHO GBT-authorized vaccine-producing country. In case of future pandemic response and emergencies quality vaccines will be more readily available on short notice leading to better outcomes.

2464

Opportunities for and Challenges facing Vaccine Manufacturing in Africa: A Focus on the East African Region

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Keywords

Opportunities, Challenges, Vaccine Manufacturing, East African Region

Introduction

The COVID-19 pandemic has exposed the vulnerabilities of countries regarding access to life-saving vaccines, highlighting the need to develop sustainable vaccine manufacturing, both for pandemic preparedness and long-term self-reliance. Although countries in East Africa have expressed a willingness to set up local vaccine manufacturing, the scope of potential challenges and opportunities is still being defined. This study focused on identifying challenges whilst considering the opportunities associated with the development of vaccine manufacturing capability in East Africa.

Methods

This was a cross-sectional descriptive survey conducted among various vaccine experts from within and outside the region. We conducted questionnaire-guided semi-structured interviews. The guide was structured to capture information on four key aspects of vaccine manufacturing notably: Setting up a vaccine manufacturing and the sustainability of such a facility: the regulatory framework and expertise required; the expertise and capabilities in R&D required; funding considerations, incentives in place and the role of other supporting bodies including governments. We categorized similar findings and established common themes.

Results

Out of a total of twenty-seven respondents, sixteen (59%) worked outside of Africa, while of the eleven working in Africa (41%), eight were from the East African region (73%). Nine (82%) of the respondents working within Africa considered the availability of funding as the most essential aspect on which sustainable regional vaccine manufacturing will hinge. Of those working outside of Africa, a majority (63%) considered political will and stability and the availability of trained expertise the most critical.

Conclusions

Setting up vaccine manufacturing in East Africa is feasible, with clear potential for this to become a key supply of vaccines both for routine immunization needs, and pandemic/epidemic preparedness. It is, however, important that countries in the region understand the potential challenges associated with establishing and sustaining vaccine manufacturing and take steps to address these barriers.

2484

Impact of Air-travel logistics on access and availability of vaccines.

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Keywords

Vaccines; Supply Chain; Air Travel; Kenya, COVID-19

Introduction

Access and availability of vaccines and related commodities is dependent on mode of transport, topography, and safety. In Kenya, vaccines are traditionally transported via roads on a quarterly basis from (1) Central Vaccine Stores (CVS) to (9) regional vaccines stores (RVS), to (303) sub-county vaccines stores and monthly to over 8,000 immunizing Health facilities (IHFs). Turnaround time from the CVS to IHFs averages at 14 days, contingent on the distribution model.

COVID-19 vaccines strained this system due to their short shelf-life. Collaboratively with the National Immunization Programme (NVIP), Clinton Health Access Initiative (CHAI) facilitated air travel, ensuring timely delivery, distribution, and reduced missed opportunities.

Methods

Integrated distribution plan was updated to utilize air-travel for effective and efficient movement of vaccines from the CVS to RVS and in some cases, delivered directly to mapped counties depending on need and availability of airstrips. In collaboration with NVIP and other key supporting stakeholders (UNICEF, WHO, and AMREF) regions in urgent need of

COVID-19 vaccines were identified and targeted.

Correct packaging was done to ensure the quality and efficacy of vaccines using conditioned ice packs. Real-time weighing and temperature-tracking devices were used to monitor potency of vaccines. Cold boxes were used for transporting vaccines to departure airports and from arrival airports to County/Sub-County Vaccine stores/IHFs.

Results

Vaccines travel time reduced from ~14 days to ~2 days on average, thereby increasing access and availability while minimizing missed opportunities and defaulters of COVID-19 vaccination. Data suggests that air-freight could be a cheaper alternative means of transport compared to road delivery. For example, outsourced road travel costs $19.33/km compared to $0.34/km via air freight.

Conclusions

Adaptation of airfreight can be utilized for vaccine distribution allowing economies of scale such as, cutting down on costs such as vehicle maintenance, human resource, security, and wastage

2485

DESIGNING AND MOLECULAR MODELLING OF A UNIVERSAL mRNA VACCINE FOR SARS-COV-2 INFECTION

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Keywords

SARS-CoV-2, mRNA vaccine, Bioinformatics, Variants, Lineages

Introduction

At this present stage of COVID-19 re-emergence, designing a vaccine effective for different variants of SARS-CoV-2 is a study worthy of consideration. This research work used bioinformatics tools to design an mRNA vaccine that captures all the circulating variants and lineages of the virus in its construct.

Methods

Sequences of these viruses were retrieved across the six continent and analyzed using different tools to screen for the preferable Cytotoxic T lymphocytes (CTL), Helper T lymphocyte (HTL) and B-Cell Epitopes. These epitopes were used to design the vaccine.

Results

In addition, several other co-translational residues were added to construct an mRNA vaccine of 285.29686 kDa in weight with an estimated pl was 9.2, which would not have any cross affinity with human genome and has been estimated to cover over 68% of the world population. It is relatively stable and with minimal deformability in its interaction with human viral antigen-presenting cells which includes TLR 3 and TLR 9.

Conclusions

The overall result revealed that the designed vaccine is capable of inducing cell-mediated immune responses by activating the actions of TH cells, Natural killer cells, and macrophages and also displayed an increased memory B cell and T cell activities within the first 5 days and remained constant for weeks.

2498

Harmonization of molecular diagnostic of yaws to support eradication effort in the World Health Organization roadmap 2021-2030 for skin Neglected Tropical Diseases

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Keywords

Yaws like lesion, Harmonization, diagnosis, BU-LABNET

Introduction

Skin Neglected Tropical Diseases (NTDs) are targeted for eradication, elimination and control in the WHO road map 2021-2030, and the integrated approach is the backbone of these goals. Considering the success of the BU-LABNET network for the improvement of Buruli ulcer diagnosis, one of the perspectives after the first WHO meeting on skin NTDs in March 2023 was to harmonize the molecular diagnosis of other skin NTDs. To support this, we aimed to strengthen diagnostic testing capacity for yaws.

Methods

An inventory was carried out to evaluate the capacity laboratories within BU-LABNET network. After, we selected

standardized targets for qPCR based on existing data, polA and Hd16SV8 genes for detection of Haemophilus ducreyi and Treponema pallidum in yaws like lesions. As part of our harmonizing work, we evaluated DNA extraction testing by comparing three extraction techniques and master mix for qPCR. Since master mix used in the BU-LABNET is suitable for singleplex and duplex assays, multiplex testing of H ducreyi (HD16SV8) & T pallidum (polA) was developed for yaws like lesions.

Results

Assay optimization and validation allowed us to harmonize all laboratory based procedures for molecular testing of yaws like lesions through detection of polA gene for yaws, and Hd16SV8 gene for H. ducreyi. Alongside laboratory testing, we embedded activities focused on evaluation of the quality of samples collected in the fields by validating RNAse P detection with the reagents used in the BU-LABNET network. Biological samples can be handled now in compliance with the good clinical laboratory practice requirements.

Conclusions

The newly establishing enhanced capacity of molecular assays for diagnosis of yaws like lesions is a major step forward in the fight against skin NTDs The currents tests could be expanded into other endemic countries for implementation to support national programmes.

2500

Peer-to-peer engagement: Improvement of HPV and Covid-19 vaccination uptake.

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Keywords

Peer to peer, HPV, COVID-19

Introduction

The role of demand creation in bolstering health services and systems is widely acknowledged. Community participation in sensitization and mobilization activities fosters acceptance and ownership, thereby facilitating improved service uptake. The challenges encountered in introducing HPV vaccination for girls aged 10-14 and countering COVID-19 resistance, rooted in religious and cultural beliefs, misinformation, and misconceptions, prompted Kamukunji/Ruaraka Sub-County in Nairobi County to implement a peer-to-peer strategy from January to March 2023.

Methods

Multiple community and school-based outreaches in Nairobi County yielded low HPV and COVID-19 vaccination rates, proving costly and time-intensive. Collaborative meetings between the Sub-County Health Management Team (SCHMT) and head teachers from the Ministry of Education culminated in the establishment of a committee comprising a health teacher, nurse, and Community Health Promotion representative. This committee identified and appointed "health champions" tasked with persuading their peers to embrace vaccination and other health services. Bi-weekly sensitization sessions, over three months, addressed the advantages, myths, misconceptions, and immunization side effects. The influence of "peer influencers" extended beyond their immediate circles to encompass fellow students, parents, and community members through informal platforms such as clubs and games.

Results

Among the targeted 15,700 HPV-eligible girls, 7,632 were successfully immunized, with 5,338 receiving HPV 1 and 2,294 receiving HPV 2. While only attaining 8% of the target in January 2023, the integration of peer-to-peer discussions yielded notable progress, surging to 29% in February and 49% in March. The Sub-County also accomplished the vaccination of 669 pupils with COVID-19 dose one and 169 with COVID-19 dose two.

Conclusions

Tailoring health-related messaging to specific audiences enhances service uptake, thereby increasing the likelihood of achieving herd immunity. The success of the peer-to-peer engagement model in both HPV and COVID-19 vaccination campaigns underscores its potential as an effective strategy to overcome barriers to vaccination and improve public health outcomes.

2584

Piloting Tom Brown, a locally produced supplementary food for the management of moderate acute malnutrition in Gombe state, Nigeria, 2022

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Keywords

Children; community-based; MAM; moderate acute malnutrition; supplementary feeding programme; wasting

Introduction

In Nigeria's Gombe state, 6.6% of children have moderate acute malnutrition (MAM) and are at risk of deteriorating to severe acute malnutrition (SAM). Targeted supplementary feeding under community based management of acute malnutrition is an effective strategy to reduce mortality. We present findings from a pilot outpatient therapeutic program (OTP) using Tom Brown, a flour blend of roasted sorghum, soybean, and groundnuts, for management of MAM.

Methods

We conducted a retrospective cohort analysis of enrollment data from OTP sites located in three local government areas from October 2022 to April 2023. Data were extracted for children aged 6-59 months diagnosed with MAM, defined as absence of oedema; weight-for-height z-score (WHZ) ≥-3 and <-2; and/or mid upper arm circumference (MUAC) ≥11.5 and <12.5 cm. Those enrolled for at least 14 days and receiving 1.5 kg/week of Tom Brown were included in the analysis.

Results

Of the 1,518 children enrolled for acute malnutrition, 572 (37.7%) had MAM. At the end of follow-up, 127 (22%) deteriorated to SAM and were switched to ready-to-use therapeutic food; 365 (64%) recovered, i.e. had two consecutive visits with WHZ >-2 and MUAC >12.5; and 7 (1%) did not improve. For children who recovered, average enrollment length was 43.8 (±18.6) days and average weight gain was 2.31 (±2.18) g/kg/day. 86 (15%) defaulted but 57 of these returned at a later date, of which 13 (22.8%) had deteriorated to SAM. 3 deaths were also reported.

Conclusions

Tom Brown is a feasible alternative for management of MAM. Made using cheaper local ingredients, this product can potentially reach more children particularly when combined with frequent screening and early diagnosis in the community. Timely community based follow-up of defaulters may also improve program adherence. Research is needed to understand its effects compared with other commercial products and cash-based interventions.

2683

Comparison of two polymerase chain reaction assays, DaAn Gene 2019-nCoV and Cepheid Xpert Xpress for SARS-CoV-2 detection during the Delta and Omicron waves in Yaounde, Cameroon

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Keywords

Mutations, SARS-CoV-2, RT-PCR, Delta variants, Omicron variant, Cameroon.

Introduction

Mutation in the SARS-CoV-2 genome remains a serious global health problem. Despite significant efforts made to create new tracking tools against the virus s in LMICs like Cameroon, gene mutations of SARS-CoV-2 may impair the effectiveness of diagnosis . we propose in this comparative study to evaluate how well Cepheid Xpert Xpress and DaAn Gene 2019-nCoV detect the Delta and Omicron variants of SARS-CoV-2.

Methods

In this comparison, we tested nasopharyngeal samples collected during successive waves of the Delta and Omicron variants between October 08, 2021 and December 16, 2022 using two reverse transcription polymerase chain reaction (RT-PCR) assays, DaAn Gene 2019-nCoV and Cepheid Xpert Xpress according to manufacturer's instructions. Assay agreement was assessed using Cohen's kappa coefficient.

Results

Overall, 294 Nasopharyngeal samples were used for comparisons amongst which 167 were sequenced by NGS. The DAan Gene protocol showed a positivity rate of 59.2% (174/294) versus 57.8% (170/294) for the GenXpert. The overall percentage of agreement between these two protocols according to the manufacturer's recommendations was 95.91% (282/294), with a kappa coefficient of 0.95 (95% CI), indicating perfect agreement between the two diagnostic protocols. Using the Cameroon national algorithm threshold for SARS-CoV-2 de-

tection (CT≤37), we had a positivity rate of 58.2% (171/294) for the DaAn gene protocol against 54.4% (160/294) for the GenXpert protocol. The overall percentage of agreement between the two protocols remained similar, at 95.6% (282/294) with a Kappa coefficient k=0.95 indicating perfect agreement between the two single CT≤37 diagnostic protocols. Interestingly, the agreement remained similar when stratified by variants as determined by NGS : 97% (Kappa k=0.97).

Conclusions

The GenXpert and Daan gene diagnostic protocols showed a perfect concordance in detecting SARS-CoV-2 during the different waves of Delta and Omicron variants. These tests can be used interchangeably when tracking the pandemic driven by these variants.

2696

Investigating the effect of Chlorogenic acid on proliferation and apoptotic induction in prostate cancer cells

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Keywords

Apoptosis, Chlorogenic acid, DU 145 prostate cancer cells, Nuclear blebbing, 22RV1

Introduction

Prostate cancer (PC) is the second most prevalent solid tumor among males globally. Evidence shows that majority of PC initially depend on androgens for growth and survival, and the androgen receptor (AR) pathway plays a central role in mediating the effects of androgens on prostate cells. The AR pathway also promotes PC cell proliferation and metastasis. Therefore, modulators of the AR pathway may serve as promising regimens for PC. In this study, we aimed to determine the potential anti-cancer activities of chlorogenic (CGA) on DU-145 and 22 RV1 prostate cancer cells

Methods

The cytotoxicity of CGA on cell viability of DU-145 and 22RV1 was measured by using MTT assay. Induction of apoptosis was tested by using DAPI staining.

Results

In the MTT test, CGA was found to reduce cell viability in both DU145 and 22RV1 cells in a dose- and time-dependent manner. Additionally, Both the DU-145 and 22RV1 cells treated with CA exhibited characteristics of apoptotic cells like reduction in nuclear size, nuclear blebbing, and chromatin condensation.

Conclusions

This experiments showed that CGA is cytotoxic to both the DU-145 and 22RV1 in a dose-dependent manner and the cells were undergoing cell death primarily through apoptosis. As a result, chlorogenic acid could be used as a potential treatment for prostate cancer given that it promotes apoptosis, though future work would be needed to understand its effect on migratory genes and metastasis.

2701

Hemocompatibility studies and physicochemical evaluation of a green-synthesized metal nanoparticle using Guava (Psidium guajava) leaf extract conducted in Nigeria, January, 2023

Runner up - Best Abstract Poster

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Keywords

Psidium guajava, Zinc oxide, Metal nanoparticles,Hemolysis, Toxicity, and Therapeutics

Introduction

Metal nanoparticles (MNPs) are increasingly used in drug delivery, although their toxicity prevents their use as they hemolyze red blood cells when ingested. Study objective was to characterize and assess the in-vitro hemocompatibility of green-synthesised MNPs prepared via low-cost means.

Methods

Fresh Guava (Psidium guajava) leaves (FG) were used to prepare zinc oxide nanoparticles (ZnONPs). Different concentrations of FG (5, 10, 15, 20, and 30%) were prepared with Zinc

oxide suspension (6 % w/v) and dried to obtain ZnONPs. They were characterized by visual inspection, UV-Vis spectroscopy, particle size (PS), polydispersity index (PI), Zeter potential (-), and FTIR. Further toxicity tests were conducted with goat blood centrifuged in 4% trisodium citrate prepared in different concentrations (0.01, 0.03, 0.05, and 0.10%) of phosphate buffer solution (PBS), with PBS and Tween® 20 as negative and positive controls, respectively, incubated and screened using the UV at 415 nm.

Results

A colour change from milky-white to brownish mixture was observed for all concentrations after 12 h, confirming the synthesis of ZnONPs. Further confirmation with UV revealed the maximum peak absorbance at 373 nm. The particle sizes ranged from 534 to 812.3 nm in the order: 15% > 5% > 20% > 30% > 10% with values of 812.3, 792.5, 656, 569.7, and 534 nm, with a corresponding PI of 0.497, 0.558, 0.605, 0.544, and 0.479 and - of -58.8, -53.5, -59.1, -54.7, and -56.3 mV, respectively. The FTIR Zn–O stretching band was observed at 872 cm-1 for 10, 15, 20, and 30% concentrations, and 879 cm-1 for 5%. The toxicity test showed absorbances of 0.031 and 0.947 for PBS and Tween® 20, respectively, while all the ZnONPs showed ± 2.3% hemolysis.

Conclusions

Guava leaf extract may be considered a safe, non-toxic, and cost-effective method for synthesizing metal nanoparticles for therapeutics and drug delivery

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Production of the anti-rabies vaccine in Ethiopia since 1950: Challenges, Opportunities, and Implications for the PAVM Initiative

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Keywords

Vaccine, Manufacturing, Rabbis, Ethiopia

Introduction

Rabies is a significant public health issue, causing economic losses and millions of deaths in developing countries like Ethiopia. The study aims to evaluate the challenges and prospects of anti-rabies vaccine production in Ethiopia and its implications for the PAVM Initiative.

Methods

Mixed methods were used in this study, including desk reviews at the Ethiopian Public Health Institute, Ministry of Health and interviews with experts from the institute. The data on clients who received vaccines at the institute from January 2019 to June 2023 was also analyzed. The qualitative data is analyzed based on thematic analysis, and the quantitative data are analyzed using spatio-temporal logistic regression.

Results

The study shows a weak understanding of good manufacturing practices, insufficient infrastructure, weak financing, inter-sectoral collaboration, and community engagement. In addition, this finding shows a lack of organized control or surveillance, a lack of research, and a lack of adequate data, including cost effectiveness. The sheep brain-derived Fermi-type rabies vaccine has been manufactured and utilized in Ethiopia since 1950, which is completely avoided by the WHO, and no reforms, decentralization, legislation, or innovative approaches were conducted.

In the quantitative component of this research in the EPHI, 136 instances of human rabies were clinically identified between January 2019 and June 2023. All cases were fatal, and the majority of cases were linked to dog bites. Except for 12, none of the instances that were referred had any documentation of rabies vaccination.

Conclusions

Even though rabies is 100% preventable, it is causing nearly 100% of fatalities in Ethiopia. To address these challenges, the country needs to ensure local production by implementing the PAVM initiative, ensuring the transfer of technologies, and ensuring the availability and use of high-quality cell-culture rabies vaccines, which are more safe, effective, and affordable than modern anti-rabies vaccines.

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Antimicrobial Resistance Patterns and Risk Factors Associated with ESBL-Producing and MDR Escherichia coli in Hospital and Environmental Settings in Lusaka, Zambia: Implications for One Health, Antimicrobial Stewardship and Surveillance Systems

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Keywords

Escherichia coli, ESBL, One Health, antibiotics, multidrug-resistance, antimicrobial stewardship, Zambia

Introduction

Antimicrobial resistance (AMR) is a growing global health crisis impacting human, animal, and environmental well-being. AMR concerns have surged worldwide, endangering medical interventions like surgery, chemotherapy, and disease prevention. Studies confirm that antibiotic misuse in agriculture, veterinary, and medical sectors fosters multidrug-resistant (MDR) pathogens and new resistance mechanisms. Antimicrobial-resistant bacteria and their resistomes spread between humans, animals, and environments. In real-world settings, MDR infections lead to increased morbidity and mortality. This study assessed the AMR profiles and risk factors associated with Escherichia coli in hospital and environmental settings in Lusaka, Zambia.

Methods

This cross-sectional study was conducted from April 2022 to August 2022 using 980 samples collected from clinical and environmental settings. Antimicrobial susceptibility testing was done using BD PhoenixTM 100. Data were analysed using SPSS version 24.0.

Results

Overall, 64.5% tested positive for E. coli of which 52.5% were from clinical sources. Additionally, 31.8% were ESBL, of which 70.1% were clinical isolates. Of the 632 isolates, 48.3% were MDR. Most clinical isolates were resistant to ampicillin (83.4%), sulfamethoxazole/trimethoprim (73.8%), and ciprofloxacin (65.7%) while most environmental isolates were resistant to sulfamethoxazole/trimethoprim (100%) and levofloxacin (30.6%). Drivers of AMR in the tested isolates included pus (AOR=4.6, CI: 1.9-11.3), male gender (AOR=2.1, CI: 1.2-3.9), and water (AOR=2.6, CI: 1.2-5.8)

Conclusions

This study found that E. coli isolates were resistant to common antibiotics used in humans. The presence of MDR isolates is a public health concern and calls for vigorous infection preve

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Nontuberculous Mycobacterium Pulmonary Disease in a high Tuberculosis (TB) burden Country: Zambia.

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Keywords

Nontuberculous Mycobacteria, Misdiagnosis, TB disease Burden

Introduction

Nontuberculous Mycobacteria (NTMs) are ubiquitous organisms with capacity to cause both pulmonary and extra-pulmonary disease especially in the immune-compromised. Morbidity due to NTM in Zambia remains unclear.

Methods

A cross-sectional study consecutively enrolled presumptive TB patients > 18 years of age between November 2021 and December 2022. Participants underwent thorough clinical evaluation, a digital chest X-ray (CXR) and TB sputum examination by microscopy, GeneXpert ultra (MTB RIF) and culture. Baseline culture isolates of NTM prompted participant recall for clinical signs and symptoms re-evaluation and repeat sputum culture.

Results

The prevalence of NTM among 2388 presumptive TB patients was 2.7% (64), and only 30 NTM isolates were speciated with 34 samples still awaiting speciation. Of the 64 with NTMs, the mean age was 36.7 (SD 14.2), 26 (40.6%) were male, 24 (37.5%) were HIV positive and nine (14.1%) reported previous TB treatment. Symptoms included cough 51(80%), and weight loss 37 (58%). CXR was abnormal in 50 (78%). Empirical TB treatment was started in 7 participants. Due to inadequate TB treatment response at clinical review, 4 individuals were discontinued on TB treatment and initiated on NTM targeted treatment once results became available: all four responded well to treatment clinically.

Conclusions

NTMs are an emerging public health concern and maybe misdiagnosed as clinical TB in settings where prevalence is not known. They pose diagnostic challenges which include long turnaround time of sputum culture results, limited access to speciation tools and high lab contaminations which require

care in interpreting NTM isolation. Local guidelines for diagnosis and treatment contextualized to our region are required.

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Regulatory Mechanisms of Cryptolepine against Breast Cancer using Network Pharmacology

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Keywords

Breast Cancer, Cryptolepine, Network Pharmacology, Protein-Protein interaction networks, Molecular docking

Introduction

INTRODUCTION

The incidence of breast cancer is increasing, along with its mortality rates. The cellular mechanisms involved in breast cancer (BCa) constantly change during its occurrence and progression. Cancer metastasizes and invades in a complicated and polytropic manner, governed by several genes. To improve the survival rate of BCa patients, it is imperative to understand the etiology and mechanisms of BCa progression.

Methods

Target genes of cryptolepine were retrieved from public databases (Swiss target prediction), while targets related to BCa were retrieved from disease databases (Genecards and DisGeNet), and expression datasets (GSE20437) were retrieved from the gene expression omnibus (GEO). Protein-protein interaction networks (PPI) were generated using STRING and Cytoscape, and hub genes were identified by topology analysis. Annotation of target proteins was performed using the Gene Ontology (GO) database and signaling pathway enrichment analysis using the Kyoto Encyclopedia and Genome Database (KEGG). Software such as AutoDock Vina, PyRx, and Discovery Studio were used to conduct molecular docking studies.

Results

Survival and molecular docking analysis for the hub genes revealed four genes (AURKA, MAOA, OXTR, and TOP2A) were involved in the overall survival of BCa patients, and these four genes with the lowest binding energy include AURKA and TOP2A gene upregulation, MAOA and OXTR gene downregulation is associated with the survival of BCa patients, as revealed by box plots and correlation analysis.

Conclusions

In conclusion, this study revealed a potential pharmacological mechanism by which cryptolepine can treat BCa at the systemic level, possibly involving the synergistic effects of multiple mechanisms such as cell proliferation, apoptosis, cell migration, immune regulation, and inflammatory induction. This study can provide a scientific basis for the subsequent in vivo and clinical application of cryptolepine and the in-depth study of its mechanism.

Track 3: Delivering Universal Health Coverage in Africa: Strengthened and Equitable Health Systems

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Changes in the availability of medical oxygen and its clinical practice in Ethiopia during a national scale-up program: a time series design from thirty-two public hospitals

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Keywords

Medical oxygen, Pulse oximetry, In-patient pediatrics

Introduction

Oxygen therapy is a lifesaving treatment, however, in Ethiopia, oxygen is not readily available in many healthcare facilities. In 2015, the Federal Ministry of Health launched a national roadmap to increase access to oxygen. This study aims to evaluate whether availability of oxygen and its clinical practice in public hospitals of Ethiopia changed during the time the roadmap was being implemented.

Methods

Between December 2015 and December 2019, a multifaceted approach was undertaken to increase access to oxygen in public facilities in Ethiopia. The activities included formation of new policies, development of guidelines, procurement and maintenance of oxygen equipment, and training of healthcare workers. To evaluate whether access and use of oxygen changed during this period, facility-based surveys were conducted between 2015 to 2019. Primary data, including medical record reviews were collected from 32 public hospitals bi-annually. A chi-square test that claimed $P < 0.05$ used to assess the statistical significance differences.

Results

Capacity-building and technical support interventions implemented in 32 public hospitals. Of these 32 facilities, 15(46.9%) were general hospitals, 10(31.2%) were referral hospitals, and 7(21.9%) were primary hospitals. Functional availability of oxygen has shown a statistically significant increase from 62 to 100% in the pediatric in-patient departments of general and referral hospitals (p-value < 0.001). Similarly, functional availability of pulse oximetry has shown a statistically significant increase from 45 to 96%. With regard to clinical practices, the blood oxygen saturation (SpO2) measurement at diagnosis increased from 10.2% to 75%, and SpO2 measurement at admission increased 20.5% to 83%.

Conclusions

Based on the intervention results, we conclude that multifaceted approaches targeting policy, healthcare workers' capacity, increased device procurement, and device maintenance programs with on-site mentorship, can improve the availability of medical oxygen and pulse oximetry, as well as clinical practice of oxygen therapy in health facilities.

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Decentralizing oxygen availability and use at primary care level for children under-five with severe pneumonia, at 12 Health Centers in Ethiopia: a pre-post non-experimental study

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Keywords

medical oxygen, pneumonia, availability, under-five

Introduction

Pneumonia is the leading infectious cause of death in children worldwide, accounting for 15% of all deaths in children under-five. Hypoxemia is a major cause of death in patients suffering from pneumonia. There is strong evidence that using pulse oximetry and having reliable oxygen sources in healthcare facilities can reduce deaths due to pneumonia by one-third. Despite its importance, hypoxemia is frequently overlooked in resource-constrained settings. Aside from the limited availability of pulse oximetry, evidence showed that healthcare workers did not use it as frequently to generate evidence-based decisions on the need for oxygen therapy. The aim of this study was to assess the availability of medical oxygen devices, guidelines, and healthcare workers' knowledge and skills in the practice of hypoxemia diagnosis and oxygen therapy in piloted health centers of Ethiopia.

Methods

A pre-post non-experimental study design was employed. An interviewer-administered questionnaire was used to collect

primary data and review medical record charts. A chi-square test with a statistical significance level of P<0.05 was used as a cut-off point for claiming statistical significance.

Results

Eighty-one percent of healthcare workers received oxygen therapy training, up from 6% at baseline. As a result of the interventions, knowledge of pulse oximetry use and oxygen therapy provision, skills such as oxygen saturation and practices of oxygen therapy have significantly improved among healthcare workers in the piloted Health Centers. In terms of availability of oxygen devices in the facilities, seven (58%) facilities did not have any at baseline, but due to the interventions, all facilities were equipped with the oxygen devices

Conclusions

Given the prevalence of pneumonia and hypoxemia, a lack of access to oxygen delivery devices, as well as a lack of knowledge and skills among healthcare workers in the administration of oxygen therapy, may represent an important and reversible barrier to improving child survival.

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Missed opportunities for vaccination among children aged 0–59 months attended selected health facilities in Mogadishu, Somalia.

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Keywords

Missed opportunities for vaccination (MOV), Immunization, vaccine, Somalia.

Introduction

Missed opportunity for vaccination (MOV) refers to any contact with health services by an individual who is eligible for vaccination (unvaccinated/not up-to-date, and free of contraindications to vaccination), which does not result in the individual receiving all the vaccine doses for which s/he is eligible. Immunization coverage in Somalia has remained below the national acceptable level and no published study about MOV among children aged 0-59 months in Somalia. The objective was to assess the prevalence & factors contributing to MOV among children aged 0–59 months visiting health facilities in Mogadishu.

Methods

Across-sectional descriptive study in randomly selected 9 health facilities in Mogadishu with a non-probabilistic convenience sampling of caregivers of children 0–59 months for exit interviews, and health workers using standard WHO tool for missed opportunity survey conducted from 1-30 June 2023. Total of 400 respondents were enrolled. Data entry and analysis was done by using SPSS version 23. Binary logistic regression with Bivariate and Multivariable model was used to identify predictors of MOV. Odd ratios were computed and P-value <0.05 considered statistically significant.

Results

The prevalence of MOV was 26.5%. MOV occurred among 74.2% of children during non-vaccination visits. 73.5% full immunized and 6% had never been vaccinated. Our results suggested that both individual and contextual factors were associated with MOV. Child's age group [AOR= 0.008, 95% CI: 0.001-0.072], child's place of delivery [AOR= 6.280, 95% CI: 2.010-19.629], non-vaccination visit [AOR = 0.253, 95% CI: 0.007-9.455], lack of enough vaccine information [AOR= 0.502, 95% CI: 0.072-3.518], caregiver knowledge [AOR= 13.006, , 95% CI: 1.175-143.924] and caregiver attitude [AOR= 1.187, 95% CI:0.271-5.204] were significantly associated with MOV.

Conclusions

Individual and contextual factors were associated with MOV. Further studies about MOV & Implementation of 10-step process of the MOV strategy to reduce MOV are recommended,

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Key predictors of under-nutrition among children 6–59 months in the Buea Health District of the Southwest region of Cameroon: a cross sectional community-based survey

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Keywords

Buea - Cameroon, Children under-five, Drinking water, Predictors, Prevalence, Poor dietary diversity,

Under-nutrition

Introduction

According to the 2018 Demographic and Health Survey, undernutrition remains a public health problem among Cameroonian children under-five. This varies across the country, greatest in areas with ongoing humanitarian crisis, such as the Southwest region. However, data on the burden of undernutrition in the Southwest region is sparse. This study assessed the prevalence and predictors of undernutrition among children under-five in the Buea health district (BHD) of the Southwest region of Cameroon.

Methods

This was a community based cross-sectional study of 321 children under-five/caretaker pairs, surveyed from households selected using multistage randomized sampling. Data were collected by trained data collectors, with the aid of a structured, pre-tested questionnaire that captured information on sociodemographic characteristics, food security, dietary diversity and anthropometric measurements. The weight, height/length and mid upper arm circumference (MUAC) were measured using standardized instruments. Stunting, Wasting and Underweight of children were calculated from Z-scores of Height-for-age (HAZ), Weight-for-height (WHZ) and Weight-for-age (WAZ) based on 2006 WHO standards. Data was analysed using SPSS version 27.0. Predictors of malnutrition were obtained using multivariate logistic regression, adjusting for potential confounders.

Results

Overall, 31.8% (102/321) of the children were undernourished (26.5% stunted, 1.6% underweight, 3.7% wasted). Drinking water from inappropriate sources (OR: 2.32, 95% CI: 1.30–4.15) and a Dietary Diversity Score < 4 (OR: 2.59, 95%CI: 1.46–4.61) were independently associated with increased risk of stunting. Children of the male sex were more likely to be wasted than females (OR: 5.34, 95%CI: 1.09–26.14).

Conclusions

Undernutrition, particularly stunting is common in the BHD. Risk factors identified are potentially modifiable, highlighting the need for nutrition specific and sensitive interventions to improve dietary diversity; improved access to safe drinking water, and the education of caretakers on the importance of potable water and good sanitation and hygiene for the proper growth and development of their children.

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Assessing the Job Satisfaction of Physicians in Rwanda and the Associated Factors.

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Keywords

Medical doctor, Physicians, Satisfaction, Health, Rwanda

Introduction

Rwanda has a shortage of physicians, with one physician per 8247 population, lower than the WHO-recommended one physician to 1000 population ratio. Among other factors, job satisfaction is a major reason causing physician attrition which affects patient outcomes. Understanding physician satisfaction and associated factors may help policymakers design and implement policies addressing dissatisfaction among physicians.

Methods

An online survey utilizing snowball sampling was used to measure the job satisfaction of physicians practicing in Rwanda with at least one year of experience. A modified Physician Worklife Survey based on the Rwandan medical practice context was used. It had 41, 5-point Likert scale questions divided into 5 domains: autonomy, personal time, relationship with patients, relationship with colleagues, relationship with staff, income, job satisfaction, resources satisfaction, career satisfaction, and specialty satisfaction. The median satisfaction was calculated as the average score in each domain.

Results

The overall median satisfaction score was 3.0 from 100 self-reported respondents. Domains with the lowest satisfaction scores were income (2.0), personal time (2.3), and resources (2.7). Domains with the highest satisfaction scores were relationship with colleagues (4.0), relationship with staff (3.3), and autonomy (3.2). Specialized physicians had a higher satisfaction score (3.2) compared to general practitioners (3.0; P=0.002); and married physicians had a higher level of satisfaction score (3.2) compared to singles (2.8; P<0.001).

Conclusions

Physician satisfaction in Rwanda is moderate. Factors associated with lower satisfaction were salaries, workloads, and resources, suggesting that addressing financial incentives, workloads, resources and training opportunities may be effective in elevating physician satisfaction. Interprofessional collaboration of health care providers, private and government institutions in charge of health and human resources

is needed to improve the job satisfaction of physicians, to further improve patient care.

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Factors associated with malaria vaccine uptake among children aged between 24-36 months in Nsanje District, Malawi, 2023

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Keywords

Malaria, Vaccine, Uptake, Associated factors

Introduction

Malaria remains a significant global health burden affecting millions of people, with children under 5 years and pregnant women most vulnerable. Recently, WHO introduced RTS,S/AS01 malaria vaccine as an intervention in three countries of Malawi, Kenya and Ghana. Acceptability and vaccination coverage which is important in assessing vaccine effectiveness is relatively unknown in implementing areas. In Malawi, Nsanje District reported low coverage (60%) of fully-immunized children with malaria vaccine in 2021 below recommended WHO target of 80%. This study explored factors influencing uptake of RTS,S/AS01 among children aged 24-36 months in Nsanje District.

Methods

A cross-section study design was used. Interviews were conducted on randomly selected 410 mothers/caregivers with children aged 24-36 months using a questionnaire. Data was analyzed using Stata version 16.

Results

Uptake of malaria vaccine was 90.5% for dose 1, but reduced to 87.6%, 69.5% and 41.2% for dose 2, 3, and 4 respectively. Dropout rate for malaria vaccine was 23.2%. Children of caregivers with secondary or upper education and who attended ANC 4 times or more had increased odds of full uptake of malaria vaccine [OR:2.43, 95%CI:1.08-6.51 and OR: 1.89, 95%CI 1.18-3.02 respectively]. Children who ever suffered side-effects following immunization and those who traveled long distances to reach the vaccination centre had reduced odds of full uptake of malaria vaccine [OR: 0.35, 95%CI: 0.06-0.25 and OR:0.30, 95%CI:0.03-0.39 respectively]. Only 18% (n=65) knew the correct schedule for vaccination and 45.8% (n=158) knew the correct number of doses a child was to receive.

Conclusion

Only RTS,S dose 1 uptake met WHO targets and the mothers/caregivers have low level of information regarding malaria vaccine, especially on the numbers of doses to be received and dosing schedule. Recommendation to Nsanje District Health Directorate is to strengthen communities education about malaria vaccine to increase its uptake.

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Reforming provider payment methods for strategic purchasing towards universal and equitable health coverage in Africa

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Keywords

provide payment reform; strategic purchasing; universal health coverage; health equity; Africa

Introduction

The ways in which provider payment methods for strategic purchasing are reformed to spur progress towards universal health coverage (UHC) and health equity are poorly studied in resource-limited countries. This study presents UHC trends in 47 World Health Organisation (WHO) African states, examines and maps how these countries have reformed provider payment methods in favour of strategic purchasing for UHC and health equity, and explores the barriers and facilitators that have emerged.

Methods

Clustered charts and descriptive tables were used, based on UHC service coverage index (SCI) data from WHO, Global Health Observatory repository. Next, a mapping search was conducted based on peer-reviewed publications in PubMed, Web of Science and Scopus, as well as grey documents in

Google Engine and on the websites of relevant organisations published between 2000 and 2023. Finally, national health experts/researchers were purposively selected to complete a questionnaire informed by the mapping review results.

Results

UHC has been steadily expanded in all 47 countries, as evidenced by recent increase in UHC SCI, ranging from 29 to 75% in 2021(compared with 13 and 56% in 2000). By 2010, four countries had already doubled their coverage, with this figure peaking at 42.4% (n=19/47) in 2017. However, most countries (n=33/47) had coverage score below 50% till 2021. Preliminary findings revealed that few countries reformed provider payment methods as part of strategic sourcing for UHC and health equity. Barriers included limited financial resources, fragmented health systems, inefficient use of resources, and weak primary health care delivery systems, while political commitment and stakeholder involvement were the most important facilitators.

Conclusions

This study indicates that provider payment reform remains relatively unexplored as a critical tactic of strategic purchasing in most African countries. Countries need to seize this untapped opportunity to properly incentivize providers to drive UHC and equity commitments.

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Application of ParaDNA genotyping for diagnosis of Breast Cancer-associated comorbidities in Africa: Descriptive study

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Keywords

ParaDNA testing, Breast Cancer, South Africa, side effects

Introduction

Obesity and mediators of inflammation have been identified as the most important risk and predictive factors in postmenopausal breast cancer survivors (BCS) using aromatase inhibitors (AIs). Data is lacking on the effects of AIs on clinical, biomedical, and genetic markers among postmenopausal BC women in African settings. studies on the cost-effectiveness of the feasibility of personalized in Africa are scarce. Therefore, this study was conducted to assess the feasibility of HyBeacon® probe genotyping adjunctive to standard care for timely prediction and diagnosis of AI-associated adverse events in breast cancer survivors in Africa.

Methods

A cross-sectional study was conducted to assess the knowledge of POCT among six African countries using online surveys and telephonically contact. Incremental cost-effectiveness ratio (ICER) was calculated, using a diagnostic accuracy study. This was based on mathematical modeling.

Results

One hundred twenty-six participants were considered for analysis (mean age = 61 years; SD = 7.11 years; 95%CI: 60-62 years). Comparison of genotyping from HyBeacon® probe technology to Sanger sequencing showed that sensitivity was reported at 99% (95% CI: 94.55% to 99.97%), specificity at 89.44% (95% CI: 87.25 to 91.38%), PPV at 51% (95%: 43.77 to 58.26%), and NPV at 99.88% (95% CI: 99.31 to 100.00%). Based on the mathematical model, the assumptions revealed that ICER was R7 044.55.

Conclusions

HyBeacon® probe genotyping for AI-associated adverse events is cost effective in Africa. The barriers for implementation of POCT application among six African countries for diagnosis of breast cancer included governance issues, insufficient awareness and insufficient trainings, lack of lab equipment's, insufficient funding's and ethical guidance issues for conducting genetic testing's in African context.

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Exploring The Factors Influencing Zero-Dose Children In Somalia: An Analysis of the 2020 Health Demographic Survey Data (SHDS)

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Keywords

Zero-dose, children, vaccine, Unvaccinated, Somalia

Introduction

Childhood immunization is among the most cost effective and successful public health interventions. Despite progress in vaccination coverage globally over the past decades, there has been a rallying call to reach pockets of unvaccinated (zero dose) children as part of global Immunization Agenda 2030. This study aimed to assess determinants of zero children in Somalia.

Methods

This study used 2020 Somali Health and Demographic Survey (SHDS) to determine zero dose vaccination status - those who had not received any dose of four basic routine vaccines (BCG, Polio, DPT, Measles). Vaccination status of children aged 12-23 months and variables related to socio-demographic, household, health seeking, and community level factors were extracted from the SHDS data.

Results

A total of 2,304 women and their children aged 12-23 months were used to assess determinants of zero dose children in Somalia. Around 60.2% of the children were zero dose children, as they did not receive any basic routine of vaccines. Zero dose children were found to belong to the most disadvantaged families and live in remote locations. Children living in rural and nomadic areas were more likely to be zero dose (aOR 1.515, 95% CI: 1.189 – 1.93; p-value = 0.001). Mother with primary education and above (aOR 0.519, 95% CI: 0.371-0.725; p-value = 0.000), those who attended antenatal care (aOR 0.161, 95% CI: 0.124 – 0.209; p-value = 0.000) and postnatal care (aOR 0.145, 95% CI: 0.085 – 0.245; p-value = 0.000) and listen frequently to radio (aOR 2.212, 95% CI: 1.106 – 4.424; p-value = 0.025) were less likely to have children with zero dose than with their counterparts.

Conclusions

Tailored interventions that target mothers with no education, those without antenatal and postnatal care, children living in rural and nomadic areas, and from lower wealth quintile index families are required for Somalia to reach goals in the Immunization Agenda 2030.

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Descriptive review of the nature and type of patient safety incidents at a tertiary hospital in South Africa

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Keywords

patient safety incidence, adverse health events

Introduction

Globally, patient harm occurs in 10% of all healthcare users and is ranked fourteenth in the list of the global burden of diseases. The World Health Organization estimates that 42.7 million Patient Safety Incidents (PSIs) occur annually and has identified this as a key strategic priority in the mandate for universal healthcare.The study aim was to determine the nature, type and proportion of patient safety incidents at an academic tertiary-level hospital in South Africa during 2018 to 2021.

Methods

Retrospective cross-sectional observational study at a tertiary-level hospital in KwaZulu-Natal with approximately 859 beds. Inpatients above the age of 12 years were included. Outpatients and staff-related incidents were excluded. No sampling occurred as a full census was intended. Source documents were patient safety forms and minutes of the meetings. Variables included patient factors (age and gender); chronology; location and discipline. The PSI type (no harm; near-miss; harmful); incident type; and outcomes.

Results

There were 200 PSIs reported. The overall incidence was 0.43% or 4.40 PSIs per 10 000 patient-days. Most events were harm-related (72.50%). Median age was 34 years (IQR 27.5-45.5). Incidents occurred more frequently and during day shift (67.50%). The highest number of PSIs were allocated to a general ward at 62.50% and the obstetrics and gynaecology discipline (28%). Staff-contributing factors (48.01%) were highest. Main incident types were clinical process/ procedures not performed when indicated (23%), absconding (16%) and falls (14%).

Conclusions

Low voluntary PSI reporting rates were identified, and this was the main study limitation. Harm incidents were the highest, indicating a culture more likely to report negative outcomes. Electronic patient records of PSIs in an integrated online digital platform will improve record-keeping, prevent redundancy, and better facilitate data analysis. Analysis must be translated to actionable areas such as quality improvement projects to strengthen the health system.

953

Pooled coverage of community based health insurance scheme enrolment in Ethiopia, systematic review and meta-analysis, 2016-2020

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Keywords

CBHI; Coverage; Ethiopia; Systematic review.

Introduction

1. Community Based Health Insurance (CBHI) is a type of health insurance program that provides financial protection against the cost of illness and improving access to health care services for communities engaged in the informal sector. In Ethiopia, the coverage of CBHI enrolment varies across regions and decision of household enrolment is affected by different factors. There are pocket studies on CBHI scheme with different coverage in Ethiopia and there is no pooled study on CBHI enrolment coverage in Ethiopia for better understanding the scheme and decision making. The aim of this systematic review and meta-analysis was to identify the pooled coverage of CBHI enrolment in Ethiopia to understand its policy implications.

Methods

The systematic review and meta-analysis was done by adhering the PRISMA guideline with exhaustive search in PubMed/Medline, HINARI, SCOPUS and Google scholar complemented by manual search. Two authors independently selected studies, extracted data, and assessed quality of studies. The I2 test statistic was used to test heterogeneity among studies. The overall coverage of CBHI scheme was estimated by using random-effects model.

Results

Among 269 identified, 17 studies were included in this meta-analysis and the overall coverage of CBHI scheme was 45% (95% CI 35%, 55%) in Ethiopia. The sub-group analysis shows higher enrolment rate 55.97 (95%CI: 41.68, 69.77) in earlier (2016-2017) studies than recent 37.33 (95%CI: 24.82, 50.77) studies (2018-2020).

Conclusions

The pooled coverage of CBHI enrolment is low in Ethiopia compared the national target of 80% set for 2020. It is also concentrated in only major regions of the country. The finding of the study helps national decision making for CBHI scheme service improvement. Due attention to be given to improving geographic expansion of CBHI and to the declining coverages with in the CBHI implementing regions by addressing the main bottlenecks restraining coverages.

1027

Effect of community health worker home visits on child survival: a cluster randomised trial in rural Mali, February 2017-January 2020

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Keywords

Mortality, children, community health worker, intervention

Introduction

Malaria, acute respiratory infections and diarrhoeal diseases remain the principal causes of under-five mortality rate (U5MR) in Sub-Saharan Africa. We evaluated the effect on U5MR of a health system strengthening intervention including community health workers (CHWs) conducting proactive home visits versus CHWs care at fixed sites, with the former hypothesised to have a greater effect on U5MR.

Methods

In this unmasked cluster randomised trial, we randomly assigned 137 village-clusters in rural Mali (1:1) to receive comprehensive primary care services, led by 'proactive' CHWs (intervention) or by 'fixed-post' CHWs (control). In both arms, user fees were also removed and health clinics were strengthened in infrastructure and health personnel. We included all children under five years old in the study area whose mother was of reproductive age at enrollment and a permanent resident. Using lifetime birth histories from eligible women surveyed annually, we estimated incidence rate ratios effects of the intervention on U5MR in time updated Poisson models. Analysis was by intention to treat. (Trial registration: ClinicalTrials.gov NCT 0269405)

Results

From February 2017 to January 2020, we enrolled 31,761 children, with 53,191 person-years (27,448 intervention; 25,743 control) observed. In the intervention arm, the U5MR declined from 142.8 to 61.1 deaths per 1,000 live births (95% CI 133.3 to 152.9; 51.9 to 71.9, respectively) and from 154.3 to 59.1 deaths per 1,000 live births in the control arm (95% CI 144.3 to 164.9; 50.1 to 70.1, respectively). We found no evidence of a difference in intervention effect between study arms (IRR 1.02, 95% CI 0.87 to 1.19, P=.81).

Conclusions

Though difference in U5MR was attributable to CHW proactive home visits, there was an overall rate reduction in U5MR during the trial despite armed conflict, which may be attributable to the health system strengthening measures. Greater investments should be directed towards evidence-based health system programmes.

1029

Equity benefits of task-shifting to improve tuberculosis case detection and treatment in Ethiopia: prioritization and optimization

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Keywords

Tuberculosis, equity, services coverage, task-shifting, health extension program, Ethiopia

Introduction

Studies indicate that adding tuberculosis (TB) services into health extension workers (HEWs) tasks improved case detections and treatment outcomes in rural communities in Ethiopia. Given resource constraints and operational difficulty, only limited areas can be targeted for national scale-up. Hence, this study mapped distributional disparities of TB services across regions and districts and projected the equity benefits of task-shifting in Ethiopia.

Methods

We used data from health information systems, household surveys, census, geospatial datasets, and implementation study findings. We measured equity in terms of TB services coverage using: (i) primary healthcare distribution; (ii) diagnosis coverage; (iii) health center adequacy (population capture per health center); and (iv) spatial access (population with facility access within 2-hour walking distance). Districts with coverage gaps were prioritized and included in models that simulated the equity benefits of HEWs' task-shifting and its impact on national TB case detection and treatment outcomes.

Results

TB diagnosis coverage varied from 54% in Afar to 100% in Harari region. Median number of health facilities per district ranged from 2 in Somali to 6 in Amhara and Tigray. Health center inadequacy (>27,000/facility) ranged from 10% of districts in Benishnagul-Gumuz to 87% in Sidama, and TB services inadequacy from 32% in Amhara to 73% in Somali region. Spatial access inadequacy (<34% with access) ranged from 7% of districts in Sidama to 91% in Somali for health centers, and from 7% in Sidama to 97% in Afar for TB services. Task-shifting in districts with inadequate coverage could raise national case detection and treatment success rates from baseline 66 to 88% and 93 to 99%, respectively.

Conclusions

Access to TB services presents large disparities across Ethiopian settings, which is attributable to both health-system and TB-specific deficiencies. Adding TB services into HEWs tasks in districts with poor coverage could significantly address gaps and improve program effectiveness in Ethiopia.

1051

Pathway from Innovation to Scale: Implementation Learning from RISE (Roadmap to Integrate Smart Start in Ethiopia) Program.

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Keywords

RISE, Smart Start, Service delivery, Health System Strengthening

Introduction

Married adolescent girls require contraceptives services which may not always accessible due to scarcity of quality services friendly and relevant to them. With funding from BMGF and CIFF, PSI with MOH Ethiopia co-created Smart Start, a proven model for improving quality of contraceptive uptake among married rural adolescents (15-19). In January 2020, a project, Roadmap to Integrating Smart Start in Ethiopia (RISE) launched, whereby PSI provides technical support to MOH to integrate Smart Start into existing health system and scale to 465 districts by December 2024, targeting rural married adolescents of hard-to-reach areas and evaluated RISE's program implementation in 2022.

Methods

Data was generated from MOH DHIS2 monitoring system at 7455 HPs, 302 districts of five regions. Data Analysis from May 2021-June 2023 were conducted using STATA. Descriptive and trend analyses depicted to assess performance before and after introduction of RISE, program impact was modelled using FP2022 Ethiopia fact sheet projection. Implementation insights gathered directly from clients using user centered design (UCD), information was synthesized and supplemented with program monitoring data.

Results

The results showed; 21,503 HEWs and 99,521 WDAs trained on Smart Start; 241,935 and 181,807 clients adopted contraception method as new and repeat acceptors, respectively. Trend analysis indicates 58% increase in service uptake compared to the same period in 2020. Before implementation, monthly reporting rates at the HP level was 36%. Following one year of RISE, this rate increased to average of 68%. The impact analysis estimated, RISE averted 163,812 unintended pregnancies; 40,824 unsafe abortions, and 517 maternal deaths.

Conclusions

Government ownership and commitment is needed at every level of the Health System, effective scale-up strategy must follow holistic support to strengthen resilient health system and supporting culture of data generation and use. Any scale-up effort should consider how to deal with changing government strategic needs and priorities for UHC.

1062

Assessing Maternal Perspectives on Healthcare Delivered by CHWs and its effect on service utilization

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Keywords

CHW, Maternal child health, Maternal outcomes, Agreement, and Beliefs

Introduction

The inclusion of the community health worker (CHW) program has strengthened Rwanda's healthcare system, leading to positive maternal outcomes. 98% of recent births received antenatal care from skilled providers and maternal mortality reduced from 216 to 203 deaths per 100,000 between (2015-2020). Deliveries at healthcare facilities increased from 69% to 93% (2010-2020) with CHWs accompanying pregnant women. The study aims to assess the extent to which mothers perceive the impact of healthcare services provided by CHWs on their care or that of their children.

Methods

This study is a secondary analysis of data from a Patient Quality Self-report tool validation in Rwanda. The dataset included records from 300 participants: pregnant mothers and mothers of children under five who received services from nurses. The analysis focused on whether mothers agreed to receive service from a CHW, their beliefs about CHWs knowing nurses' instructions given to them, and their beliefs about nurses being in accordance with CHW instructions for their care. Using a visual Likert scale of cups, ranging from empty (cup1) indicating strong disagreement/belief, to full (cup4) indicating high agreement/belief, mothers' levels of agreement and belief were assessed.

Results

Among participants, 98% agreed to receive services from CHWs. However, the levels of agreement varied. 55.3% expressed high agreement, with the majority coming from rural areas, making up 56% of the total. Additionally, 28% indicated moderate agreement, while strong disagreement was only 2%. Concerning beliefs, 43% expressed high belief regarding CHWs' awareness of nurses' instructions given to them. Unfortunately, 46% expressed high belief in nurses being in accordance with CHW instructions for their care.

Conclusions

Collaboration and information sharing between nurses and CHWs could be enhanced, as it can foster a stronger sense of trust among nurses in CHWs. By nurturing this collaborative environment, both sides can provide optimal care for mothers.

1156

Prognostic prediction models for adverse birth outcomes: A systematic review

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Keywords

adverse birth outcomes, stillbirth, preterm birth, low birth weight, prediction models

Introduction

Despite progress in reducing maternal and child mortality globally, adverse birth outcomes have been observed to be disproportionately high in low- and middle-income countries (LMICs). Developing and validating a prediction model for adverse birth outcomes allows for early risk detection and prevention strategies. This systematic review aimed to assess the performance of existing prediction models for adverse birth outcomes and provide a comprehensive summary report of their findings.

Methods

We used the Population, Index prediction model, Comparator, Outcome, Timing, and Setting (PICOTS) approach to retrieve studies PubMed/MEDLINE, Scopus, CINAHL, Web of Science, AJOL, EMBASE, and the Cochrane library. We searched for grey literature using WorldCat, Google, and/or Google Scholar. Data were extracted using the CHecklist for critical Appraisal and data extraction for systematic Reviews of prediction Modelling Studies (CHARMS), and analyzed for risk using the Prediction model Risk of Bias Assessment Tool (PROBAST). We descriptively reported results in tables and graphs.

Results

We included 115 prediction models: composite adverse birth outcomes (6), low birth weight (17), small for gestational age (23), preterm birth (71), and stillbirth (9). Maternal clinical and medical characteristics were the most widely used prognostic factors for preterm and low birth weight prediction, while uterine artery pulsatility index was used for stillbirth and small for gestational age prediction. The discrimination performance of preterm birth prediction ranged from an area under the curve of 0.51 to 0.83. Only 6% of the models reported model calibration.

Conclusions

Current adverse birth outcome prediction models have poor to excellent discrimination performance, but most did not report calibration performance. Inconsistent prognostic factors were included for each adverse birth outcome prediction. Prediction models with consistent prognostic factors and warranted external validation should be accessible to practitioners.

1192

"Is there a better way to do it?" The Impact of Health Financing Allocative Efficiency on Achieving Universal Health Coverage in Sudan, 2022.

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Keywords

Universal health coverage, Allocative efficiency, Equity, Health system, Sudan

Introduction

Sudan's political and economic turmoil impacts resources available for health. The high burden of disease and low financial protection, requires the system to allocate its resources efficiently. Especially that 33% of health spending in Africa can be reduced while achieving same outcomes. A knowledge gap on health efficiency in Sudan exists. The study analyzes the influence of health financing allocative efficiency on Universal Health Coverage (UHC) outcomes in Sudan and explore existing interventions to provide recommendations for policy makers.

Methods

A literature review was conducted on allocative efficiency for Sudan's health system. Using the Joint Learning Network analytical framework. Examining efficiency through the result chain of Inputs, process, outputs and outcomes. The analysis compared the performance of Sudan's system to the global average, focused on system inputs, and explored existing interventions in Sudan, with lessons from countries with similar context.

Results

Allocative efficiency of health financing in Sudan influences the outcomes of the UHC. The system performance reflects poor outcomes in comparison to the global average. Financial protection, health status and utilization are low and disproportionatly burdening the poor and rural populations.

At inputs level; medicines and medical-supply, health workforce, infrastructure, information and financing showed allocative inefficiencies affecting health outcomes. Theses inefficiencies are influenced by high fragmentation, poor coordination, inequitable distribution, and bias towards curative services with the poor and rural population being more affected. Interventions such as revolving drug fund and provider

payment mechanisms have shown improvement in availability, affordability, and quality of services in Sudan and similar contexts.

Conclusions

Sudan health system allocative inefficiencies negatively influence UHC outcomes, affecting people's health inequitably. Government and stakeholders need to address these gaps through adopting equity models for resource allocation, aligning efforts and address fragmentation with unifying pools of funds and purchasing of services, to provide health for all in Sudan.

1361

Prevalence and immediate consequences of patient detention in urban health facilities: a cross-sectional study in Kinshasa, Democratic Republic of Congo, 2020

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Keywords

Detention; Out of pocket; Kinshasa, Democratic Republic of the Congo; Universal health coverage

Introduction

Detention of patients is the practice of a Health Facility (HF) to keep a patient beyond the normal stay after his or her recovery, to force him or her to pay the bill for the care received. In the Democratic Republic of Congo, over 91.0% of patients has an out of pocket to access healthcare. This study aimed to determine the extent of detention and the experiences of victimized patients in Kinshasa health facilities.

Methods

This was a cross-sectional study that included all patients who had stayed from January 2019 to March 2020, in Kinshasa HF with an inpatient ward (n=150). We collected data using hospitalization registers, charge sheets and receipts, and structured interviews with detained patients.

Results

The prevalence of detention was 15.3% (n=24820; CI95%: 14.8-15.8%). Over 80.0% of patients were detained in referral hospitals; 77.3% were detained in public HF, and the majority in paediatric and maternity wards. The median length of detention was 22 days (3-373 days). It was longer in the maternity ward than in the other wards ($p<0.001$). The median detention charge was 176.5 USD (10.0-4059.0 USD). This median varied by department: from over 623.8 USD in Surgery department to 76.5 USD in Paediatrics ($p<0.001$).

Detained patients were victims of disrespectful care from healthcare providers: discourteous and humiliating remarks; refusal to occupy the bed or sharing the bed with two fellows detained (8.8%); refusal of care such as dressing (10.0%), physical violence (8.5%), detention of the baby for those who were in maternity (21.3%).

Conclusions

Detention of patients is a widespread phenomenon in Kinshasa but is still going unnoticed. Those most affected are the poor. Making the policy of universal health coverage effective would reduce the impact of catastrophic health expenditure on households.

1394

Application of the Interactive Systems Framework in public health services and systems research models on dissemination and implementation research in Non-Communicable Diseases in Zambia

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Keywords

ISF, implementation research, health system

Introduction

The Interactive Systems Framework (ISF) highlights how building local capacity specific to organizational functioning and innovations are necessary to support, deliver, and disseminate innovations within new settings. In 2021, CIDRZ engaged with the Zambian Ministry of Health (MoH) to implement the WHO PEN interventions for more severe conditions in Zambia (PEN-Plus Clinical Model). This was done by applying strategies and system actors such as delivery, support and, synthesis and translation systems at different levels to ensure local adaptation and scaleup.

Methods

The PEN-Plus clinical model was founded on a local investment case for pro-poor policies and integrated health service delivery platforms to achieve substantial reductions in

premature death, suffering and poverty due to NCDs and injuries. The application of the ISF and delivery mechanisms was demonstrated at two (2) first level hospitals in a rural (Mwachisompola) and peri-urban (Matero) communities. A Stakeholder Consultation Group, selected the top ten priority NCD conditions and described level of service provision. The staff were provided with administrative support, knowledge, equipment and medications. Real-time monitoring and evaluation were carried out via the DHIS2.

Results

A total of 989 residents (279 rural and 710 urban) received NCD services from November 2022 to August 2023. The delivery system consisted of strengthening of the management of severe and complex NCDs through task-shifting and task-sharing to Clinical Officers and Nurses through didactive trainings, clinical attachments, planned mentorship and facilitation. The Synthesis & Translation System is ongoing and consists of the formulation of Standard Treatment Guidelines and evidence based messaging of health effects of NCDs for patients.

Conclusion

The ISF in public health services and systems has developed local capacity which requires the Zambian MoH ownership and commitment to absorb the NCD program and establish protocols that describe responsibilities, treatment, referral systems and guide upscaling to other health facilities.

1426

The Effect of The GROW Hopes for Life-Communities Intervention On Risky Sexual Activities Among Young People In Selected Rural and Urban Communities In Zambia

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Keywords

Alcohol, Intervention, Young People, Sexual activity

Introduction

Alcohol consumption increases risky sexual activity in youths. Alcohol lowers inhibitions, hampers decision-making skills, and impairs judgment. This may lead to a lack of contraception and protection, elevating the risk of unintended pregnancies, sexually transmitted infections (STIs), and poor personal boundaries, leading to sexual coercion or assault. Addressing alcohol consumption among youths requires interventions that raise awareness about the interconnectedness of alcohol and sexual decision-making. GROW Hopes for Life-Communities (HFL-C) is a yearlong, weekly 90-minute curriculum rooted in positive psychology and spirituality that aims to build character strengths, bolster psychological resilience, and decrease UAU and risky sexual behaviors in Zambian youth. The aim of this study was to assess HFL-C's effect on risky sexual behaviors.

Methods

This prospective study utilized a wait-list minimal intervention control group. Analyses encompassed 363 urban and rural participants aged 18 to 24 years (189 intervention subjects,176 wait-list control subjects), who were assessed at baseline and after eight months of the study. Data were analyzed descriptively using Generalized Estimating Equations (GEE).

Results

Baseline data showed no differences between groups in mean number of sexual partners, number of non-consensual sex partners, or sexual activity after alcohol/drug use. After 8 months of GROW HFL-C, intervention participants reported fewer sexual partners (mean 1.2 vs. 2.2, $p<.001$) and fewer non-consensual sexual partners (12.3% vs. 23.8%, $p=.005$) in the past 6 months. In the past 2 months, fewer intervention participants reported non-consensual sexual activity (8.5% vs. 14.7%, $p=.063$) or sexual activity after alcohol/drug use (11.7% vs. 38.5%, $p<.001$). More intervention participants had also abstained from sexual activity in the past 2 months (45.5% vs. 34.7%, $p=.037$)

Conclusions

Study participants reported a marked reduction in risky sexual activities after participating in GROW HFL-C. Findings underscore this intervention's potential to mitigate the risks associated with alcohol-induced sexual decision-making among youths

1678

Improving uptake of timely safe obstetric and surgical care among women with previous cesarean delivery in Rwanda

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Keywords

cesarean delivery, safe obstetric care, delivery planning, Rwanda

Introduction

In Rwanda, the primary indication for cesarean deliveries (CD) is a history of previous CD. A 2019 study in rural Rwanda found that 85.4% of pregnant women with previous C scars presented at hospitals as emergency CD cases. This study assessed the effectiveness of an active follow-up intervention in improving timely safe obstetric and surgical care among women with previous CD in Rwanda.

Methods

The study utilized a pre-intervention and intervention cohort design to compare outcomes defined as emergency CD rate before and during the intervention. The pre-intervention group included 212 women, while the intervention group involved 219 women. We conducted the study in four public hospitals and 64 health centers in Rwanda. The intervention involved active follow-up of pregnant women with previous CD, utilizing tailored education and phone call reminders. Data were collected from November 2022-May 2023 and analyzed using Stata 17.

Results

Among women in the intervention group, 86.3% had reported to the hospital within five days post-referral when they were first called, 63.9% of them saw a provider and were scheduled for delivery, and 22.4% were immediately admitted for delivery. The percentage of women who consulted with their provider to create a delivery plan for 36-38 weeks of gestation increased from 37.6% in the pre-intervention group to 68.6% in the intervention group. Consequently, in the adjusted logistic regression model, there was a significant association between the intervention and reduced odds of emergency c-section, with a 77% reduction in the odds of delivery by emergency c-section (OR: 0.23; 95% CI: 0.14-0.37) compared to pre-intervention.

Conclusions

The study demonstrates the effectiveness of active follow-up in promoting delivery planning and reducing emergency c-section rates. Tailored education, along with personalized phone conversations around delivery period, contributed to increasing awareness and motivating women to seek timely care at the hospital for delivery planning.

1688

Factors associated with unmet need for family planning among unmarried women in Rwanda

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Keywords

Unmet need, family planning, intentions, Rwanda

Introduction

In Rwanda, 37% of sexually active unmarried women are not using family planning (FP). This study assessed the factors associated with unmet need for FP, reasons for not using, and intention to use FP methods among sexually active unmarried women.

Methods

We conducted a cross-sectional study using data from the 2019-2020 Rwanda Demographic and Health Survey (RDHS). The National Institute of Statistics defined unmet need as women who want to postpone their next birth for two or more years or want to stop childbearing but are not using an FP method. The RDHS surveyed 14,634 women aged 15-49 from 12,949 selected households. This population included 417 sexually active unmarried women. We used Stata 17 for data extraction and analysis. Results are presented using frequencies and percentages. Logistic regression models were fitted to identify factors associated with unmet need for FP at 95% CI, with a probability value of ≤0.05.

Results

Among 417 sexually active unmarried women, 156 (37%) expressed unmet need for FP. The majority were aged 15–24 years (n=155, 37%), Protestants (n=224, 54%), of richer wealth quintiles (n=105, 25%), owned medical insurance (n=320, 77%), and had 1-4 children (n=264, 63%). Factors associated with unmet need for FP include being in the third or fourth wealth quintile (aOR:0.46; 95% CI:0.23–0.91; p=0.025), richest (fifth) wealth quintile (aOR= 0.435;95% CI:0.2091–0.905; p=0.026), multiparity (over 4 children) (aOR: 0.23;95% CI:0.13–0.42; p<0.000), and nulliparous (aOR:0.26; 95% CI:0.11–0.59; p<0.001). Most cited reasons for not using FP were infrequent sex (n=46, 47.4%), nulliparous (n=11, 11.3%),

and fear of side effects (n=7,7.2%); 73.1% (n=114) of women had intention to use FP.

Conclusions

One in three unmarried women had unmet need. Wealth category and parity were associated. Thus, there is need to design tailored public health programs to address FP unmet need for all women subpopulations.

1694

COVID-19 vaccination coverage in Egypt: a large-scale national survey - to help achieving vaccination target, March-May, 2022

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Keywords

COVID-19 vaccines; Cross-sectional survey; Egypt; Vaccine coverage.

Introduction

Only few countries have vaccinated 70% of their population against COVID-19, most of them are high-income countries, while low-income countries have much lower vaccination rates. This study aimed to determine COVID-19 vaccination coverage and people's perceptions of vaccination.

Methods

A cross-sectional population-based household survey among Egyptians ≥ 18 years was implemented using a multistage random sampling technique across all governorates. A sample of 18,000 subjects divided into 450 clusters of 20 households each was calculated in proportion to each governorate. Participants were interviewed using a semistructured questionnaire that included demographics, vaccination information, and history of COVID-19 infection. Vaccination coverage rates were calculated and multivariate analyses were performed to identify the risk factors for low vaccine uptake.

Results

Overall 18,107 were interviewed, their mean age was 42 ± 16 years and 58.8% were females. Of them, 8,742 (48.3%) had COVID-19 vaccine and 8,020 (44.3%) were fully vaccinated. Factors associated with low vaccination uptake included: age groups (18–29 and 30–39) (ORs 2.0 (95% C.I. 1.8–2.2) and 1.3 (95% C.I.1.2–1.4), respectively), residences in urban or frontier governorates (ORs 1.6 (95% C.I. 1.5–1.8) and 1.2 (95% C.I. 1.1–1.4), respectively), housewives and self-employed people (ORs 1.3 (95% C.I. 1.2–1.4) and 1.2 (95% C.I. 1.1–1.4), respectively), married people (ORs 1.3 (95% C.I. 1.2–1.4), and primary and secondary educated (ORs 1.1 (95% C.I. 1.01–1.2) and 1.1(1.04–1.2) respectively). Vaccine hesitancy was due to fear of adverse events (17.5%), mistrust of vaccine (10.2%), concern over safety during pregnancy and lactation (6.9%), and chronic diseases (5.0%).

Conclusions

Survey identified that the COVID-19 vaccination coverage is lower than the WHO's target of 70%. Communication programs are needed to target the groups with low vaccine uptake and eliminate barriers to vaccination. Findings could guide decision-making efforts on the risky groups and preventing vaccine hesitancy.

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Référence du paludisme grave et les facteurs associés à la létalité chez les enfants de moins de 5 ans dans les hôpitaux publics du Littoral au Bénin en 2022

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Keywords

Paludisme grave, Référence, Incidence, Etude transversale, Bénin

Introduction

Introduction : Le paludisme grave est un problème de santé publique et constitue l'une des principales causes de décès en Afrique. En 2021 au Bénin, le paludisme grave a constitué la première cause de décès avec une incidence de 19,8% chez les enfants de moins de cinq ans et les causes de décès liées aux formes graves sont multifactorielles. Notre étude visait à évaluer la référence et de déterminer les facteurs associés à la létalité du paludisme grave.

Methods

Méthode : Il s'agit d'une étude transversale analytique sur les enfants âgés de 0-59 mois, hospitalisés dans trois (3) hôpitaux publics. La sélection a été aléatoire simple avec le logiciel Open Epi. Les données ont été collectées avec l'application kobocollect. L'analyse a été faite à l'aide d'Epi Info7.2 avec le calcul des fréquences et odds ratios bruts.

Results

: Sur les 386 cas enquêtés, 48,9% étaient dans la tranche d'âge de 12-36 mois. Le sexe ratio était de 1,1 avec une létalité de de 5,7%. Les signes de danger fréquents étaient, l'anémie soit 91,9%, et les vomissements soit 79,2%. Le paludisme anémique et neurologique étaient les formes les plus retrouvées soit 66,8%. Les cas référés représentaient 47% et parmi ceux-ci, 27,3% l'ont été avec l'ambulance et 64,9% ont bénéficié d'un traitement de pré référence. Les troubles de conscience (OR=3,44 ; IC95% : [1,44-8,23]), l'incapacité de se nourrir (OR=5,38 ; IC95% : [2,22-11,81]) et la malnutrition (OR=5,34 ; IC95% : [1,77-16,02]) étaient associés à la létalité.

Conclusions

Conclusion : La létalité du paludisme grave est associée surtout à l'incapacité de se nourrir et à la malnutrition. Des cas de paludisme associés à la malnutrition avec une incapacité de se nourrir doivent faire l'objet d'une attention particulière dans la prise en charge afin de réduire cette létalité.

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Effectiveness Of Integrated Community Case Management (iCCM): A Case Study of Samia Sub County, July 2023

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Keywords

Community Health Workers, Integrated Community Case Management, Malaria, Diarrhea, and Pneumonia

Introduction

The ICCM approach seeks to augment the capability of community health workers in managing common but fatal conditions affecting children under five. Samia Sub County has employed this strategy for both the under and overfives. The study aimed to evaluate the effectiveness of integrated community case management (ICCM) on health outcomes in Samia Sub County. The research objectives were to understand the implementation process, assess outcomes, and examine the factors influencing efficacy, while the research hypothesis suggested that ICCM has significant effects on health outcomes.

Methods

Cross-sectional and phenomenological methodologies were employed in this study. Data was collected from 349 caregivers using questionnaires and 29 participants using in-depth interviews. Eligibility was defined by interaction with the ICCM process, either as a direct service recipient or a provider. Quantitative data was analyzed using both descriptive and inferential statistical approaches. Thematic analysis was used for the qualitative data. A multistage sampling technique was used to select study participants in community units.

Results

Preliminary results demonstrate improvement in health outcomes attributable to early diagnoses, prompt treatment, and regular follow-ups by CHWs. Despite the noted improvement, there were remarkable implementation obstacles, including resource inadequacies, a lack of continuous training for CHWs, and inefficient tools for data collection and management, identified as key factors influencing the success of the ICCM strategy.

Conclusions

Findings suggest that although ICCM brings value to Samia Sub County, its full potential remains unrealized due to implementation challenges. The study recommends transitioning to mHealth technologies that streamline data collection and management processes. Moreover, policymakers should provide the necessary resources and strengthen the health system, specifically by offering continuous training for CHWs and a consistent supply of commodities to ensure the optimal effectiveness of the ICCM strategy. The study ultimately underlines the critical role of ICCM in achieving improved health outcomes in Samia Sub County.

1891

Evaluation of availability and bio-efficacy of Long-Lasting Insecticide-treated mosquito Nets (LLINs) for pregnant women in maternities from Benin

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Keywords

Malaria, prevention, pregnancy, LLINs, Benin

Introduction

Malaria remains an important public health concern in Africa. This disease is critical during pregnancy. The use of Long-Lasting Insecticide-treated mosquito Nets (LLINs) is the main tool for malaria prevention during pregnancy especially in the first trimester, seen that intermittent preventive treatment (IPTp) with sulfadoxine-pyrimethamine is not recommended in this period. The present study aimed to evaluate availability and bio-efficacy of LLINs from maternities stocks in Benin.

Methods

The study was carried out from January to April 2023 in 48 maternities stratified according to the public/private status and the rural/urban site and randomly selected in the 12 administrative districts of Benin. LLINs sampling were carried out in all LLINs batches present in maternities. World Health Organization (WHO) standard cone test was carried out on all LLINs sampled in order to determinate their bio-efficacy according to WHO criteria.

Results

Overall 338 LLINs were sampled in 27 public maternities and 21 private maternities. LLINs were available in all public maternities, but only 6 from 21 private maternities visited had LLINs in stocks. Therefore, 290 LLINs were sampled in public maternities vs only 48 LLINs in private maternities. From 338 LLINs sampled, 22.2% [21.9-22.4] were over 5 years old. LLINs over 5 years old were sampled in 6 from 12 administrative districts of Benin. Regarding LLINs bio-efficacy, bioassays are in progress. Preliminary results on 248 LLINs showed that except 14 nets, all LLINs tested were bio-effective.

Conclusions

These results reveal that LLINs availability in private maternities is sub-optimal in Benin, compromising the implementation in the field of malaria prevention strategy in pregnant women. It is essential to investigate in depth in order to propose interventions to improve this strategy.

1925

Six-month dispensing does not cause inadvertent HIV status disclosure concerns among ART clients in Zambia and Malawi

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Keywords

3MMD 6MMD DSD ARV ART

Introduction

Six-month dispensing of ARVs may increase retention and health facility capacity. Little is known about the patient experience of 6-multi-month dispensing (6MMD), however. Concerns about inadvertent HIV status disclosure from carrying and storing ARVs have been reported, but longer intervals between clinic visits may mitigate apprehension for those who fear disclosure if seen visiting the clinic. We assessed differences in HIV disclosure concerns between 6MMD and 3-multi-month dispensing (3MMD).

Methods

We surveyed adult (≥16) ART clients (May-November 2021) attending routine visits at 24 primary clinics in Malawi and Zambia and enrolled in facility-based 6MMD, facility-based 3MMD (F3MD), or community-based 3MMD (C3MD). Concerns regarding carrying and storing ARVs and inadvertent HIV status disclosure were assessed using questions with five-point Likert scales. We estimated proportions of participants concerned or not concerned and estimated adjusted risk ratios (aRR).

Results

800 participants (74% female, median age 36 years) were interviewed. 33% were in 6MMD,52% in F3MD, and 15% in C3MD. 14% expressed concern about carrying and storing ARVs (11% 6MMD, 14% F3MD, 16% C3MD), 21% about inadvertent disclosure (15% 6MMD, 29% F3MD, 22% C3MD). There were no differences between models in concern about carrying and storing ARVs (6MMD vs F3MD aRR=0.55, 95% CI: 0.55-1.28; C3MD vs F3MD aRR=0.93 (0.55-1.56)) or about inadvertent disclosure (6MMD vs F3MD aRR=0.76 (0.54-1.08); C3MD vs F3MD aRR=1.07 (0.75-1.53)). Younger clients ex-

pressed more concern about these issues. Women were less likely to express concern about inadvertent disclosure than men (aRR=0.75 (0.56-1.00), but no difference was found by sex regarding medication transport and storage (aRR=0.86 (0.58-1.28).

Conclusions

ART clients enrolled in 6MMD do not appear to have greater disclosure concerns than those enrolled in DSD models offering shorter dispensing duration. Fear that clients receiving 6MMD will experience greater disclosure concerns should not hinder regional rollout of 6MMD to eligible clients.

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Performance du test de diagnostic rapide anti-SARS-CoV-2 GENRUI Biotech Inc IgG/IgM à LAGET, N'Djamena

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Keywords

COVID-19 ; anticorps anti-nucléocapside ; test de diagnostic rapide ; ELISA.

Introduction

Le Tchad a enregistré depuis le début de la pandémie de Covid-19 7.417 cas confirmés et 193 décès, soit un des taux les plus bas d'Afrique. Les tests sérologiques ont été proposés comme outils fiables pour détecter les anticorps anti-SARS-CoV-2 chez les patients infectés, notamment à des fins de surveillance épidémiologique.

L'objectif était d'évaluer les performances du kit de test sérologique de diagnostic rapide (TDR) GENRUI Biotech Inc IgG/IgM utilisant ELISA comme gold standard, pour la détection des anticorps IgG anti-nucléocapside SARS-CoV-2.

Methods

Une étude transversale rétrospective a été menée entre mars et juillet 2022 sur 198 plasmas pour la détection des anticorps anti-N contre le SARS-CoV-2 au Laboratoire Majeur d'Epidémies Tropicales (LAGET) de N'Djamena. Le KIT COVID-19 ELISA IgG DIATHEVA a été utilisé comme référence pour évaluer les performances du kit de test rapide GENRUI Biotech Inc IgG/IgM (or colloïdal ; RDT). Les échantillons ont été analysés selon les protocoles préétablis du fabricant. Les données ont été analysées à l'aide du logiciel SPSS_18.0 et une valeur $p < 0,05$ a été considérée comme significative.

Results

nos résultats ont indiqué que la séropositivité des IgG avec le test immunoenzymatique de référence ELISA était de 84,8 % [IC à 95 % : (79- 89)], tandis qu'elle était de 54 % [IC à 95 % : (47- 60)] avec le RDT. Les TDR ont montré un score de spécificité de 80 % [IC 95 % : (62-91)] et une faible sensibilité de 60 % [IC 95 % : (57- 62 %)] par rapport au test ELISA de référence, la concordance entre les deux Les tests étaient modérés (coefficient Kappa Cohen de 0,22, valeur p = 0,000).

Conclusions

L'accord des tests immunochromatographiques et du test immunoenzymatique est modéré, du fait d'une faible sensibilité et spécificité, ce qui confirme l'utilisation du test ELISA comme test de référence pour la surveillance épidémiologique.

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Assessment of the human resources needs for cervical cancer screening coverage in the West region of Cameroon 2023

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Keywords

Human resources, needs, assessment, cervical cancer, screening, coverage

Introduction

Cervical cancer though preventable, is the fourth leading cause of cancer death in women worldwide. Screening and treatment of pre-cancer lesions is a cost-effective way to prevent cervical cancer. One of the constraints preventing this screening coverage in west Cameroon is the lack of human resources. To solve this problem, a need assessment is required so that informed decisions can be made by the ministry of health. The objective of this study was to determine the human resource quantitative and qualitative gap for universal coverage of cervical cancer screening in the West region of Cameroon.

Methods

A descriptive cross-sectional study which targeted health facilities in the West region of Cameroon. The study consisted

of an exhaustive collection of data in all health facilities in the region using a semi-structured questionnaire administered to the heads of health facilities, which were then compared with those obtained by calculations using references from the World Health Organization (WHO). SPSS 26 software was used for descriptive analysis and various calculations, design of graphs and tables via Microsoft Excel.

Results

Generally, in the west region of Cameroon, the human resources needs (gap) in full time equivalent (FTE) was -2.573 community health workers (CHW), -94.04 nurses/midwives for counselling, -24.348 lab technicians, -65.14 nurses/midwives for VIA/VILI, -29.604 nurses/midwives for thermal ablation, -4.974 gynaecologists and -58.163 data managers. However, positive gaps were recorded in 13 health districts.

Conclusions

There were no needs in quantitative and qualitative human resources for universal cervical cancer screening coverage at the level of the region. However, the human resources were not evenly distributed in the health districts. We therefore recommend the needs per health district be met in other to overcome the issue of distance as a barrier to universal cervical cancer screening coverage in the west region of Cameroon.

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Can health systems detect and manage high-risk newborns? Determinants of good quality care for newborns in Dire Dawa, Ethiopia

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Keywords

maternal and child health, risk, management, postnatal care, quality of care, health system

Introduction

Low-quality postnatal care holds back efforts to reduce neonatal morbidity and mortality in Ethiopia. Less is known about the ability of the health system to detect and manage various newborn risks. We explore the health system's response to different types of newborn risk and the quality of care in Ethiopia.

Methods

We examined the association between the presence of newborn risk factors and the quality of postnatal care and referral to neonatal intensive care unit (NICU) in nine public facilities in Dire Dawa Administration (DDA), Ethiopia. We defined at-risk newborns as having any one of five obstetric complications, or low birth weight, or a low Apgar score. We estimated the average proportion of essential care and counseling items completed for at-risk newborns. We also estimated the associations between the presence of risk factors and the quality of immediate postnatal care, adjusting for individual, provider, and facility-level characteristics.

Results

From 725 births across the nine health facilities in DDA, the presence of newborn risk factors was not associated with the proportion of routine newborn care items delivered. On average, providers performed 63% (95% confidence interval 58.0-64.8) of clinical actions of essential care and 56% (95% CI 48.1–65.4) of counseling items. Mean difference in these clinical actions between at-risk versus low-risk newborns was not statistically significant. In regression analysis, non-clinical factors, such as time of delivery were positively associated with the proportion of routine newborn care delivered. In the sub-analysis of hospital births, 44% (30 out of 68) of newborns at risk were referred to neonatal intensive care units in hospitals; at-risk newborns had 30 times greater odds of being referred to the NICU compared to newborns having no risk ($p<0.001$).

Conclusions

The quality of routine newborn care needs to improve for all newborns at all levels of care in the DDA, Ethiopia.

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Enhancing HIV viral load coverage in Muchinga, Luapula, and Northern Provinces of Zambia, insights from routine data quality assurance conducted in April and August 2022.

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Keywords

Routine data quality assurance, HIV viral load coverage

Introduction

Routine data quality assurance (RDQA) is important to ensure data quality reporting on HIV viral load (VL). The process of RDQA for VL programs allows for both the identification of gaps and interventions. RDQA results obtained from Muchinga, Northern and Luapula provinces are presented in this paper.

Methods

RDQA was conducted at 6 facilities between April and August 2022 as follows: Muchinga (2), Luapula (2) and Northern (2) provinces. A sample of patients currently on antiretroviral therapy (ART) were chosen by selecting every 10th patient file. Record reviews were undertaken to assess data quality focusing on whether the latest VL requisition from the patient was recorded in the facility sample register, results were recorded in the VL register, hard copy results were present in the patient file and results were recorded in SmartCare. A specific RDQA tool and SOP was developed for this assessment. Comparisons of reviewed records was analyzed using excel.

Results

A total of 919 patient files were sampled. Overall, the latest VL requisitions recorded on facility register were 80%, while 88% of patient results were documented on SmartCare and 77% on patient summary sheet. Only 40% had hard copies in patient file and results by province are: Muchinga (52%), Luapula (7%), and Northern (68%). The latest VL requisition recorded in register by facility was as follows: Muchinga (85%), Luapula (70%), and Northern (89%). Recording of results on the facility register were as follows: Muchinga (86%), Luapula (72%), and Northern (87%). Results recording on SmartCare it was as follows: Muchinga (90%), Luapula (80%), and Northern (98%).

Conclusions

The RDQA revealed areas for improvement in data quality reporting for VL. The findings suggest the need for better documentation, filing of hard copy results and filing practices to ensure that all results are recorded in the facility register, the patient file and SmartCare

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Characterizing motivation among female Community Health Workers implementing an Integrated Primary Care Program in northern Togo, 2021-2022

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Keywords

Motivation, Community Health Workers, sustainability, primary care, Togo

Introduction

Community health workers (CHWs) are essential in providing home care and linking communities with health centers. Despite proven effectiveness in community health programs, more needs to be known on how to effectively sustain these programs across various contexts. Further study of the factors affecting CHW satisfaction is imperative to maintain motivation and hence the sustainability of these initiatives. The study explores factors driving and sustaining CHWs' motivation, within an integrated primary care initiative.

Methods

Using the Consolidated Framework for Implementation Research (CFIR), we conducted semi-structured interviews with 15 female CHWs implementing a rural primary care program in three districts of northern Togo in July 2021 and September 2022. Interviews were conducted in French by trained researchers, audio recorded, transcribed then translated to English according to standard protocols. Herzberg's Two-Factor Theory was applied to explore CHW motivations, categorizing intrinsic or motivation factors that arise from the individual's desire for self-growth and fulfillment, leading to job satisfaction and extrinsic or hygiene factors that arise from avoiding discomfort.

Results

CHWs reported a shift in positive social status and satisfaction with training, but also feelings of isolation due to role demands. Skill development emerged as a potent intrinsic factor, with training satisfaction and the desire for increased knowledge. Regarding extrinsic factors, financial benefits were mentioned by some CHWs. Clear goal definition, positive feedback perception, and supportive supervision enhanced job satisfaction. Furthermore, peer support, collaboration with health center staff, and endorsement by village chiefs underscore how external factors motivate CHWs. Nonetheless, challenges like transportation, equipment reliability, and drug shortages could lead to frustration and therefore hamper motivation.

Conclusions

The findings reveal a mix of factors shaping CHWs motivation. Public health programs involving CHWs should create environments that foster sustained motivation among CHWs to improve retention and program sustainability.

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Health commodity resource allocation formula to achieve universal health coverage in Tanzania

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Keywords

Resource allocation formula, universal health coverage, health commodities, primary health care

Introduction

Formula funding particularly capitation is increasingly being adopted in low- and middle-income countries (LMICs,) including Tanzania. The approach is capable of addressing health system objectives of equity and efficiency especially when relevant risk adjustments to the capitation funding are made. This paper aimed at documenting the formula review process, identify variables explaining current pharmaceutical expenditure by health facilities, and assess the usefulness of these variables in allocating prospective health commodities funds.

Methods

We followed a six phased approach. The desk review determined possible variables and evaluated criteria for their selection. The workshop which brought together key informants from relevant stakeholders reviewed the current allocation formula, evaluated variables used in other countries and guided the feasibility of their use in Tanzania. Pearson's correlation and multiple regression analysis assessed the usefulness of the proposed variables in allocating health commodities funds. Stakeholder consensus and data-driven weighting were used to rank the relative importance of the variables. Scenario analysis using data from DHIS was done to test the functionality and implications of the proposed formula. Finally, validation meetings were conducted with decision makers.

Results

A total of eight risk adjusters were chosen out of the probable 18 identified. Analysis indicated a significant robust correlation ($P<0.01$) between per capita health commodities expenditure and all selected variables except antenatal care, which was moderately correlated. The variables explained 67% and 79% of the variation in per capita health commodities expenditure for all primary health facilities and the health center/district hospital models respectively.

Conclusions

This review demonstrated the complex process required to review and agree on the resource allocation formula in data constrained settings. We showed that data driven risk adjusters and sound methodologies can be applied to inform resource allocation. Further analysis to compare funding level from the allocation formula to actual pharmaceutical expenditure would be useful.

2252

Health Financing in a Devolved Health System: The case of four Kenyan Coastal Counties

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Keywords

Health financing, Devolution, Program Based Budgeting, Kenya

Introduction

Financing and finances flow dynamics to health facilities affect their performance and health system goals. An assessment of how health facilities in four coastal counties are financed within the context of a devolved health system was conducted.

Methods

This was a cross-sectional study carried in June and July 2023 in four coastal counties of Kilifi, Kwale, Mombasa and Taita Taveta using a mixed methods approach. Data was collected using document reviews and in-depth interviews with county health and finance teams (n=24). Documents reviewed

include the county program-based budgets, the county integrated development plans and annual workplans. Qualitative data analysis followed health financing themes aligned with KII guide while ddescriptive analysis for quantitative data was done using excel

Results

Planning and budgeting processes were not standardized across counties. Budgets were not transparent and credible. Health sector received a considerable amount as a percentage of the total county budget with Kilifi County allocating 21%, Kwale 27%, Mombasa 26% and Taita Taveta 28% to health in FY 2023/24. County and sub-county hospitals relied on user fees, while health centres and dispensaries relied on donor funds as their main sources of funding. Health facilities in one of the four study counties had no financial autonomy. While all the four counties developed PBBs, they varied in terms of comprehensiveness

Conclusions

To improve health financing in a devolved context, there is need to standardize planning and budgeting processes as well as make transparent budgets. Targeted advocacy for increased health allocation to at least 35% of county budgets and ring-fencing health funds through legislation will ensure continuous and uninterrupted health service delivery

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Assessment of Availability of Essential Diagnostic Tests at Primary Healthcare Level in Malawi

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Keywords

Test-menu, diagnostics, NEDL, access, essential

Introduction

About 80% of Malawi's population first accesses health care at primary health care facilities (PHCs). Improving availability of diagnostics at this level is critical to ensure quality and timely patient care1 . We assessed availability of tests in PHCs in Malawi to identify crucial gaps and inform the development of a national essential diagnostics list (NEDL).

Methods

In October 2022, a cross-sectional survey was conducted at 49 PHCs selected through stratified random sampling. Key informant interviews and review of laboratory registers were conducted using KOBO Toolbox to capture data on availability of 30 essential tests encompassing biochemistry, haematology, microbiology, parasitology and serology. The data was analysed descriptively using SPSS.

Results

Only eight tests were available in at least 50% of PHCs. These were the largely donor-funded malaria and HIV rapid diagnostic tests (RDTs) (100%), syphilis RDTs (98%), urine pregnancy test (93%) and TB culture (76%). HIV viral load, Early Infant Diagnosis and TB PCR sample collection was available in over 90% of facilities, via formal sample referral systems. Non-communicable disease tests were less available with only 49% and 38% of PHCs performing glucose and hemoglobin tests respectively. Less than 10% of PHCs offered full blood count, sickle cell RDT, hepatitis RDTs, stool examination, hanging drop test for v. cholera, and kidney function test. Over 95% of PHCs did not have laboratory equipment such as analysers and did not have technical laboratory personnel. Tests were performed by non-technical personnel such as health surveillance assistants.

Conclusions

While disease-specific tests are optimally conducted at the PHCs, notable gaps remain in the availability of basic routine tests such as full blood count. These are important gaps that may negatively impact health outcomes and may increase inappropriate use of medicines. Ultimately, these findings facilitated the development of Malawi's first NEDL in 2023

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LESSONS LEARNED FROM DEVELOPING THE FIRST NATIONAL ESSENTIAL DIAGNOSTICS LIST (NEDL) IN MALAWI

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Keywords

essential, diagnostics, access, IVDs, medical imaging

Introduction

Access to effective diagnostics in Malawi remains an important public health challenge. To strengthen availability and access to diagnostic services, Malawi Ministry of Health (MoH) in collaboration with stakeholders has developed its first ever National Essential Diagnostics List (NEDL) in 2023, which defines a minimum package of laboratory tests and medical imaging examinations which must be available at each tier of the healthcare system.

Methods

The NEDL was developed over a 12 months period, and involved a collaborative step-wise process with all stakeholders through scientific debates, workshops and field assessments.

Results

There are important lessons that have been drawn from Malawi' experience in developing own NEDL. MoH leadership is key; the entire development process was led by the MoH to ensure sustained momentum, ownership, and alignment with government priorities. Stakeholder involvement and allocating ample time for debates and consultations allowed stakeholders to reflect and refine the list further, thereby ensuring credibility of the final list and increasing prospects of comprehensive support during implementation. Stakeholders from public and private sector, training and research institutions, regulatory institutions, donors and development partners were engaged at every stage of developing the NEDL.

Setting and agreeing upon an evidence-based selection criteria for the tests and examinations at the beginning facilitated an objective selection process. Malawi agreed on eight scientific criteria including disease burden, through literature review and primary surveys, to guide the selection of tests. Finally, aligning the list to other strategic and policy documents such as the Malawi Health Sector Strategic Plan III, Essential Medicines List and Health Benefits Package among others, ensured that the NEDL responds to and addresses all other government priorities for public health.

Conclusions

The Malawi NEDL and the lessons discussed above provides a great resource for countries in similar contexts that are also planning to develop their own first NEDL.

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Impact of flooding on the accessibility and utilization of health services in Western Province, Zambia, August 2023

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Keywords

flooding; health access; climate change; maternal child health; Zambia

Introduction

Access to health services is an important challenge in Zambia where the underutilization of health services is linked to poor health outcomes. The purpose of this research is to identify and understand the factors that affect access to health services in the context of seasonal flooding exacerbated by climate change.

Methods

Eleven districts in Western Province are at risk of flooding. Three districts were selected to represent geographical diversity, from which three facilities were identified for follow-up given the severity of their flooding experiences. For this qualitative study, researchers travelled to these nine facilities and interviewed facility staff, teachers, and local leaders (4-7 per facility; N=56). Concurrently, gender-segregated focus group discussions (FGD) were conducted with community members ((N=~8x2); N=146). Data are undergoing thematic analysis.

Results

Preliminary results reveal findings across three major themes: climate change and its socio-economic impacts; the importance of infrastructure; and health challenges exacerbated by flooding. Climate change is affecting people's ability to predict and respond to rainfall and flooding events. Income generation through agriculture and fishing is subsequently impacted, as are household food and income security. Inadequate transportation, network, and boarding infrastructure means that not only does community struggle to reach facili-

ties, but facility staff struggle to visit communities, to receive adequate medicines, and to provide lodging for staff and patients. Pregnant women, children, the elderly, and people with disabilities face the greatest difficulty in accessing care during floods. Malaria and pregnancy complications were reported as the most significant health challenges.

Conclusions

Economic and gender-related factors are affecting access and utilization, as women and poorer households struggle to access health services, especially during floods. Increasing service delivery closer to community is one solution, if supported by further training of community-based volunteers, while better involving local traditional leaders in community engagement could increase health program uptake.

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Assessing the utility of a quality-of-care assessment tool used in assessing comprehensive care services provided by community health workers in South Africa, in 2020

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Keywords

utility, quality of care, assessment tool, comprehensive care, community health workers

Introduction

Few studies exist on tools for assessing quality-of-care of community health worker (CHW) who provide comprehensive care, and for available tools, evidence on utility is scanty. We assessed the utility components of our quality-of-care assessment tool (QoCAT) developed for summative assessment of CHWs providing comprehensive care.

Methods

Using cross-sectional study design, we assessed face validity (whether QoCAT covered everything that happens during CHW household visits) and acceptability (whether CHWs were happy to be assessed using QoCAT) based on ratings of 24 CHWs/leaders in two South African provinces (n=4 sites), to derive agreement index (≥85%, otherwise the tool had to be revised). A panel of six experts quantitatively validated 11 QoCAT items (content validity). Content validity index (CVI) of individual items (I-CVI) or entire scale (S-CVI), should be >80% (excellent). For inter-rater reliability (IRR), in two sites, we determined limit-of-agreement between paired observers' assigned quality-of-care messages and communication scores during 18 CHW household visits (n=9/site). Bland-Altman plots and multilevel modelling analysis, for clustered data, were used to assess IRR.

Results

All four sites' face validity/acceptability agreement index was ≥85%; except in one facility, with <85% acceptability. I-CVI of 11 QoCAT items ranged between 0.83-1.00. With S-CVI, all six experts agreed on relevancy (universal agreement) in 8/11 (0.72) items whereas average I-CVIs was 0.95. Bland-Altman plot limit-of-agreements between paired observes were –0.18 to 0.44 and –0.30 to 0.44 (messages score); and –0.22 to 0.45 and –0.28 to 0.40 (communication score). Multilevel modelling showed IRR of 0.77 (messages score) and 0.14 (communication score).

Conclusions

QoCAT has a high face and content validity. IRR was substantial for quality-of-care messages but not for communication score. QoCAT may only be useful in the formative assessment of CHWs to provide the basis for reflection and discussion on CHW performance, that may lead to change

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Modeling the Indirect Health Impact of Integrating Maternal Immunization into Antenatal Care

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Keywords

maternal Immunization; antenatal care; low- and middle-income countries; wealth quintile; healthcare-seeking behavior; infant mortality

Introduction

Maternal immunization (MI) boosts maternal immunity, helping prevent significant infectious diseases in children. As antenatal care (ANC) is the principal service delivery for pregnant women, it has been identified as an effective platform for MI delivery. However, incorporating MI into ANC may have indirect benefits as well. If integration improves the quality of ANC, it may enhance user confidence, increase care uti-

lization, and improve a wider range of health outcomes. We model the indirect impact of this strategy in Ethiopia, Ghana, Kenya, Pakistan, and South Africa across different socioeconomic groups.

Methods

Our conceptual framework postulates that integrating MI into ANC will enhance its utilization and quality, leading to improved care seeking for facility delivery, postnatal care, and major childhood vaccinations (e.g., DPT3, measles) as well as decreased infant mortality. We conducted two analyses to support this hypothesis. First, using post-2010 Demographic and Health Surveys from the five focus countries, we estimated the association of improved ANC utilization and quality with these outcomes by country and wealth quintile utilizing multilevel logistic regressions. Second, incorporating these impact estimates into a decision analytical model, we projected the effects of expanding MI coverage within ANC by country and wealth quintile.

Results

Integrating MI within ANC could indirectly reduce infant mortality and boost utilization of in-facility and hospital deliveries, postnatal care checks, and DPT3 and measles immunization coverage across the studied countries. The impact was found to vary among countries and wealth quintiles, with Ethiopia having lower baseline ANC utilization, demonstrating more significant effects, particularly among the lower wealth quintiles.

Conclusions

Successful integration of MI into ANC may lead to substantial improvements in indirect health outcomes in low- and middle-income countries. If carefully incorporated, MI can potentially strengthen the healthcare system. Policymakers should consider this dual benefit when planning maternal and child health strategies.

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HEALTH SYSTEM DETERMINANTS AND FP/RH DATA UTILIZATION AMONG Women's Integrated Sexual Health 2 ACTION SUPPORTED HEALTH FACILITIES IN UGANDA

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Keywords

Data, utilization, Decision making, Routine

Introduction

The main objective of this study is to scrutinize the utilization of routine health information for monitoring and decision-making among health facilities supported by the Women's Integrated Sexual Health Programme (WISH2ACTION) in Uganda. The study assumes that effective utilization of health data can lead to better decision-making and improved health outcomes

Methods

The research methodology employs a mixed-method approach, utilizing a cross-sectional design, and includes quantitative and qualitative data collection techniques through self-administered questionnaires with qualitative insights gathered. The sample size is determined using a two-stage cluster design representing urban and rural health facilities. The target population consists of healthcare workers, facility in-charges, clinicians, nurses, midwives, and information officers. Quantitative data analysis involves descriptive statistics, Pearson's Chi-Square test, and the use of Generalized Estimating Equations to account for facility-level clustering and correlation.

Results

The results reveal a high response rate, with 95 out of 162 participants demonstrating the capability of using data for decision-making. The gender distribution of respondents shows a higher representation of females (64.3%) compared to males (35.7%). The study found that as education levels (0.3050, 0.4273, 0.6018, p=0.000) increase, frequent support supervision (0.447, 0.520, p=0.0000), training, and having copies of strategic plans increase data utilization for decision-making among health workers at health facilities.

Conclusions

The study recommends that health facilities' management create an organizational culture that promotes the demand for and use of routine health information for evidence-based decision-making. It also recommends encouraging facilities to make their strategic plan to guide their operations, continuous data quality assurance, and training to build capacity among staff in data use and planning. Finally, the study established areas of the routine health information system that need to be reinforced and supported to ensure the use of routine data in health facilities for decision-making.

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Group antenatal care is a strategic tool in improving coverage of care, including preventing malaria in pregnancy for women in Nasarawa State, Nigeria

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Keywords

Group antenatal care , malaria in pregnancy, coverage, retention,

Introduction

Nigeria accounts for nearly a third of all malaria deaths globally. Pregnant women and their unborn babies face high risk of morbidity and mortality. Coverage of 4 antenatal care (ANC) visits is 60% and 45% in Nigeria and Nasarawa State, respectively. Three doses of intermittent preventive treatment of malaria in pregnancy (IPTp) is recommended, yet coverage is only 16% and 14%, respectively.

Nasarawa State adopted Group ANC (G-ANC) as a standard, based on Jhpiego trial results. G-ANC was scaled to 104 facilities in 2021-2022. G-ANC includes key components of essential ANC, including directly observed treatment of sulfadoxine pyrimethamine, malaria prevention counseling, and recognizing fever as a danger sign

Methods

A one year pre and post-intervention data collection using monthly facility service statistics from NHMIS registers tracked changes on ANC and IPTp coverage following G-ANC.

Results

43,328 women joined G-ANC in 104 facilities from March 2021-November 2022 (70% of all ANC1 clients). Number of ANC4 clients increased by >33% ($t<0.00$) and ANC8 by 40% ($t>0.000$). The number of ANC clients who received at least one dose of IPTp increased by 46% from 29,813 over this time (baseline) to 43,601 (endline) ($t=0.0175$). Coverage of at least three doses of IPTp increased from 8,149 (baseline) to 26,792 (endline) (229%) ($p<0.001$). As ANC attendance increased, the number of symptomatic women with fever tested for malaria rose 63%. Nasarawa State used these data to direct malaria in pregnancy (MIP) interventions.

Conclusions

Evaluation findings mirror trial results, at scale. Large increases were reported in IPTp coverage. Sustainability of G-ANC at scale is challenged by staff shortages, transfers of G-ANC trained providers, physical space constraints, and poor documentation. Jhpiego has developed tools and guidance and can provide assistance to partners and health systems on introducing, implementing and scaling up G-ANC and MIP interventions in malaria endemic countries.

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Assessing the effect of nurturing care intervention delivered by expert mothers in neonatal care units on caregiver-infant bonding and attachment: a longitudinal study in Kirehe, Rwinkwavu and Butaro hospitals, September 2022 to February 2023

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Keywords

Nurturing care, small and sick newborns, caregiver-infant bonding, attachment

Introduction

The Nurturing Care Framework (NCF) recommends interventions during the neonatal period. However, delivery models for nurturing care in neonatal care units (NCUs), particularly in low resources settings, are not yet available. In 2021, nurturing care intervention package to be delivered by expert mothers was developed based on the NCF, care for child development and Rwanda national protocols. We aimed to assess the effect of the nurturing care intervention provided in NCU by expert mothers on the caregiver-infant bonding and attachment.

Methods

A longitudinal study, including a cohort of newborns admitted in NCUs at Kirehe (Intervention site), Rwinkwavu and Butaro hospitals (control sites) between September 9, 2022 and February 24, 2023. Outcomes on caregiver-infant bonding and attachment were measured using the maternal postnatal attachment scale (MPAS) and maternal infant responsiveness instrument (MIRI), at NCU admission and discharge. We have assessed the effect of intervention on outcomes using linear mixed effects models for MPAS scores and linear regression analysis for the MIRI score.

Results

In total, 743 newborns were included in this study, with 427

(57.5%) and 316 (42.5%) from the intervention and control sites, respectively. After the adjustment for confounding factors, compared to the control group, the intervention group had an additional 0.91 (95% CI: 0.20, 1.62) increase in the quality of attachment-related MPAS score and 0.44 (95% CI: 0.06, 0.81) increase in the pleasure of interaction-related MPAS score from NCU admission to discharge. There was no significant difference in the patterns of change in the overall MPAS score and absence of hostility-related MPAS score between the two groups. The MIRI score significantly increased on average by 1.40 (95% CI: 0.36, 2.44) in the intervention compared to the control group.

Conclusions

Our findings indicate that the nurturing care interventions could contribute to improve maternal outcomes and thrive of newborns in NCUs in low-resource settings

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Combating low COVID 19 Vaccination Uptake through a myriad of Mobilisation Approaches: A case of Saving Lives and Livelihoods Project (Malawi), August 2022-July 2023

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Keywords

Covid-19, Vaccination, Africa CDC, CVC,

Introduction

Malawi like the rest of Africa, had significantly lagged behind in achieving the recommended 70% coverage of COVID 19 Vaccination. At inception only 21% of the eligible population nationally were fully immunized. Amref Health Africa through Africa CDC Saving Lives and Livelihoods (SLL) project supported Ministry of Health's efforts to achieve the target among eligible population by July 2023. key interventions included; support for COVID-19 vaccine delivery and Data Management.

Methods

Amref initially relied on volunteers to mobilise clients for COVID-19 vaccination which was low yielding, necessitating employment of myriad of strategies in markets, work places, prisons, football matches and schools; and door to door vaccinations to increase vaccination coverage. Data on KPIs were extracted from Africa CDC DHIS2, triangulated with National DHIS and analysed using frequencies, rates, and proportion.

Results

This mixed approach resulted in an increase of doses from 1,317 (October 2022) to 25,192 (March 2023)[1]. 39 %,12%,8% and 41% from door to door, outreach clinics; school outreaches and static clinics respectively. 52% (81,747) of 158,278 COVID-19 vaccines doses were administered to females leading to an increased vaccination coverage of 19% to 31% (Blantyre), 21% to 24% (Lilongwe) and 30% to 53% (Mzimba North)[2]. Overall, the project contributed 63% (158,278) of all doses (251,248)

administered across the 3 districts and contributed to improved national coverage from 21%-31% during the project period[3].

Conclusions

The program contributed significantly to improved COVID-19 vaccination and 10% growth towards the National coverage thus, targeted mobilisation strategies and provision of services closer to beneficiaries increases service utilisation as evidenced by the results.

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Assessment of Tunisia's Progress Towards Sustainable Development Goals in Health, 2022

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Keywords

Sustainable Development Goals, Global Progress, Health Indicators, Tunisia

Introduction

Tunisia's pursuit of sustainable development, rooted in the United Nations'(UN) global initiatives, has placed health, education, and women's empowerment at its core. By embracing the UN's 2030 agenda and incorporating it into its Five-Year Development Plan (2016-2020), Tunisia demonstrates its commitment to both national priorities and international goals. Yet, the extent of Tunisia's progress towards health-related

Sustainable Development Goals (SDGs) through measurable indicators remains to be explored comprehensively.

Methods

We assessed National Data from reputable sources to gauge Tunisia's progress in health-related SDGs. Data sources include "Monitoring health and health system performance in the Eastern Mediterranean Region: Core indicators and indicators on the health-related SDGs." Indicators were categorized based on attributes, yielding a comprehensive taxonomy that spans indicators of health status, healthcare resources, healthcare utilization, and socio-economic dimensions.

Results

Our study unveiled the intricate interplay between multiple SDGs (SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG16)and diverse health aspects. Aligning specific indicators with corresponding targets, we quantify Tunisia's progress both globally and domestically. Nearly 80% of assessed targets harmonize with Tunisia's Five-Year Development Plan, highlighting its strategic alignment with international objectives.

However, a notable gap emerges concerning health-related SDGs. While 60% of global targets have quantifiable objectives, merely 21% of Tunisia's targets share this attribute. Within the scope of target 3c, the quantified indicator being "Density and distribution of healthcare personnel per 10,000 inhabitants", 2018 national statistics revealed 13.1 physicians, 24.1 nurses and midwives, 0.5 dentists, and 2.3 pharmacists per 10,000 inhabitants.

Conclusions

Tunisia's proactive integration of SDGs within its Five-Year Development Plan underscores its dedication to sustainable development. Our study highlighted alignment between 80% of targets and Tunisia's plan. However, the gap in quantifiable health-related SDG targets calls refining national objectives and indicators. Bridging this divide will enhance progress tracking and solidify Tunisia's role as a sustainable development exemplar.

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Impact of Convenience on COVID -19 Vaccination Uptake; A study of Africa CDC Urgent Support Rapid Response Initiative in Kenya, May-June 2022

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Keywords

Covid-19, Vaccination, Africa CDC, Urgent Support, Rapid Result Initiative

Introduction

Vaccination is pivotal in overcoming the COVID-19 pandemic. Despite severe health and economic consequences of the pandemic, the vaccination curve in most countries has flattened sharply since vaccines became widely available. In response, governments around the globe have started programs to increase vaccination rates. In Kenya, Rapid Result Initiative (RRI) was instituted as part of Africa CDC urgent support mechanism to optimize COVID-19 vaccination uptake. At inception 38% of eligible population (33,000,000) had received 1st dose while 31% were fully immunized. This abstract highlights the impact of convenience on COVID-19 vaccination of eligible populations through outreaches/campaigns.

Methods

We conducted a descriptive retrospective study using program reports from May-June 2022. Data on KPIs were extracted from Africa CDC DHIS2 and triangulated with the National Chanjo Ke COVID-19 platform. Quantitative data was analyzed using frequencies, rates, and proportion.

Results

A total of 293,819 doses of Covid-19 vaccines were administered within May-June 2022, of which 250,685 (86%) was administered through outreaches/campaigns. National coverage increased from 31% - 34% while subnational coverages across supported counties increased as follows; Homabay (27% - 38%), Kajiado (29% - 34%), Kisii (30% - 36%), Kitui (17% -22%), and Nyamira 31% - 41%).

Conclusions

The RRI vaccine convenience strategy resulted to an improvement in COVID-19 Vaccination uptake, contributing 3% to the national coverage. We therefore recommend more investment in strategies that allow for proximity to vaccination centers, reduction in client waiting time and decreased transportation costs for optimal COVID-19 vaccine uptake.

Track 4: For Women by Women: Access to Adequate Healthcare for Young Girls and Women in Africa

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Factors associated with the uptake of Intermittent preventive treatment for malaria during pregnancy (IPTp) in Cameroun: an analysis of data from the latest Cameroon Demographic Health Survey, September 2020

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Keywords

Pregnancy, Antenatal care, malaria, Intermittent preventive treatment, Sulphadoxine-pyrimethamine, Cameroon

Introduction

Malaria in pregnancy is a major public health concern, leading to increased maternal and child mortality. Intermittent preventive treatment of malaria with Sulfadoxine-Pyrimethamine (IPTp-SP) is recommended by WHO and implemented in Cameroon to reduce the morbidity of Malaria in Pregnancy. This study aimed to assess the distribution and determinants of poor uptake of IPTp-SP (i.e., < 3 doses) among pregnant women in Cameroon.

Methods

We conducted a secondary analysis of data extracted from the Cameroon Demographic Health Survey conducted in 2018. Data were collected using a face-to-face administered questionnaire from mothers with at least one child under 5 years old, selected using a 2-stage stratified sampling process. We estimated the frequencies of mothers who received less than 3 doses of IPTp-SP. Multilevel logistic regression modeling was used to assess the associations between key suspected determinants and less than 3 doses of IPTp-SP exposure.

Results

Among 13,527 interviewed women, 5,528 (40.9%) met our selection criteria. In all, 845 (15.3%) women had not attended any Antenatal care (ANC) visit, 1,109 (20%) attended 1-3 visits, 3,379 (61.1%) attended 4-7 visits, and only 195 (3.5%) attended ≥ 8 visits. Moreover, 3,398 (61.5%, CI: 60.2-62.8) received less than 3 IPTp-SP doses. Predictors of poor uptake included maternal age below 26 years (aOR=1.17, CI: 1.01-1.35), residing in low malaria endemicity areas (aOR=1.26, CI: 1.00-1.58), residing in Sahelian regions (aOR=5.81, CI: 2.46-13.69), first ANC visit after third month of pregnancy (aOR=1.50, CI: 1.28-1.75), attendance to less than 4 ANC visits (aOR=1.30, CI: 1.08-1.57), and no healthcare professional attendance during prenatal period (aOR=2.59, CI: 1.72-3.93). Education level showed no significant association (aOR=1.10, CI: 0.90-1.32).

Conclusions

In Cameroon, only one-third of pregnant women receive optimal IPTp-SP doses. Uptake varies by region and maternal characteristics. Addressing determinants of low IPTp-SP coverage, like young maternal age and ANC access, is crucial.

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Strengthening advocacy to reduce frequent uptake of Emergency Contraception Pills (ECPs) among students in higher learning institutions

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Keywords

Emergency Contraceptive Pills (ECPs)
Contraceptives
Long Acting Reversible Contraceptives
Sexual Reproductive Health (SRH)

Introduction

The uptake of ECPs among students has been on the rise in the recent past due to high rates of irresponsible sexual behavior in the learning institutions. This behavior poses a great threat to their reproductive health. Teratogenic and ectopic pregnancies, delayed fertility have been linked to the frequent use of ECPs. This study therefore sought to identify the information gaps, and driving factors behind the use of contraceptives.

Research questions.

What are the contributory factors towards using ECPs?

What are the information awareness levels and perceptions among students about ECPs?

Methods

The cross-sectional study was conducted in Sigalagala National Polytechnique and Maseno University in Kenya. Voluntary and anonymous questionnaires were used alongside interviewing to collect data. The target population was female students who had been admitted in the institutions for at least one academic year. The participants were sampled randomly to achieve a sample of 200 from each of the institutions. The data was entered into an excel sheet, cleaned, analyzed then tabulated.

Results

In both of the two institutions, the study identified that 67% of the participants had used ECPs at least once, while 6% had used ECPs at least once every month in the past six months. The use of ECPs was due to the fear of conceiving and not STDs or side effects of the pills. The study identified that 59% of the participants were either misinformed or had insufficient information about ECPs, LARCs and other contraception methods.

Conclusions

High Prevalence and frequent use of ECP points to a widespread reliance on ECPs as a primary method of contraception among the student population. Inadequate Information about LARCs indicates an information gaps.

Going forward, contraception care should be intergrated into all health services provided to tertiary students. Female students should opt for LARCs and only use ECPs in real emergencies.

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Gender Disparities in COVID-19 Vaccination in Mbarara District,SouthWestern Uganda: Implications for Global Health Equity

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Keywords

Gender Disparities
Health Equity
COVID 19 Vaccine Distribution

Introduction

The COVID-19 pandemic has necessitated widespread vaccination to curb its devastating impact on global health. However, concerns have arisen over potential gender-based disparities in vaccine uptake, which could hinder efforts to achieve equitable vaccine distribution and control the pandemic. This study aimed to investigate gender disparities in COVID-19 vaccination rates and identify factors contributing to these differences, thereby informing public health interventions to promote global health equity.

Methods

Using a cross-sectional study design, we analyzed data from diverse sources, encompassing a sample size of 50,000 individuals eligible for COVID-19 vaccination.

Among the participants, 55% were male and 45% were female. Overall, the vaccination rate was 65%, with 32,500 individuals having received at least one vaccine dose.

.Results

Our analysis revealed a significant gender disparity in COVID-19 vaccination rates. Among males, 70% had received the vaccine, while only 60% of females had been vaccinated ($p < 0.05$, chi-square test).

It was also observed that in low-income communities, women's vaccination rates were approximately 15% lower than men's, and in regions with deeply ingrained gender norms, male vaccine acceptance lagged behind female acceptance by up to 20%.

This discrepancy raises concerns about equitable access to vaccination, potentially influenced by varying vaccine hesitancy levels and access to healthcare facilities between genders.

Conclusions

Findings reveal that gender inequality is associated with lower vaccination rates among certain populations. Women, particularly in marginalized and rural communities, face obstacles in accessing vaccines due to social, economic, and cultural barriers. Moreover, gender norms and roles can affect vaccine acceptance, with men being more hesitant in seeking vaccination due to perceived vulnerability and stigma. This ought to be addressed using a gender sensitive approach.

Addressing vaccine hesitancy and social cultural barriers emerged as key considerations.

Bridging the gender gap in COVID 19 vaccination contributes to building a more resilient and equitable public health system.

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Prevalence, trend and determinants of adolescent childbearing in Burundi: A multilevel analysis of the 1987 to 2016-17 Burundi Demographic and Health Surveys data.

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Keywords

Adolescent, childbearing, determinants, multilevel analysis, Burundi.

Introduction

Very little is known about factors influencing adolescent childbearing in Burundi despite its upward trend and perceived implications on the rapid population growth and ill-health of young mothers and their babies. To adress this gap, this study sought to examine the prevalence, trend and determinants of adolescent childbearing in Burundi.

Methods

Three weighted subsamples of 731, 2,359, and 3,859 adolescent girls aged 15-19 years extracted from the 1988, 2010 and 2016-17 Burundi Demographic and Health Survey(BDHS) databases respectively were used for descriptive and trend analyses. Both bivariable and multivariable two-level logistic regression analyses were performed to identify the main factors associated with adolescent childbearing using only the most recent BDHS data.

Results

The prevalence of adolescent childbearing increased from 5.9 % in 1987 to 8.3% in 2016/17. Factors such as adolescent girls aged 18-19 years old (aOR =5.85, p<0.001), adolescent illiteracy (aOR=4.18, p<0.001), living in poor communities (aOR=2.19, p= 0.042), early marriage (aOR = 9.28, p< 0.001), lack of knowledge of any contraceptive methods (aOR = 5.33, p= 0.010), and non-use of modern contraceptive methods (aOR = 24.48, p< 0.001) were associated with higher odds of adolescent childbearing. While factors such as living in the richest household index (aOR= 0.52, p=0.00), living in West region (aOR= 0.26, p= 0.027) or in South region (aOR= 0.31, p= 0.041) were associated with lower odds of adolescent childbearing.

Conclusions

Our study found an upward trend in adolescent childbearing prevalence and there were significant variations in the odds of adolescent childbearing by some individual and community-level factors. School-and community-based intervention programs aimed at promoting girls' education, improving socioeconomic status, knowledge and utilization of contraceptives and prevention of early marriage among adolescent girls is crucial to reduce adolescent childbearing in Burundi.

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Sexual and gender-based violence among adolescent girls and young women in refugee settlements in Northern Uganda; Prevalence, risk factors and response mechanisms.

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Keywords

(i) Gender based violence
(ii) Sexual Violence
(iii) Reproductive health
(iV) Humanitarian emergencies
(v) Adolescent girls and young

Introduction

Introduction/Background: Sexual and gender-based violence (SGBV) in humanitarian emergencies is a recognized global public health problem. Experiences of SGBV can be deeply traumatizing and have lifelong physical and psychological impacts on affected individuals. According to UNICEF, 97% of sexual violence cases in humanitarian emergencies from 2016-2020 were among adolescent girls and young women AGYW. This study set out to establish the prevalence and correlates of SGBV in refugee settlements and surrounding communities in northern Uganda.

Methods

Methods: We utilized a descriptive cross-sectional study design to assess SGBV prevalence and correlates among 801 adolescents and young women aged 13-24 years. Participants were identified through stratified random sampling in Palorinya Refugee Settlement and surrounding host communities. Data was collected by local research assistants using Open Data Kit Software on smart phones in June 2022. The data was analyzed in STATA V15.

Results

Results: Most of the respondents 85.7% (n=697) thought SGBV occurred in their settlement, and 13.6% (n=109) reported having experienced it themselves in the previous 12 months. Of those respondents who reported experiencing SGBV firsthand, 82% (n=90) did not report the incident to police or other authorities. The risk factors found to be significantly associated with SGBV experience in our multivariable model were: being female (APR=1.70, 95% CI: 1.08-2.70), having attained a vocational/tertiary education (APR=2.18, 95% CI: 1.02-4.69), being a Ugandan national (APR=2.20, 95% CI: 1.33-3.63), being in a polygamous marriage (APR=3.58, 95%CI: 1.86-6.89) and being married and divorced, widowed, or separated (APR=2.64, 95% CI: 1.53-4.55).

Conclusions

Conclusion: AGYW in humanitarian emergencies in Uganda remain at substantial risk for experiencing SGBV, with the majority of cases going unreported hence little/no intervention/response is done. Greater efforts should be placed on broad based all-inclusive local approaches to address SGBV challenge.

855

Psychosocial experiences with menstruation in relation to menstrual hygiene products in sub-Saharan Africa: a literature review using a systematic approach

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Keywords

menstruation
menstrual flow
menstrual hygiene management
menstrual products
psychosocial

Introduction

Menstruation is a physiological occurrence that can bare feelings of shame, fear and anxiety for many young menstruators. Adequate menstrual hygiene management includes the access to menstrual hygiene products, and many interventions and policies aim to tackle gaps in access. These gaps can contribute to a particularly distressful menstrual experience under impoverished and resource-poor conditions. As a key pillar to adequate menstrual hygiene management, the psychosocial impacts of using various menstrual materials need to be better understood in order for more informed provision of materials.

Methods

Nine databases were searched for studies to be included in the review of literature using a systematic approach. Ten qualitative and mixed-method studies were identified through the executed search strategy. The selected studies were critically appraised and findings were analysed through the textual narrative synthesis approach. Despite heterogeneity across included studies in aims and methods, findings where explicit connections were made between the use or non-use of a material and its associated psychosocial impact were included in analysis and synthesis.

Results

The synthesis of findings reveals that menstrual materials are a significant source of negative psychosocial outcomes during menstruation. Only one study explicitly measured for psychosocial impacts in relation to menstruation. Findings show that an interaction between menstrual material characteristics (application; washing; drying; disposal), broader cultural beliefs about menstruation (secret; unhygienic; magic) and infrastructural conditions (private space; washrooms; water access; waste management) mediates the psychosocial effects of the menstrual experience.

Conclusions

Menstruation research, policy and practice will benefit from assessing menstrual material-related interventions with a focus on the psychosocial impact on menstruators. The findings of this review reiterate the need for a holistic approach to dignified periods in resource-poor contexts, including in tackling negative beliefs and improving the infrastructure around flow management for menstruators.

916

Factors associated with management of pneumonia among children by Community Health Workers in Abim district, Uganda

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Keywords

VHT, CHEW, Pneumonia, Case Vignettes, Management of Pneumonia, ICCM

Introduction

Pneumonia is the 2nd leading cause of death in children under 5 years of age in Uganda. Pneumonia deaths could be prevented if VHTs knew how to manage pneumonia correctly. The objective of the study was to determine factors associated with management of pneumonia among under-five year children by VHTs in Abim district; results of the study would inform to what extent VHTs are managing Pneumonia cases in communities.

Methods

This was a cross sectional mixed methods study; data was collected from 374 VHTs. The proportion of VHTs that correctly manage pneumonia was determined. Modified Poisson regression was used to establish factors associated with management of pneumonia. Four (4) key informants' interviews with health workers of health centres II, III and five (5) FGDs with community members were conducted

Results

The study found that 15.51% of VHTs correctly manage children with pneumonia in the district as per the Sick Child Job Aid. The study found that educational level [Adj. PR 2.06; 95% CI: (1.18-3.61) p-value 0.011], having a VHT register [Adj. PR 0.54; 95% CI (0.30-0.98) p-value 0.041] and drug stock outs [Adj. PR 4.24; 95% CI (1.37-13.13) p-value 0.012] were significantly associated with VHT management of pneumonia. The qualitative component identified refresher training, equipment and supplies, trust, inability to manage pneumonia and support supervision as health facility and community factors influencing management of pneumonia among children by VHTs.

Conclusions

A low proportion of VHTs in the district manage children with pneumonia. Strategies to improve provision of VHT registers and drugs, community sensitisation, support supervision, refresher trainings and recruitment of educated individuals into the VHT structure are necessary to improve management of pneumonia

923

Health Related Quality of Life of HIV-positive Women on Antiretroviral Therapy follow-up in North Shewa Zone Public Hospitals, Central Ethiopia: Evidence from a cross-sectional study

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Keywords

HIV/AIDS, Antiretroviral Therapy, Quality of life, HIV-positive, Women

Introduction

Evidence revealed that there is a statistically significant gender difference in Health-related quality of life (HRQoL) among HIV-positive people on Antiretroviral therapy (ART). Consequently, HIV-positive women have low scores in all HRQoL domains than men. Despite this fact, previous studies in Ethiopia focused on general HIV-positive people and paid less attention to HIV-positive women. Therefore, this study was intended to measure HRQoL and associated factors among HIV-positive women on ART follow-up in north Shewa zone public hospitals, central Ethiopia.

Methods

An institution-based cross-sectional study was conducted from February 01-April 30, 2022. Four hundred twenty-six women on ART were included using a systematic random sampling technique. Face-to-face interviews and medical record reviews were used to collect data. Both bivariable and multiple linear regressions were computed to identify the factors associated with HRQoL. A p-value <0.05 was used to assert statistically significant variables in multiple linear regression analysis.

Results

The overall mean (SD) score of the HRQoL was 11.84 (2.44). And, 44.7% [95% CI: 40.3, 49.5] of the women have poor HRQoL. In multiple linear regression analysis, factors like depression (-= -0.35), Post-Traumatic Stress Disorder (PTSD) (-= -0.16), age (-= -0.07), rural residence (-= -0.52), and bedridden functional status (-= -1.02) were inversely associated with HRQoL. Oppositely, good treatment adherence (-= 0.46) was positively associated with overall HRQoL, keeping other factors constant.

Conclusions

This study reveals a high magnitude of poor HRQoL among HIV-positive women. Therefore, as HRQoL domains are comprehensive indicators of living status, healthcare service providers should be dedicated to screening and supporting HIV-positive women with poor HRQoL. Additionally, healthcare providers should also pay special attention to routine PTSD screening and management for HIV-positive women due to its detrimental effect on HRQoL.

928

Are midwives ready to provide quality evidence-based care after pre-service training? Curricula assessment in four countries - Benin, Malawi, Tanzania, and Uganda

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Keywords

Competencies, Curricula, Pre-service Education, Midwifery

Introduction

The Sustainable Development Goal 3.1.1 calls for a global maternal mortality ratio of less than 70 maternal deaths per 100 000 livebirths by 2030. Midwives when educated to the ICM standards play an essential role in activities related to all aspects linked to childbirth. Evidence suggests that while countries report relatively high levels of birth attendance by skilled health personnel, maternal and neonatal mortality have not decreased proportionately.

The aim of this review was to map pre-service training curricula for midwifery care providers providing antenatal, intrapartum, and postnatal care in the Action Leveraging Evidence to Reduce perinatal morTality and morbidity in sub-Saharan Africa (ALERT) project, conducted in Benin, Malawi, Tanzania, and Uganda, against the ICM Essential Competencies Framework.

Methods

We performed a mapping review of midwifery care providers' pre-service training curricula from different training institutions in the four study countries and mapped these against the ICM framework to assess whether these curricula included the minimum essential training components described in the ICM framework.

Results

Ten pre-service curricula were obtained and the assessment revealed that none of the curricula included all ICM competencies. Main gaps identified in all curricula related to women-centred care, inclusion of women in decision making, provision of care to women with unintended or mistimed pregnancy, fundamental human rights of individuals and evidence-based learning.

Conclusions

This review suggests there are skills, knowledge and behaviour gaps in pre-service training curricula for midwifery care providers in Benin, Malawi, Tanzania and Uganda when mapped to the ICM framework. These gaps are similar among the different training courses in each country. The review also draws attention to the plethora of professional titles and different pre-service training curricula within countries.

977

Human papilloma virus knowledge, perception, and willingness to receive Vaccination among female students in Addis Ababa University, Ethiopia, 2022:A cross sectional study

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Keywords

Human papilloma virus, female students, knowledge, perception, Addis Ababa University

Introduction

Human papilloma virus [HPV] is a highly prevalent sexually transmitted infection associated with cancer risks. Almost all cases of cervical cancer are caused by human papillomavirus. Effective human papilloma virus vaccines are recommended for females in the adolescent years, but uptake has been less than optimal

The objective of the study was to assess human papilloma virus knowledge, perception, and willingness to receive Vaccination among female students in Addis Ababa University, Ethiopia, 2022

Methods

WeInstitutional based cross sectional study was conducted from February to April 2022 at Addis Ababa University, Ethio-

pia. Study population encompasses female students of Addis Ababa University. Female students attending regular undergraduate programs,aged above 18 years were included in the study. A total of 398 female students recruited for this study and a multistage sampling technique was used to select study participants.The collected data was checked for completeness,coded,entered to Epi Data version 4.6 and analyzed using SPSS version 25. Bivariate and multivariate logistics regression analysis were used to determine the associations of variables.

Results

1. In this study 161(41%) of the students had good knowledge, 226(57.5) had more favorable perception regarding to HPV and its vaccine,six (1 .5%) of the students received the vaccine and 118(30%) of the respondents were willing to the vaccine. Year of study, having history of sexual intercourse, having family history of Vaccination and perception towards HPV and its vaccine were factors associated with students willingness to receive HpV vaccine.

Conclusions

Educational programs are required to aware female students in Ethiopia considering their poor knowledge of human papilloma virus and its vaccine. The inclusion of the HPV vaccine in the national immunization program that is in line with World health organization recommendations should be considered.

997

Awareness and practice of cervical cancer screening and vaccination among young female adults in a rural community in the Volta Region of Ghana.

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Keywords

Cervical cancer, Awareness, Practice, Cervical Cancer Screening

Introduction

Cervical cancer is the most frequent cancer among women in Ghana. Studies have reported low levels of cervical cancer screening among Ghanaian women. The consequence of this is that more women will be diagnosed at an advanced stage of the disease, which will lead to serious financial burdens, poor quality of life, a poor prognosis, and finally loss of life.

Study Objectives

1. To assess the level of awareness of cervical cancer screening and vaccination among young female adults.

2. To determine the proportion of young female adults who are willing to utilize screening services.

3. To determine the proportion of young female adults who have taken cervical cancer vaccinations.

Methods

A cross-sectional study design using the quantitative method was employed. The study was conducted in Hohoe Zongo, and included 200 young female adults (22–39 years old) who were selected from two health facilities using convenience sampling. Analysis was done using STATA version 14 software. Frequencies were used to determine awareness of cervical cancer, knowledge level, and willingness to screen. Pearson's chi-square test was performed to establish any relationship between awareness or practice and cervical cancer screening and vaccination.

Results

Out of the 200 respondents, 11.5% were aware of cervical cancer, this is less than half of what was reported in other studies. Knowledge about screening was low at 21.7%. Only 1 (4.3%) of them have ever screened for cervical cancer. Majority (95.7%) indicated that vaccination can prevent one from getting cervical cancer. None of the respondents has ever been vaccinated against HPV.

Conclusions

Low screening rates among the participants lead to advanced-stage cervical cancer, and treatments may lead to a financial burden on the individual. Hence, there is a need to intensify awareness creation about screening and vaccination to increase the uptake of screening.

1009

A statistical comparative analysis of changes in selected determinants of maternal mortality in Bangladesh and Nigeria from 1985 to 2020

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Keywords

Nigeria, Bangladesh, Maternal Mortality, Sociocultural Determinants

Introduction

Still recording an annual maternal mortality ratio (MMR) greater than 1000 deaths per 100,000 live births, Nigeria has only improved by about 18.4% in the past 40 years. Bangladesh reduced its MMR by 86% (from 907 to 123 deaths per 100,000 live births) in the same period. This study examines trends of MMR in Nigeria and Bangladesh and analyses the impact of changes in selected determinants on MMR in both countries between 1985 and 2020.

Methods

This study contains an ecological examination of both countries. The data is sourced from the Global Health Observatory data repository and the World Bank Open Data. Pearson correlation and linear regression tests were used to identify the strength and impact of the association between these determinants and MMR.

Results

Where a strong positive correlation was observed in Bangladesh (Pearson correlation = 0.71, p-value = 0.00028), there was a negative correlation between government health expenditure and MMR in Nigeria (Pearson correlation = -0.45, p-value = 0.04). Bangladesh recorded a strong positive correlation between the decline in adolescent fertility rates and MMR (Pearson correlation = 0.95, p-value = 2.2e-16). Female literacy rates and female secondary school enrollments were negatively correlated to MMR at Pearson correlations of -0.91 (p-value = 1.8e-16) and -0.98 (p-value = 2.2e-5) respectively. Linear regression tests revealed that every unit decline in adolescent fertility rates, female literacy rates and female secondary school enrollment averted 7.16, 13.21 and 11.95 deaths per 100,000 live births.

Conclusions

It can be empirically argued from the data, that increasing government expenditure on health alone is an unreliable predictor for a decline in MMR in a country. This is because there appears to be other sociocultural determinants that affect the health-seeking behaviour of mothers. The researcher recommends that policymakers in Nigeria adopt a multisectoral approach to the maternal mortality crisis.

1024

Evaluation of the adherence of healthcare workers to Prenatal care standards in the context of free care program in Burkina Faso

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Keywords

Adherence; Prenatal care; Free care; HCW; Burkina Faso

Introduction

To reduce maternal mortality, Burkina Faso has been offering free care to childbearing women since 2016. The free care program is aimed to increase the access of care to this vulnerable population. However, is the care offered free of charge of good quality? Based on the paucity of previous evaluation of the competences of healthcare workers (HCWs) during prenatal care in the free care program period, we would like to assess the adherence level of HCWs to the prenatal care tasks in the context of free care.

Methods

We conducted a cross-sectional study from July 2020 to March 2021 in 40 primary healthcare centers and two district hospitals of Hauts-Bassins region in Burkina Faso. This study included 901 pregnant women in order of attendance at the selected health facilities. Data were collected through interviews after the prenatal consultation using a tablet. Univariate and bivariate analysis were performed using STATA software 14.

Results

The overall adherence of healthcare workers to Prenatal care standards was 74.65 (72.57-76.59). Most women (899) reported that they have been weighted during the prenatal care consultation (99.77% (99.47-100.00)). The tetanus vaccine was also administered to 893 pregnant women (99.11% (98.50 – 99.73)). Also, the womb of 893 pregnant women was palpated (99.11% (98.50 – 99.73)). However, only 112 pregnant women were screened for syphilis (12.43% (10.27 – 14.59)). No statistically significant difference was found in the overall adhesion of healthcare workers to prenatal standard care according to the residence, the type of healthcare center and the pregnancy age.

Conclusions

The majority of prenatal care tasks were performed in almost all the pregnant women despite the increase of HCW workload in the context of free care indicating that the care offered free of cost is able to be of good quality. The syphilis screening was rare because its cost was not covered.

1056

Predicting Contraception Preference of Married Adolescent and Young Women -Using Data Mining Techniques

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Keywords

Data Mining, Modern Contraception Method Prediction, Random Forest, Adolescent and Young Women, OTF.

Introduction

The objective of this research was to employ Data Mining techniques to examine the factors influencing the adoption of contraceptive methods among married adolescents and young women residing in Ethiopia's remote regions, specifically in SNNP, Sidama, and Oromiya. We aimed to identify the most effective predictive algorithm for modeling these determinants and subsequently integrate this model into a digital counseling application. The primary motivation behind incorporating this predictive model into the app was to assist healthcare providers in delivering targeted counseling to new clients. This innovative approach promises to significantly reduce time spent on individual counseling sessions, thereby enabling the project to reach and serve a larger number of clients within a defined time frame.

Methods

This research utilized a dataset involving married adolescents and Young Women (YW), spanning from April 2021 to October 2022 , from the 'Owning Their Future' (OTF) project, overseen by Population Services Ethiopia (PSI-E). Within this project, clients underwent a Smart Start (SS) counseling approach, and the variables employed in this research were derived from the demographic data gathered during the SS counseling sessions.

This research employed an experimental research design coupled with a data mining methodology. The dataset consisted of 75,404 instances and encompassed 34 attributes. Additionally, feature selection methods were applied to identify the factors influencing contraceptive preference and the prediction of specific modern contraceptive choices.

Results

Consequently, employing a Random Forest classifier with a 10-fold cross-validation approach yielded a higher accuracy rate of 83.2%. Out of the 34 data elements considered, 9 were identified as significant contributors to clients' preferences for modern contraception methods.

Conclusions

This research underscores the potential of data mining techniques in the field of reproductive health and counseling. By harnessing predictive modeling, we aim to enhance the efficiency of counseling services and contribute to better family planning outcomes in undeserved regions.

1206

Les déterminants du recours à l'automédication dans la santé de la reproduction chez l'adolescente et la jeune fille dans la ville de Brazzaville (République du Congo), mars 2023.

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Keywords

Facteurs, automédication, santé de la reproduction , Brazzaville

Introduction

L'enquête démographique et de santé réalisée en 2012 au Congo avait révélé que les jeunes filles ont recours à l'automédication dans des cas d'avortements, d'infections génitales, de contraception. Cependant, cette pratique présente d'énormes risques. L'objectif de l'étude est de déterminer les facteurs influençant le recours à l'automédication dans la santé de la reproduction. Elle contribuera à réduire la prévalence de l'automédication et les risques auxquels les jeunes filles sont exposées.

Methods

L'étude repose sur une enquête réalisée dans la commune de Djiri, à Brazzaville (Congo), en mars 2023 auprès des jeunes filles de 15-29 ans. Les participantes à l'étude avaient toutes déjà rencontré des problèmes de santé reproductive et avaient eu recours à l'automédication. L'échantillonnage raisonnée a été utilisé pour former l'échantillon de 200 jeunes filles. Les données ont été analysées à l'aide des logiciels SPSS 25, Excel. Un modèle de régression logistique binaire a été utilisé pour l'identification des déterminants du recours à l'automédication.

Results

Les résultats ont révélé que les principaux facteurs du recours à l'automédication en santé reproductive chez les femmes de 15-29 ans à Brazzaville (Congo) étaient le niveau de vie, le

manque de services de santé reproductive à proximité, le niveau d'éducation, les facteurs culturels. Les médicaments issus des pharmacies de rue ont été utilisés dans 77 % des cas, le recours à l'automédication était plus important dans le traitement des infections génitales (48 %).

Conclusions

La présente étude a montré que le niveau de vie, le manque de services de santé, les facteurs culturels, le niveau d'éducation étaient les principaux facteurs du recours à l'automédication en santé reproductive. La sensibilisation aux risques liés à l'automédication, l'amélioration de l'accès aux services de santé reproductive sont cruciaux pour réduire sa prévalence et améliorer la santé sexuelle des jeunes filles.

1240

Unintended Pregnancy and Its Correlates among Sexually Active Married Women of Reproductive Age in a Metropolitan City in Nigeria

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Keywords

Contraceptive access, Reproductive health, Unintended pregnancy, Women's autonomy.

Introduction

Unintended pregnancy in marriage (UPM) indicates poor contraceptive access among married women. This study aimed to assess the prevalence of UPM, and its correlates among sexually active married women in Ibadan, Nigeria.

Methods

This was a community-based cross-sectional study of 739 sexually active married women aged 15-49 years selected using a systematic random sampling technique from five enumeration areas in three local government areas in Ibadan in October 2022. Data were collected using an electronic-based interviewer-administered questionnaire. The outcome variable "Unintended pregnancy in marriage" was determined by a positive response to the question "Since you've been married, have you ever had an unintended pregnancy?" Data were analyzed using descriptive statistics and a logistic regression model (-0.05).

Results

The mean age of the women was 35.8±7.4 years. The prevalence of UPM was 21.8%. Compared to 44 (13.6%) women with ≤2 children, 117 (28.2%) women with more children have had UPM (p=<0.001). Also, 27 (51.9%) women whose husbands solely made decisions on child limits have had UPM compared to 134 (19.5%) women jointly involved in such decisions (p=<0.001). Similarly, 42 (38.9%) women whose husbands solely defined their social relationships have had UPM compared to 119 (18.9%) women involved in such decision-making (p=<0.001). Women with >2 children were three times more likely to have had UPM (aOR=2.963, p=<0.001). Women whose husbands solely made decisions on their social relationships were nearly three times more likely to have had UPM (aOR=2.517, p=<0.001). Also, women whose husbands solely decided the number of childbirths were four times more likely to have had UPM (aOR=4.231, p=<0.001).

Conclusions

Women's participation in decision-making on childbirth and social relationships can be effective in preventing unintended pregnancy. Women's participation in decision-making should be strengthened by governmental and non-governmental organizations to reduce unintended pregnancy rates in Ibadan, Nigeria.

1422

Intégration de la médecine traditionnelle dans l'offre des soins au sein du système de santé : étude transversale de la pratique de la phytothérapie utéro-tonique et myorelaxante chez les accouchées au centre de médecine traditionnelle CSIUM dans la ville de Lubumbashi, RD Congo

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Keywords

Pratique Phytothérapie, parturientes, Lubumbashi, RD Congo, Médecine traditionnelle organisée et intégrée

Introduction

Presque tous les pays du monde sont intéressés par l'étude des plantes médicinales du fait que le règne végétal constitue une source importante et indispensable des médicaments. L'objectif de cette étude était de dresser un état des lieux de la pratique de la médecine traditionnelle par la phytothérapie organisée et intégrée en RD Congo, dans la prise en charge des parturientes dans la ville de Lubumbashi.

Methods

Nous avons mené une étude descriptive transversale. Pendant huit mois (en 2019), nous avons inclus toutes les parturientes reçues à la maternité au centre de médecine traditionnelle CSIUM, dans la ville de Lubumbashi. Nous avons collecté les données grâce à l'interview structurée (questionnaire) et l'analyse documentaire. L'étude a été autorisée par le comité éthique. Nous avons analysé les données grâce à l'Épinfo 7. 3.2.6.

Results

Nous avons inclus 227 accouchées d'âge moyen de 26 ans (écart-type : 7 ans). En général, 80% ont été soumises à des soins à base des plantes utéro-toniques et myorelaxante associant deux à cinq plantes. Les combinaisons de deux plantes étaient les plus couramment utilisées (57,3%). Aucun décès maternel n'a été enregistré. Le poids moyen des nouveau-nés était de 3182 ± 546g ;10% des nouveau-nés étaient macrosomes. La mortinatalité était de 70 pour 1000 nouveau-nés. Les plantes utilisées étaient par ordre d'importance ; Acacia Macrotyrsa, Phyllanthus muellerianus, Annona Senegalensis, Pseudo Lachnostilis maprouneifolia, Strychnos Innocua et Hibiscus SP.

Conclusions

Cette étude montre l'intégration progressive de la médecine traditionnelle organisée et intégrée dans la prise en charge des femmes enceintes. Parce que le recours aux plantes médicinales en automédication est une pratique courante à Lubumbashi, il est important de renforcer l'identification des telles plantes et évaluer leur pouvoir phytochimique afin de déterminer leur efficacité dans la prise en charge versus innocuité sur la santé humaine.

1428

Factors and reasons associated with adolescent pregnancies among girls (15-19) in Korogwe rural district, Tanga region: A mixed method study.

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Keywords

Adolescence pregnancy, Factors, Prevalence, Reasons, Perception, Tanzania

Introduction

Tanzania has higher adolescent pregnancies than other East African countries girls aged 15-19 years. Adolescent pregnancy has significant negative health, psychological, and socioeconomic impacts on girls. Its Occurrence varies between regions in Tanzania. Government has put multi-sectorial interventions. There is limited information on current levels, and in-depth understanding of adolescents and communities' perceptions, and reasons for adolescent pregnancies.

Objective: To determine factors and explore reasons associated with pregnancies among girls aged 15-19 in Korogwe District Council, Tanga region, Tanzania.

Methods

Community-based, cross-sectional study using a mixed method design, was conducted from 1st – 30th June 2023. Face-to-face interviews using questionnaires were conducted with adolescent girls aged (15-19). In the qualitative part, FDGs were conducted with adolescent boys and girls, parents with adolescent girls, teachers, and village leaders, and In-depth interviews were conducted with pregnant adolescents, the district education officer, and the social welfare officer. SPSS was used to analyze quantitative data and thematic framework analysis of qualitative data.

Results

A total of 418 adolescent girls were enrolled, their mean age was 17.0 (SD 1.4). The prevalence of adolescent pregnancy was 16%. In logistic regression, higher odds for adolescent pregnancies were age 18-19 [AOR= 4.43, 95% CI; (2.68-7.32)], never been to school [AOR=4.93, 95% CI; (3.37-7.20)], ever been in union [AOR=13.35, 95% CI; (8.64-20.65], and low knowledge about FP methods [AOR=6.92 (3.04-13.00)]. The qualitative part, many community members had a negative perception of adolescent pregnancies. Most adolescents had negative attitudes and perceptions of modern contraceptive use, especially before first birth. Poverty, poor parental guidance, and long distance to school were the main reasons for adolescent pregnancies.

Conclusions

Adolescent pregnancy remains a problem in Korogwe District. Interventions to keep girls at school, address distance to schools, prevent child marriages, address contraceptive methods, and improve parent-to-child communication on sexual & reproductive health issues are needed

1436

Unmasking Hidden Threats: Urogenital Schistosomiasis and Female Genital Schistosomiasis among Adolescents in Anambra State, Nigeria, Africa

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Keywords

Urogenital schistosomiasis, Female genital schistosomiasis, Adolescents, Sexual and reproductive health, Evidence-based interventions.

Introduction

The study assessed urogenital and female genital schistosomiasis among Anambra State adolescents, aiming for improved health and community empowerment. Building on the 2013 Mass Drug Administration, it explored sustainable disease control strategies.

Methods

From January to May 2023, 470 adolescents (10-19 years) in co-educational secondary schools joined the cross-sectional research. Ethical clearance, community engagement, and stratified sampling were key. Haematuria and Schistosoma haematobium presence were checked in urine. Colposcopy assessed severe female cases. Risks and associations were examined using questionnaires and regression analysis.

Results

The overall urogenital schistosomiasis (UgS) prevalence stood at 14.5%, with an average infection intensity of 5.25 eggs/10 ml urine. While females exhibited a slightly higher prevalence at 16.1%, this was not statistically significant. Males demonstrated greater odds of infection (OR: 1.332; 95% CI: 0.791 – 2.244; p: 0.280). 7.5% females displayed heavy infections. Colposcopy revealed female genital schistosomiasis (FGS) lesions within the cervicovaginal canal. Age 10-14 years experienced the highest prevalence and significantly elevated odds of infection (OR: 1.720; 95% CI: 1.012 – 2.923; p: 0.045). Those without haematuria, had higher odds of infection (OR: 2.924; 95% CI: 1.731 – 4.941; p: 0.000). Direct water contact correlated with infection (OR: 2.601; 95% CI: 1.007 - 6.716; p: 0.048), supported by co-infection cases of cercarial dermatitis. Other risk factors include awareness, deworming history and comfort discussing genital health issues.

Conclusions

The study found a high prevalence of UgS, mostly in females, and lack of treatment for excluded adolescents. Coinfections of FGS with Trichomonas vaginalis were also observed. Comprehensive strategies are recommended because knowledge gaps increase infection odds. In conclusion, the research unveils the current state of UgS and FGS, laying the groundwork for evidence-based interventions that could revolutionize public health strategies. The insights gained can drive substantial improvements in reproductive health, water sanitation, and healthcare practices, ultimately leading to healthier and more empowered communities.

1503

Evaluation de la complétude des prestations des soins de santé maternelle et néonatale au cours du continuum à l'Hôpital Général de Référence Kenya/ Lubumbashi, RD Congo

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Keywords

Evaluation, complétude, prestations, continuum.

Introduction

Le continuum des soins est un moyen de réduction du fardeau d'un demi-million de décès maternels, de 4 millions de décès néonatals et de 6 millions d'enfants qui meurent entre 1 mois et 59 mois. L'objectif de l'étude était d'évaluer la complétude des prestations des soins de santé de la mère et du nouveau-né au cours du continuum en vue d'améliorer la prise en charge du couple mère-enfant.

Methods

C'est une étude transversale descriptive réalisée grâce à l'analyse documentaire (partogrammes et fiches de CPN) des femmes ayant accouché au sein de la maternité de l'Hôpital Général de Référence Kenya de Lubumbashi. Nous avons inclus les dossiers de toutes les femmes qui avaient accouché dans cet hôpital entre janvier et décembre 2017 et ayant un partogramme et une fiche de CPN (422 dossiers sur un total de 585). Grace à un check liste, nous avons déterminé toutes les interventions reçues par les femmes le long du continuum mère-nouveau-né. Nous avons analysé les données grâce au logiciel IBM SPSS statistics23.

Results

L'étude montre que 81,5 % des femmes ont accompli 4 CPN et 17,8% d'entre elles 2 à 3 visites. 74,2 % de ces femmes avaient effectué leur première visite au deuxième trimestre et 23,2 % au premier trimestre. Aucun dossier de la CPN n'avait ni l'identité, ni l'anamnèse complètes contre 31,3 % de dossiers de la maternité ; 86,3 % des femmes n'avaient pas bénéficié d'un examen obstétrical complet à leur première CPN et 76,8 % à leur troisième CPN.

Conclusions

Certaines prestations des soins de santé de la mère et du nouveau-né au cours du continuum n'étaient pas complètes et/ou l'étaient partiellement. Cet état de choses ne peut permettre une bonne PEC du couple mère-enfant. D'où, une formation des prestataires est nécessaire.

1566

Chlamydia trachomatis IgG1 and IgG3 Responses in Women in Cameroon with Secondary Infertility

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Keywords

chlamydia, antibody, seroprevalence, secondary infertility

Introduction

Chlamydia trachomatis (CT) infection remains highly prevalent worldwide, especially in Africa. Infertility is a major health concern among women in sub-Saharan Africa. The attributable fraction of chlamydia to secondary infertility in women is poorly understood. The objective of this study was to determine if the presence and/or magnitude of CT-specific antibodies (anti-CT IgG1 and IgG3 responses) were associated with secondary infertility.

Methods

142 women with secondary infertility (cases) and 262 pregnant women with no history of infertility (controls) were enrolled. CT antibodies were measured using CT elementary body (EB) ELISA on 1:32 diluted serum samples ran in triplicate. Alkaline phosphatase–labeled mouse antihuman IgG1 and IgG3 were used to detect anti-CT IgG1 and IgG3 responses, respectively. A sample was considered positive for anti-CT IgG1 and IgG3 if their OD405 values were>0.35 and >0.1, respectively. Analyses were conducted on Stata and statistical significance was set at $P < 0.05$.

Results

Overall CT seropositivity (seropositive for either anti-CT IgG1 or IgG3) was detected in 372 (92.1%) of women: 364 (90.1%) were IgG1 seropositive and 278 (68.8%) were IgG3 seropositive.CT seropositivity was associated with a younger age of sexual debut (79.6% of CT seropositive participants were age <20 years at sexual debut. Amongst the cases and controls IgG1 seropositivity (91.6% vs 89.3%, P = 0.47), IgG3 seropositivity (64.1% vs 71.4%, P = 0.13), or magnitude of the IgG1 (median OD405 1.319 vs 1.176, P = 0.34) or IgG3 (median

OD405 0.350 vs. 0.351, P = 0.69) responses were similar in the two groups.

Conclusions

The high CT seroprevalence in the participants reflects high lifetime CT exposure in sexually active women in Cameroon. The data strongly suggest that many of these women had CT infections when they were younger. Hence CT testing in younger women may be beneficial in preventing reproductive tract diseases

1580

Decentralizing and optimizing early detection of breast cancer in Sidama, Oromia and Amhara regions in Ethiopia, 2022

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Keywords

breast cancer, screening, decentralization, primary care, clinical breast exam

Introduction

Breast cancer is the most prevalent cancer in Ethiopia, accounting for ~21% of the national burden. In 2018, the government of Ethiopia decentralized breast cancer treatment to 18 hospitals around the country. However, a concerning 70% of women are diagnosed at late stages, when their prognosis is poor. This program aims to enhance early detection of breast cancer by strengthening primary-level clinical screening and diagnostic.

Methods

Three regional hospitals and 52 referring primary level facilities were selected for the program. A 2-week workshop trained 207 medical staff (doctors, nurses, midwives, etc.) in breast cancer care and clinical breast examination (CBE), a cost-effective screening method recommended by WHO in resource-constrained settings. All women above 20 years-old visiting primary health facilities are offered a CBE. Concurrently, diagnostic capacity was assessed at 16 primary hospitals. In each of the 12 primary hospitals where pathology services were not available, a doctor received training on tissue sampling with fine needle aspiration (FNA) and patient referral. Samples are sent to the regional hospital leveraging the existing transportation system in 1 week or less, where they are assessed by a trained pathologist.

Results

Over the first 1.5 year, 17,988 CBE had been performed in hospitals that previously didn't conduct regular breast cancer screening, leading to 692 women referred for further tests and 33 confirmed cases (~0.2%) of cancer. Close to a quarter (8) of confirmed cases came from the 96 FNA samples collected at the primary hospitals. The average lab processing time of FNA sample dropped from 5 to 3 days.

Conclusions

Decentralizing CBE and FNA to primary hospitals offer women timely access to essential diagnostic services. The program success prompted expansion into two additional regions. To increase the screening yield, a modified age threshold of 30 years-old is being piloted.

1953

Perceptions of women and young girls with symptoms related to Female Genital Schistosomiasis in S. haematobium infested areas. Effects on awareness and treatment seeking behaviors: the case of remote Island communities around the Mape Dam in Cameroon.

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Keywords

Women Health, Sexual and reproductive health, schistosomiasis

Introduction

Female Genital Schistosomiasis (FGS) is a form of schistosoma hematobuim characterized by the presence of schistosome eggs in the upper/lower genital tract of females. This has far reaching consequences on the female's sexual and reproductive health, opening her to such risks as HIV/AIDS and Cervical cancer. Though studies on the existence of FGS have been on the up-rise in sub-Saharan Africa, Cameroon remains under-researched, pointing towards a possible prevalence, where women suffer in silence without adequate channels for FGS management put through by the State. We aim thus to establish a prevalence of FGS in our case study sites, and understand the lived experiences and challenges faced by women as an effect of the disease.

Methods

Using mixed methods with a descriptive cross-sectional approach, 304 women and young girls between 5 and 69 years old were selected for gynecological examinations after urine filtration and microscopy for diagnosing urogenital schistosomiasis. 67 girls older than 14 and non-virgins from this group were invited for gynecological examination to diagnose FGS. Community members in addition to these females, were probed through in-depth interviews to understand local perceptions around the symptoms of FGS and lived experiences.

Results

34 females were positive for FGS (proportion: 58.6%; 95% CI: 45.8–70.4), with younger girls showing higher FGS prevalence, and older women not shedding eggs showing a pattern for cervical lesions from earlier infection. Due to ignorance, women faced social stigma and exclusion for their symptoms, affecting their mental health and treatment seeking behavior, and leaving them open to risks of HIV/AIDS

Conclusions

Evidence from our research on existence of FGS and local perceptions and behaviors, can be key steps towards drawing the attention of programs involved in NTDs control in Cameroon towards making a firm step in policies and intervention plans to control FGS.

2044

HIV Positive Female Sex Workers-led Intervention to Prevent HIV Transmission in Oyo State, Nigeria: Implications for Programming, August, 2021-September, 2022

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Keywords

Female sex worker; HIV positive; Condom; Sexually transmitted infection

Introduction

Female Sex Workers (FSWs) are expected to have unlimited access to condoms, HIV-prevention information, and sexual health services to decrease their risk of contracting HIV. HIV-positive FSWs could play a significant role by involving them directly in prevention programmes. This paper presents the implications of HIV-positive female sex workers-led intervention to prevent HIV transmission in Oyo State, Nigeria

Methods

This intervention was designed to reduce HIV transmission among HIV positive FSWs. A total of 30 HIV positive FSWs were selected and trained as peer educators for 7 days on sexually transmitted infections (STIs). The trainees in turn trained at least ten FSWs in their brothel through microteaching and using information, education, and communication materials. Participants were also provided with condoms, lubricants, and HIV counselling and testing. Data were entered into Microsoft Excel, and frequencies were generated.

Results

Participants' knowledge of safe sex practises increased from 21.0% at baseline to 89.9% at 12 months. At baseline, 73.8% reported engaging in unprotected sex in the last 3 months, and 48.2% had never used lubricant. At 9 months, only 13.9% reported engaging in unprotected sex, and 89.5% used a condom during the last sexual intercourse. Prior to the intervention, 65.9% of the participants had a negative perception that condoms were to be used only by non-regular customers, and only 3.9% consistently used condoms with their boyfriend. At 6 months, 78.4% reported regular use of lubricant, and at 12 months, 92.3% reported consistent use of condoms. A total of 89 participants were referred for STI treatment, and an HIV prevalence of 4.7% was recorded in this intervention.

Conclusions

The intervention showed an increase in behavioural modifications among the participants. Involving HIV positive sex workers in prevention programmes could be encouraged as a way of ensuring the success of similar programmes in the future.

2161

Level of Completion and Determinants of Maternity Continuum of Care among ever-married women using Somalia Health and Demographic Survey 2020.

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Keywords

Continuum of Care, Maternity, Determinants, Somalia Health and Demographic Survey

Introduction

Somalia is continuing its retrieval from three decades of underdevelopment, political instability, civil unrest, and pro-

tracted humanitarian crises. Somalia has one of the worst maternal conditions in the world. For instance, the maternal mortality ratio is 692 per 100,000 live births. Extra efforts are needed to improve maternal health. Our study aims to find out the level of maternity Continuum of Care (CoC) and identify various factors affecting the CoC in Somalia.

Methods

The study used data from Somalia Health and Demographic Survey 2020. We restricted our analysis to ever-married women who had a live birth in the five years preceding the survey (n = 2432). Completion of the continuum of maternity care was the outcome variable for this study. It was constructed into a binary variable with complete coded as 1 and incomplete coded as 0. We categorized it into three models: ANC4+ as the first model, ANC4+ & SBA as the second model, and ANC4+ & SBA & PNC as the third model. Variance Inflation Factor was used to test the presence of collinearity between the independent variables. Bivariate and multivariate logistic regression were performed using STATA 18.

Results

Of the total 2432 mothers, only 14 of them achieved the complete CoC (ANC4+, SBA, and PNC within 48 hours). About 78.1% of the mothers did not attend any of the three CoC services. The result shows that the level of women's education, living in urban areas, working, exposure to mass media, and wealth quintiles have positively associated with the use of ANC, SBA, PNC, and receiving the complete CoC.

Conclusions

Maternal health care utilization decreases as they progress from ANC4+ to PNC utilization. The government and partners should design and implement strategies to improve maternal healthcare utilization specific to rural and nomads, less educated, not working, low income, and less power in decision-making.

2183

The effect of audio-recorded program on knowledge and self-reported practices of menstruation and hygiene among visually impaired young girls in Rwanda

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Keywords

Audio recorded program, Effect, Knowledge, Menstrual hygiene, Practice, Visually impaired girls

Introduction

Menstrual hygiene practices among visually impaired young girls are a significant public health concern in Rwanda due to cultural taboos and beliefs. Limited knowledge about menstruation leads to inadequate hygiene practices, risk of cervical cancer, urinary tract infections, and reduced quality of life. Previous research has not sufficiently addressed the menstrual hygiene needs of girls with visual impairments who rely on daily assistance for personal hygiene. This research aimed to assess the effect of audio-recorded programs on knowledge and self-reported practices of menstrual hygiene among visually impaired young girls in Rwanda.

Methods

A pre-post intervention study involving 93 visually impaired adolescent girls from four secondary schools using convenience sampling was conducted. A pretested tool was used to measure participants' knowledge and practices about menstruation and menstrual hygiene. Paired t-tests were used to analyze changes in knowledge and practice scores. In addition, a qualitative approach using FGD was used to evaluate the perceived effect of the audio-recorded program. Data were analyzed by Dodoose software using thematic analysis.

Results

The majority of participants (67.7%) were enrolled in secondary education and lived in rural areas (76.3%), with the biggest proportion (43%) being between the ages of 16 and 20. The young visually impaired girls' mean knowledge score about menstruation increased significantly ($p<0.001$) from 3.62 prior to the audio-recorded program implementation to 7.55 following the program. Similarly, prior to the program, the overall mean practice score was 7.30; after the program, it significantly (<0.001) increased to 9.03. Besides, four themes emerged from the qualitative research, including improved knowledge and abilities, boosted confidence, the convenience of audio, and the perceived need to increase audio effectiveness.

Conclusions

The study underscores the success of audio-recorded interventions and suggests integrating it into school curricula and health education programs to enhance menstrual hygiene

knowledge and practices among visually impaired girls in Rwanda.

2222

Group-based mental health and parenting support for adolescent girls and young women who are mothers in Kenya: a mixed-methods evaluation

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Keywords

parenting, group-based, mental-health, nutrition, child-development

Introduction

Adolescent girls and young women (AGYW) 15–24 years who are mothers are vulnerable to depression and their children are at risk of poor development. However, they do not receive mental health or parenting support as part of routine health or HIV services. A group-based package with 14 sessions was designed for AGYW to take care of their wellbeing, manage interpersonal relationships at home, co-parent effectively, and promote good nutrition and responsive, stimulating interactions with their children. Significant others were invited to attend select sessions. The package was piloted between September 2022 and January 2023 with 105 AGYW in six groups in Homabay County.

Methods

Quantitative data on attendance and parenting knowledge was collected using structured questionnaires. Depressive symptoms were assessed using the Patient Health Questionnaire 9. Interpersonal relationships with male partners were evaluated using a relationship support scale. Qualitative data on acceptability, feasibility, and relevance was collected through focus group discussions with AGYW and interviews with group facilitators; with descriptive statistical and thematic analysis conducted on the qualitative data.

Results

The parenting package was acceptable to AGYW and group facilitators and considered feasible to implement in community-based groups. 69 AGYW attended 11 or more sessions. 87 AGYW reported gaining new parenting skills, with knowledge scores around child development and nutrition increasing by over 70 percent. Participation in the parenting program was associated with a reduction in moderate depressive symptoms from 33 to 23 percent, as well as a nearly one-third reduction in negative relationships with male partners. However, only 20 AGYW had significant others in attendance.

Conclusions

A community-based group parenting package can reduce depressive symptoms, increase parenting knowledge, and improve interpersonal relationships. Implementing this package at scale within existing community groups can provide important support to AGYW that is usually not provided by the formal health system.

2246

Assessment of the relevance and effectiveness of the use of the motorcycle ambulances and traditional birth attendants in the fight against maternal mortality in the northern and eastern regions of Cameroon, June 2022

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Keywords

Moto-ambulance, Traditional birth attendants, accessibility, maternal health

Introduction

Maternal health remains a major concern in Cameroon, particularly in the Adamawa, East, Far North and North regions. In 2018 the cumulative rate of women who did not receive any antenatal care in these regions was 89.5%. In order to improve access to maternal health services, the strategy of using Moto-Ambulances and Traditional Birth Attendants for referral and counter-referral was implemented in 11 districts of these regions, from 2018 to 2021. This study aimed to assess the effectiveness and relevance of this strategy in increasing skilled-attended births in Cameroon.

Methods

A mixed methodology was adopted. A quantitative approach to measure effectiveness, based on a review of reference registers and reproductive health/related districts reports. To

appreciate the relevance, the qualitative approach combined a series of individual interviews with a sample of stakeholders involved in the project, and focus-groups discussions with beneficiaries.

Results

Between 2018 and 2021, the number of cases referred to health facilities rose from 20 to 1909 for Moto-Ambulances, and from 121 to 2256 for Traditional Birth Attendants. Deliveries increased by 92% in health facilities, and decreased by 15.7% in the community. furthermore, the number of obstetrical complications referred increased by 36%. Stakeholders and beneficiaries were very appreciative of the project and recognized the significant improvement in the monitoring of maternal health in the community. Most of them described the strategy as an efficient response to an urgent need. Nevertheless, the counter-referral system still has weaknesses that penalize the continuity of care and services.

Conclusions

Results clearly show the relevance and effectiveness of the strategy. This strategy has also demonstrated its complementarity with other existing strategies such as "health cheques" and "performance-based financing". Extending a combination of these strategies can be seen as an opportunity to effectively combat maternal mortality, while strengthening the healthcare system.

2259

Maternal Health Advocacy at Sub-national Levels: Insights from a Landscape Analysis Conducted in Niger State, Nigeria, in February 2023.

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Keywords

Advocacy, landscape analysis, maternal health, reproductive health, nurse/midwife availability, Maternal, Child, and Perinatal Death Surveillance and Response (MPCDSR)

Introduction

According to the 'What Women Want' and "Why Are Women Dying While Giving Birth in Nigeria?" reports, women and midwives' health priorities include Water, Sanitation, and Hygiene (WASH), family planning (FP) services, and maternal death accountability. Based on these, a maternal healthcare advocacy project was conceptualised to improve budgetary allocation for WASH facilities in primary healthcare centres (PHCs) and FP services, establish community Maternal, Perinatal and Child Death Surveillance and Response (MPCDSR) committees and ensure availability of nurses/midwives in the 274 focal PHCs in Niger state, Nigeria. A landscape analysis was conducted to inform the advocacy strategy with the core objective of determining trends and identifying drivers of the recommendations.

Methods

Mixed methods research was conducted, including a desk review of administrative and implementation data at state and local government levels, stratified random and purposive sampling of site and study population selection respectively, 6 key informant interviews and 18 focus group discussions. Data was analyzed based on objectives. Ethical approval was obtained.

Results

Except for 2021, WASH has had no budget allocations from 2019 to 2023 and the coordinating body for WASH did not include the health agency. Although there have been increases in the FP budget from 2018 to 2023, there has been zero releases since 2021. Also, while a State MPCDSR committee exists, there are no community committees even with the inclusion of community MPCDSR coordination in the State's Annual Operational Plan. The 71 nurses/midwives employed for the state's 274 focal PHCs were inadequate and not equitably distributed.

Conclusions

Based on findings, advocacy was targeted at improving FP releases, establishing functional community MPCDSR committees, and recruiting and equitably distributing midwives to ensure availability of at least one midwife per focal PHC. Assessing the political and structural landscape at subnational levels is imperative for effective maternal health advocacy.

2265

Examining Factors Associated with Short and Long Birth Intervals among Pregnant Mothers Enrolled in a Nationwide Rwandan Birth Cohort Study: A Nested Cross-Sectional Study.

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Keywords

Birth Spacing, short birth Interval, long birth interval, inadequate birth interval, family planning, Rwanda

Introduction

The study of inadequate birth intervals (IBI)—the time interval between the start of the index pregnancy and the preceding live birth of less than 24 months (short birth intervals, SBI) or greater than 59 months (long birth intervals, LBI)—is essential for understanding and mitigating the associated risks to adverse maternal and child health outcomes. The objective of this study was to examine the prevalence and factors contributing to the increasing trend of inadequate birth intervals among pregnant mothers in Rwanda.

Methods

A nested cross-sectional study using data from an ongoing Rwandan Birth Cohort study, focusing on 866 pregnant women from six selected districts. Descriptive statistics, cross-tabulation analysis, and multinomial regression were used to assess IBI prevalence and associated factors.

Results

The prevalence of IBI was 64.2%, with LBI at 40.2% and SBI at 24%, respectively. A higher risk of SBI was associated with older age at first pregnancy (RRR = 1.19; 95% CI: 1.1-1.3), a greater number of children (RRR = 1.352; 95% CI: 1.018-1.796), and no contraceptive use (RRR = 2.527; 95% CI: 1.580-4.040). Older age at the current pregnancy, no history of visiting traditional healers, and no history of heavy bleeding during delivery were linked to a decreased risk of SBI. Factors such as maternal age at the current pregnancy (RRR = 1.234; 95% CI: 1.165-1.307), younger age at first pregnancy (RRR = 0.811; 95% CI: 0.760-0.864), fewer children (RRR = 0.535; 95% CI: 0.411-0.697), no house ownership (RRR = 1.536; 95% CI: 1.021-2.311), and a history of folate intake (RRR = 0.549; 95% CI: 0.326-0.927) were associated with an increased risk of LBI.

Conclusions

The study highlighted a significant prevalence of inadequate birth intervals associated with various demographic and socioeconomic factors. Integrating these into family planning interventions can promote optimal birth intervals and better maternal-child health.

2267

Improving access to sexual reproductive health services for women and girls in Northern Bahr El Ghazel State, South Sudan

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Keywords

School health clubs, ASRH, Gender based violence, sexual reproductive health

Introduction

Access to equitable, quality vital sexual reproductive health (SRH) services are essential contribution to adolescent health which in turn determines their employment prediction, economic wellbeing and ability to reach their potential. In 2020 Malaria Consortium started a four-year gender, equity and social inclusion (GESI) programme in Northern-Bahr-el-Ghazal, South Sudan to address barriers that prevent women, girls and marginalized communities accessing health services.

Methods

The GESI programme provides training, resources, and supervision to enable health workers to deliver high-quality SRH services. Training includes topics such as gender-based-violence (GBV) and SRH rights, and communication skills to support inclusion including sign language. Health workers are supported with training, guidelines and job aids, supervision, clinical management of rape (CMR), sexually-transmitted-infection and family planning drugs, supplies, equipment and dignity materials (soap, underwear, and sanitary pads) for anyone seeking family-planning and counselling services. Programme supports existing community structures, church, women leaders and other key community-members to become GESI champions. Champions are trained and supported to promote and facilitate community dialogues on SRH rights, GBV prevention and promotion of CMR services. Champions establish female school health clubs to facilitate sessions among students, teachers and parents on GBV and related issues, and SRH rights.

Results

Programme reached 4558 persons with SRH rights messages. This resulted increased awareness of GBV prevention and how to access SRH services among 1124 school-aged children. Community-members, especially women and leaders, also identified perpetrators in community, reported them to authorities, and supported survivors to access the services, resulted in 198 GBV-cases being treated.

Conclusions

Using existing structures and already established community leaders to advocate SRH increases sustainability and easy ac-

ceptance of the programme. By increasing awareness of SRH rights with the community and training and resourcing health workers to provide SRH services the programme has provided conducive environment for women and girls to access these essential services.

2269

Mixed-methods Advocacy for Improving Maternal Healthcare in Nigeria: Learnings from Sub-national Level Implementation in Niger State, 2023.

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Keywords

Maternal health, community maternal, perinatal and child death surveillance and response (MPCDSR) committees, nurse/midwife availability and retention.

Introduction

Globally, over 800 women die daily due to preventable complications in pregnancy and childbirth. Nigeria has a maternal mortality rate of 512 deaths per 100,000 live births, which is higher than the global target of less than 70 per 100,000 live-births. Specifically, in Niger state, 1 in 95 women die during pregnancy and childbirth. Studies have shown that despite an increase in antenatal visits, fewer women deliver in health facilities in Niger State, similar to insights from the "Why Are Women Dying While Giving Birth in Nigeria" report, which showed that most maternal deaths occurred at home.

The advocacy project was conceptualised with the aim of advocating for improved availability of nurses/midwives in the state's 274 focal primary healthcare centres (PHC) and the functionality of community maternal, perinatal and child death surveillance and response (MPCDSR) committees.

Methods

From Q1 to Q3 of 2023, a mix of bottom-top and top-bottom advocacy approaches were utilised to advance the advocacy objectives, including landscaping, stakeholder mapping and engagement, media advocacy, community engagement and a policy dialogue.

Results

Advocacy wins included an increment of nurses/midwives from 71 at baseline to 596 nurses/midwives (88% increase) equitably distributed with at least one nurse/midwife in each PHC and at least one supportive supervision visit conducted in 100% of the PHCs, to ensure retention. Although community MPCDSR committees are yet to be set up due to delays from transitions in the government post the electoral season, significant structural changes (including giving more autonomy to the coordinating body) have occurred and this will improve finance availability for setting up functional committees.

Conclusions

Mixed advocacy – top-bottom/bottom-up – approaches are effective for achieving and sustaining maternal health advocacy wins at the sub-national level.

2273

Enhancing access to quality treatment for Pre-Cancerous Lesions in Kenya: The impact of post-training mentorship in Thermal Ablation and LEEP procedures.

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Keywords

Pre-Cancerous Lesions, Post training mentorship, Thermal Ablation, Quality Care

Introduction

Thermal Ablation (TA) and Loop Electrosurgical Excision Procedure (LEEP) have emerged as promising technologies offering innovative solutions for managing Pre-Cancerous Lesions (PCLs) - both, offering minimally invasive techniques to eliminate abnormal cervical tissues. This study highlights the importance of post-training mentorship and follow-up, emphasizing their role in optimizing access and treatment outcomes.

Against a backdrop of facility treatment capacity coverage of 2% and PCL treatment rates at 6%, the Ministry of Health (MOH) identified an urgent need for enhancement. MOH's strategy involved training Service Providers (SP's) and equipping facilities across 25 counties with TA and LEEP devices. While technical knowledge is crucial, the ability to accurately identify lesions and prompt decision making offering appropriate treatment options, in addition, offering post-treatment care is equally vital. Mentorship emerged as a cornerstone for success in the access for quality treatment for women.

Methods

Mentorship initiatives reached 2,197 SPs spanning across 900 facilities in the 25 target counties. Master trainers guided SPs in mentorship centres, focusing on refining and retaining procedural techniques ensuring personalized care. Tools like mentorship logbooks and hands-on training sessions were instrumental in pinpointing areas for enhancement.

Results

Post-mentorship, the ability of SPs to correctly identify PCLs surged from an initial 20% to over 70%. Facilities offering PCL treatment experienced a remarkable growth, from a mere 2% (214/3,200) to 33% (1,064/3,200), reflecting a 31% increase in coverage. Similarly, the coverage for women with PCL accessing treatment grew from 6% to a significant 34% after the mentorship phase. Mentorship and follow-up promises to further amplify these results.

Conclusions

Continuous mentorship emerges as a game-changer, enriching skills, ensuring tailored care, and adeptly addressing post-procedure challenges. While TA and LEEP showcase promising safety profiles, potential complications necessitate a prepared healthcare workforce. Embedding mentorship within the training matrix promises superior PCL care, fostering patient well-being and oncological advancements.

2278

Integrated Interventions to reduce Patient Loss to Follow-Up after HPV-Positive test results: A Case Study from Rwanda

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Keywords
Cervical cancer
Patient tracking
Follow-up

Introduction

Cervical cancer is a major public health problem for women in Rwanda, it is the 2nd most frequent in women with an incidence of 1229 new cases and mortality of 829 according to the 2020 Globocan estimates. Despite the availability of effective screening and treatment options, women who test positive for human papillomavirus the leading cause of cervical cancer, are lost to follow-up, resulting in poor outcomes. These abstract aims to highlight the importance of integrated interventions and strategies to reduce lost to follow-up after HPV-positive screening results.

Methods

Methodology: The study involved a comparative analysis of secondary data from 2620 HPV-positive women identified in 2021 in the Gasabo district, against 688 HPV-positive patients in 2022 within the same district during a study that employed integrated patient navigation strategies including utilization of electronic data systems, patient navigators and active engagement of community health workers.

Results

The results showed that in comparison to 58% of HPV-positive patients who missed Triage in the 2021 group, only 10% were lost to follow up during the study where integrated patient tracking interventions had been employed. Patient navigators played a pivotal role by actively tracking and making appointment calls, supported by a robust electronic system that provided timely reminders. Additionally, community engagement emerged as a crucial factor in reconnecting with patients lost to follow-up.

Conclusions

The results advocate for the widespread adoption of integrated interventions to address the issue of patient loss to follow-up post HPV-positive screening. Key recommendations include targeted outreach to high-risk populations, enhanced patient education, implementation of patient navigation tracking systems, and the strengthening of community engagement efforts. Scaling up these strategies holds the promise of improved patient outcomes and a reduction in the burden of cervical cancer in Rwanda population.

2296

Correlates of parental consent to human papillomavirus vaccine uptake by their adolescent daughters in Zambia: Application of the health belief model

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Keywords

human papillomavirus vaccination; knowledge; socio-economic status; cervical cancer screening; HPV vaccine, sub-Saharan Africa

Introduction

Parental consent for adolescent human papillomavirus (HPV) vaccine uptake is important. However, parental refusal is prevalent. Therefore, this study aimed to understand factors associated with parental consent for their adolescent daughter's HPV vaccination.

Methods

A cross-sectional study was conducted in Lusaka, Zambia, between September and October 2021. We recruited parents from different social settings. Health belief model (HBM) was used as a guiding framework for data collection and analysis. The means and standard deviations, or median and interquartile ranges, were used as appropriate to summarise continuous variables. Simple and multiple logistic regression models were fitted with robust estimations of standard errors. The odds ratios are presented with a 95% CI. Mediation analysis was conducted using a generalised structural equation model.

Results

The study enrolled 400 parents, with a mean age of 45.7 years [95% CI,44.3–47.1]. Two hundred and fifteen (53.8%) parents reported consenting to their daughters' HPV vaccination, and their daughters received it. None of the HBM construct scores showed an independent association with parental consent. Higher, compared to lower wealth index (AOR;2.32, 95% CI: 1.29–4.16), knowing someone with genital warts (AOR = 2.23, 95 CI: 1.04–4.76), cervical cancer screening uptake (AOR = 1.93, 95% CI: 1.03–3.62) were associated with increased odds of parental consent.

Conclusions

This study highlights factors influencing parental consent for their daughters' HPV vaccination.

Ongoing sensitisation programs are important to improve their decision-making. Raising community awareness about the role of HPV vaccination in preventing cervical cancer, among parents of low socio-economic status, should be prioritised to improve future programming and uptake. Equitable access to the HPV vaccine is essential to reducing the gap between the rich and the poor. Further, health education on the relationship between HPV and cervical cancer and the preventive role of HPV vaccination should be integrated into the screening programs.

2310

GENDER DIFFERENCES IN PROFESSIONAL ATTAINMENT AMONG PRIMARY HEALTHCARE WORKERS IN NIGERIA

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Keywords

human resources for health, women leadership in health, primary health care, gender gap, career attainment

Introduction

A well-trained, adequately skilled, motivated health workforce is required to drive the journey toward universal health coverage. Feelings of being valued, which is influenced by career progression and access to training opportunities, are determinants of health worker motivation. Studies have shown that gender differences in career attainment among healthcare workers have led to the under-representation of women in leadership positions. Addressing inequities in career development opportunities is crucial for fostering gender parity and enabling women's leadership within the healthcare sector. This study sought to understand how gender influences career attainment among primary healthcare workers (PHC) in Nigeria.

Methods

We conducted a cross-sectional survey to profile human resources for health among PHC workers in Gombe and Lagos states in 2021. We measured career attainments among healthcare workers using their present grade level and attendance at any professional training. A multiple linear regression model was used to examine the influence of gender on career attainment, controlling for the length of years in service and qualifications of healthcare workers identified as possible confounders.

Results

Data for 4182 primary healthcare workers comprising 3159 (%) females and 1023 (%) males was obtained. The regression model accounted for 31.1% of the variation in career

attainments and showed that gender is a significant predictor (- = -1.16: /t/=-12.26; p<0.001) of career attainment of PHC workers. On average, females have a 1.15 times higher level of attainments than their male counterparts.

Conclusions

Our study found significant gender-based disparities in career attainment among primary healthcare workers in Nigeria, even when accounting for experience and qualifications. Considering our findings, policymakers should create mentorship and leadership development programs in these states to sustain the gain of women leadership in primary healthcare in Gombe and Lagos states.

2319

BRIDGING THE GAP FOR IMPROVED HEALTHCARE ACCESS FOR WOMEN AND GIRLS: AFRICAN LEADHERS, A CAMPAIGN FOR GENDER EQUITY

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Keywords

Women; healthcare; access; leadership; policy; advocacy

Introduction

Roughly 28 years post the 1995 Beijing Declaration on gender equality, women still encounter notable healthcare disparities like inequitable access to healthcare services and underrepresentation of women in decision-making spaces. Thus, the African LeadHERs campaign promotes women and girls' presence in leadership and public platforms. Its goal is to empower diverse women to actively engage in decision-making for improved public health.

Methods

Under the umbrella of the campaign, Speak Up Africa and partners, between 2021 and 2023, have launched four initiatives aiming at amplifying women and girls' voices and leadership to advocate for equitable health access and outcomes.

- "Voix EssentiELLEs", an initiative to enable the participation of women and girls in decision-making platforms for improved health outcomes (2021-ongoing)
- "Women Innovators Incubator" empowers female health entrepreneurs, fostering scientific innovation and entrepreneurial skills for better health access and outcomes (2021- ongoing).
- "African Women in Digital Health", a movement to strengthen the commitment and leadership of women in digital health in Africa (2022-ongoing).
- "Teaming Up: African LeadHERs meet BAL4HER", a mentorship program to advance gender equity and women's leadership in the African sports industry, and further collaborative efforts in fighting neglected tropical diseases (2023-ongoing).

Results

Thus far, the implementation of these initiatives has yielded the following results:

- 3 Voix EssentiELLEs joined decision-making platforms in Burkina Faso
- 3 women awardees received 5'000 USD each to develop their health innovations
- 1 collaborative platform of the Africa CDC Digital Transformation Strategy was launched to create a network of African women in digital health addressing access disparities
- 6 young women were paired with seasoned mentors to enhance their leadership skills in advocating for policies and resources improving women's health.

Conclusions

As these programs progress, they are set to narrow the healthcare gender gap by increasing women's involvement in decision-making that directly impacts their access to quality care.

2334

Impact of Sexual, Reproductive Health Rights and Gender Based Violence training on adolescents in Neno, Malawi – September 2022 – April 2023.

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Keywords

Sexual and Reproductive Health Rights, Gender Based Violence, Adolescents and Training,

Introduction

Training adolescents in sexual, reproductive health rights (SRHR) and gender based violence (GBV) helps them to form a firm foundation for their future risks which forms as part of their developmental growth which has the potential to have societal benefits. In Neno, we introduced Skills Bwalo La Achinyamata (Skills BLA) and skills Girl Camp where adolescents are trained for eight months. We assessed the impact of these interventions on adolescents in Neno District.

Methods

Cohort study was conducted and implemented before and after study tests to assess the impact of the training within the community. We assessed the pre and post-test containing 20 items covering attitudes, communication and knowledge about SRHR and GBV. Pretest was administered to 420 randomly enrolled adolescents and after the intervention post test was administered to 403 adolescents as others withdrew. We computed t-test statistics using Stata to assess whether the training had the intended impact.

Results

The overall positive change in attitudes, communications and knowledge about SRHR and GBV was 27% where males represented 27% and females 26%. We registered an 85% change in communication skills including reporting of SGBV where males represented 115% and females 59%, 26% in knowledge of SRHR and GBV, and 24% change in attitudes and beliefs regarding gender norms where males represented 26% and females 22%. We found a significant overall improvement after comparing pre and posttest ($t=10.74;p<0.001$). Among males, we observed a statistical difference between pre and posttest ($t=10.22;p<0.001$), similarly among female ($t= 10.12;p<0.001$).

Conclusions

The training under this intervention was successful as the knowledge, attitude as well as communication changed positively. Adoption of this intervention has the potential to increase knowledge on SRHR and GBV minimizing the associated risks.

2511

Barriers to provision and uptake of copper intrauterine devices at primary health care facilities in two districts (Ilala and Dodoma) in Tanzania.

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Keywords

contraception, family planning, intrauterine device, long-acting reversible contraceptives

Introduction

Unmet need for contraception is high across Tanzania. Awareness of long-acting methods like copper intrauterine device (IUD) is high (>67%) but uptake is only 2.6% of the national method mix, leading to challenges such as provider skills-attrition and overstock/expiring stock. More evidence is needed about the barriers to provision and uptake of IUD.

Methods

Study sites were 20 public primary healthcare (PHC) facilities in two districts (Ilala and Dodoma, Tanzania). Twenty in-depth interviews with healthcare providers and 10 focus groups discussions with women currently using/intending to use contraception (N=58) were conducted. Qualitative data was coded/analysed thematically using Dedoose.

Results

Provider perspectives

Providers felt copper IUD's non-hormonal nature was appealing to women but also confirmed low uptake of IUD. Challenges included: some colleagues having insufficient confidence/skills to provide IUD independently; insufficient staffing leading to task-shifting and time-pressures on counselling; struggling to reassure women about concerns; and lack of sufficient equipment/job aids. Providers stressed the importance of time and staffing to support good counselling to reassure women about IUDs.

Client perspectives:

Among the issues discussed, peer testimonials about side-effects, misconceptions that these impacted health/fertility, lack of male support for family-planning. Generally, women's

awareness of copper IUD was limited to the name 'Kitanzi' and high level knowledge about the IUD's position in the uterus, plus a range of concerns (e.g. the positioning of IUD in the uterus requiring 'measuring' a partner's penis, side-effects impacting future fertility or health, pain and/or privacy concerns about insertion, 'losing' the threads). Women echoed the importance of good counselling on IUDs to reassure them about concerns.

Conclusions

Barriers to copper IUD provision at PHC-level are complex, including an interplay between supply and demand-side factors. Building provider skills/confidence in counselling could break the cycle to reassure women sufficiently to use IUD.

2574

Awareness, perception and challenges on accessing services for Fistula victims: Experience from Lake Zone, Tanzania

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Keywords

Awareness, perception, healthcare access, Obstetric Fistula (OF), Fistula victims

Introduction

Obstetric Fistula (OF) affects millions of women globally, with Tanzania experiencing 3,000 new cases each year and only 50% accessing treatment. The treatment backlog remains substantial, primarily due to barriers such as financial constraints, stigma, misconceptions, and geographical distance to repair centers. The correlation between delayed treatment seeking and community misconceptions about fistula is evident, as inaccurate information often leads to stigma and delayed care.

Methods

A qualitative cross-sectional study was conducted in eight districts/councils of the Mwanza region, Tanzania. Purposive sampling was used to administer 14 Key Informant Interviews (KIIs) to Fistula Ambassadors and local government officials. Additionally, nine focus group discussions (FGDs) were conducted, involving men and women aged 18 to 72 years, with eight participants per session. Data were analyzed using Nvivo 10 software.

Results

Most FGD participants were unfamiliar with the term "Fistula," but they recognized the symptoms and related features of the condition. The lack of awareness was reflected in a quote from one participant

"I happened to see a woman in our village who after delivery developed urine incontinence frankly speaking I was completely unaware of the condition until when she was sent to Bugando hospital and was confirmed a fistula case" FGD, Participant, Buchosa.

Fistula ambassadors residing within these communities reported similar challenges regarding the availability of health services. Economic hardship and poverty among families of fistula victims were identified as major obstacles during KIIs and FGDs.

Conclusions

Awareness of Obstetric Fistula symptoms was evident, but misconceptions regarding its causes persisted. Financial constraints hindered healthcare access due to expenses like transportation, accommodation and treatment. Prioritizing education and awareness campaigns for women with low education levels is crucial. Livelihood initiatives for economic empowerment can alleviate the financial burden. Addressing misconceptions, improving healthcare access, and providing socio-economic support are vital to reducing Obstetric Fistula prevalence in Tanzania.

2591

Training programmes for Community Health Workers (CHWs) improves obstetric fistula outcomes in developing countries: A Scoping Review, July 2023

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Keywords

Community health workers; Obstetric fistula; Maternal mortality; Developing Countries; Obstetric care; Women

Introduction

Obstetric fistula is a leading cause of maternal morbidity in developing countries and has severe consequences for women's quality of life. Obstetric fistula is often due to lack of access to essential and comprehensive obstetric health care services. This review aims at mapping evidence that supports the utilization of Community Health Workers (CHWs) in reducing the incidence of obstetric fistulae in developing countries.

Methods

A scoping search was executed on PubMed, Cochrane Library, Google Scholar, Africa Journal Online (AJOL) and African Index Medicus (AIM). A manual examination of reference lists from eligible articles was conducted to ensure inclusion of all relevant studies. The search was conducted in July 2023, and limited to studies published in English language between 2010 to 2023.

Results

Five studies included in the final analysis demonstrated that training programmes for CHWs were effective in increasing knowledge and facilitating early screening for identification and referral of women with obstetric fistula. For instance, in Niger, CHWs were trained to identify and evacuate women in labour, give education, and gather data on pregnancies, deliveries, and deaths. The intervention significantly reduced maternal and perinatal mortality and reduced the occurrence of fistula from seven in the first six-months of the study to zero cases in the subsequent 24-months. Also, in Ethiopia, CHWs were trained on emergency obstetric care practices due to a lack of human resources. Over the 3-year intervention period, there was a reduction in maternal mortality and morbidity with resultant increase in the number of in-hospital deliveries, thereby reducing the occurrence of fistula presenting to the hospital from 48 to 12 cases.

Conclusions

Where human resources are deficient, CHWs are a plausible human resource capacity that can be utilized to facilitate early detection, triaging, and referral of obstetric fistula cases in developing countries

2602

Effect of Demand creation Pre-exposure prophylaxis (PrEP) uptake among adolescents and young people (AYP), an experience from USAID Action HIV project in Kasama District Northern Province

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Keywords

Pre-exposure prophylaxis (PrEP), adolescents, and young people

Introduction

Partnering with the MOH, the USAID Action-HIV Program drives HIV initiatives in Luapula, Muchinga, and Northern provinces. The core objective is enhancing AYPs' pre-exposure prophylaxis access, reducing HIV transmission. The 2023 Zambia consolidated treatment guidelines underscore a surge in new HIV infections among AYPs, disproportionately affecting females over males.

Methods

Between April 2022 and June 2023, we worked to enhance Pre-Exposure Prophylaxis (PrEP) adoption. Health workers received PrEP delivery training, extended hours, and weekend services to accommodate high-risk youth. Creating demand involved outreach in churches, radio programs, and visiting brothels. AYPs underwent HIV testing and comprehensive counseling before starting PrEP, promoting informed decisions and adherence.

Results

Between April 2022 and June 2023, a total of 7,797 individuals underwent screening for PrEP. Out of these, 7,109 were deemed eligible for PrEP initiation, and subsequently, 4,370 individuals-initiated PrEP, with 1,340 (31%) being AYP, 44% males and 56% females. The AYP proportion increased from 24% (June 2022) to 34% (March 2023). Adolescent girls and young women (AGYW) had higher PrEP initiation rates compared to adolescent boys and young men (ABYM). AGYW ranged from 30% to 37%, while ABYM ranged from 19% to 27%. Conversely, The Young adolescent (15-19) represented 22%, while the old adolescent (20-24) represented 78% of the total AYP. Awareness campaigns such as billboards and posters, engaging peer educators, religious and traditional leaders, truck stops, youth friendly spaces in health facilities, recreation centers, schools, and brothels contributed to increased PrEP uptake. Maternal and child health services also sensitized pregnant and breastfeeding AGYW about PrEP.

Conclusions

Targeting at-risk youth with counseling is vital for HIV prevention. Youth-friendly clinics and health talks improve PrEP access through information and guidance. Radio talks, outreach, extended hours, and advocacy raise awareness and expand PrEP access. Empowering young people with knowledge enables informed decisions about their sexual health.

2603

What Factors influence the Utilisation of Malaria Preventive Services during Pregnancy in Primary Healthcare Facilities in Ile-Ife, Nigeria: Insights from a mixed methods study (2023)

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Keywords

Malaria preventive services, utilisation, Nigeria, intermittent treatment in pregnancy.

Introduction

Malaria poses considerable risk to pregnant mothers and their unborn babies. Despite the proven effectiveness of long-lasting insecticide nets (LLINs) and intermittent preventive treatment in pregnancy (IPTp-SP) in preventing malaria during pregnancy, their use is hindered by some health system challenges. This study assessed knowledge, utilisation and factors associated with utilisation of malaria preventive services during pregnancy in primary healthcare facilities in Ile-Ife, Nigeria

Methods

The study was a cross-sectional descriptive survey that employed mixed methods. A total of 200 pregnant women were recruited for the quantitative survey. Four KIIs and four FGDs were conducted. Quantitative data were analysed using Statistical Package for Social Sciences (SPSS) version 20, while qualitative data were analysed using thematic analysis. P value less than 0.05 was considered statistically significant.

Results

About one-third (68; 34%) of pregnant women had good knowledge of malaria preventive measures during pregnancy. The majority (125; 62.5%) of the respondents owned long-lasting insecticide nets (LLINs), with 95 (47.5%) of them sleeping under LLIN the night before the survey. Factors associated with utilisation of LLIN include age of respondents and gravidity. About 50.8% took one IPTp-SP dose; 7% had ≥3 doses.. Factors associated with utilisation of IPTp-SP include knowledge of malaria preventive service, gravidity and occupation ($p<0.05$). From the qualitative study, factors identified to influence utilisation of malaria preventive services include stock-out of LLINs and IPTp-SP, lack of money, poor knowledge, spouse's decision, perceived adverse effects of IPTp and LLINs, and poor ANC attendance.

Conclusions

Both knowledge and utilisation of malaria preventive services were low among pregnant women. Stock-out of malaria preventive commodities and personal factors such as age and gravidity influenced service utilization. There is the need to ensure free IPTp and LLIN availability during ANC visits, while also promoting women's engagement. This will reduce malaria burden and improve maternal-fetal health outcomes

2676

Person-centered care during childbirth among mothers who gave birth at health facilities in sub-Saharan Africa: systematic review and meta-analysis

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Keywords

Person-centered care, Maternity care, Respectful care, Health facilities, Sub-Saharan Africa, Systematic review, Meta-analysis

Introduction

Person-centered care is a key component of strategies to improve responsive and respectful delivery of maternity care during childbirth. Ensuring personalized women's preferences, needs, and values to guide evidence-based clinical decisions during childbirth increases client satisfaction and institutional delivery. This systematic review and meta-analysis determined the pooled magnitude of person-centered care during childbirth at health facilities in sub-Saharan Africa.

Methods

Literature was retrieved from CINAHL, EMBASE, Google Scholar, PubMed, Scopus, and Web of Science databases.

The Joanna Briggs Institute's critical appraisal tool for prevalence studies were used. A pooled statistical meta-analysis was conducted using STATA Version 17.0. The heterogeneity and publication bias were assessed using the I2 statistics and Egger's test. The random effect model was used to estimate the summary prevalence and the corresponding 95% confidence interval (CI) of person-centered care during childbirth. The review protocol has been registered in PROSPERO number CRD42022348756. The PRISMA flow chart was used to show the number of articles identified, included, and excluded with justifications described.

Results

Twelve studies with a total of 11, 108 study participants were included. The pooled results showed 61.74% of person-centered care during childbirth. Among the study participants, 67% reported providers never introduced themselves. Only 41% of women reported that providers never asked permission before performing medical procedures and they did not received explanations on medications they were given. The pooled prevalence of communication and autonomy, dignity and respect, and respectful care during childbirth were 49.5%, 79.37%, and 61% respectively.

Conclusions

Person-centered care during childbirth at health facilities in sub-Saharan Africa was low. This calls countries in sub-Saharan Africa for action remove the barriers and promote facilitators to person-centered maternity care. Health systems must design and innovate scalable strategies to improve caregivers core competence in respectful and dignified care, evidence-based communication and autonomy, and supportive care items.

2684

Increasing women access to health care services in a male dominated society: A case of Southern province of Zambia

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Keywords

Gender, accessibility, empowerment, engagement, health care services

Introduction

The gender-based socioeconomic and sociocultural practices across the country, specifically in southern province both at the individual and community level affect women's health-seeking behaviour. More women who reside in rural areas are more likely to face challenges of accessing health care compared with urban residents. Inadequate basic infrastructure such as transport in rural areas explains these challenges for women. The country has been addressing this issue through high impact intervention programs including women empowerment by women for women

Methods

Focus group discussions (FGD) and awareness meetings were conducted in Kalomo and Zimba districts as part of the comprehensive assessment of women accessing health care services. Using the Integrated People Centered Health Care Services (IPCHCS) approach, 4 FGD involving 8 rural women in each district and monthly advocacy meetings with key stakeholders were conducted. The discussions were held during quarter 4, 2022 and quarter 1, 2023 to ascertain the challenges faced by rural women in accessing health services and to advocate for increased access to health care.

Results

The engagement of community members and addressing socio-cultural gender roles increased participation of women in decision making through increased number of women reporting GBV cases to health facilities. To sustain this gain, communities identified and legitimatized "model families" to counsel and encourage women to access health care. Constant engagements was appreciated through improved collaboration among stakeholders including men and women

Conclusions

Addressing the gender and socio-cultural aspects of the problem is as vital as dealing with the availability of health care services especially for women. Factors such as access to income, legal rights, social status, and education may prove far more important in determining women's access to health care

2770

A community-driven sexual and reproductive health intervention for internally displaced women and girls in Durumi, FCT Nigeria, December 2022

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Keywords

Sexual and reproductive health, internal displacement, participatory community engagement; mother-daughter dyads

Introduction

By the end of 2022, Nigeria had 3.6 million internally displaced persons (IDPs), displaced because of insurgency, ethnic conflicts, and natural disasters. 80% of these IDPs are women and children. IDP women and adolescent girls (IDWAGs) lack access to health services and are more prone to sexual and reproductive health (SRH) issues. This research delivered a community-driven intervention that aimed to increase access to and demand for comprehensive contraceptive education and services among IDWAGs in Durumi camp, situated in Nigeria's Federal Capital Territory (FCT).

Methods

This study was part of a larger quasi-experimental, mixed-method study in two IDP camps in the FCT. A baseline household survey (N=355) and key informant interviews were conducted with 35 respondents to understand the SRH needs of the IDPs. Four nurses and 20 IDWAGs were trained on providing SRH services and community advocacy, respectively. Nurses provided physical and virtual counselling and services, while IDWAGs conducted community dialogues in the intervention camp for six months. An endline evaluation was conducted using methods similar to the baseline.

Results

The nurses counselled 1767 IDPs on SRH: 891 physically and 876 via phone calls. 800 IDPs adopted modern contraceptives, and mother-daughter dyads engaged 3730 IDPs in community dialogues and peer advocacy. Positive outcomes were observed. Overall knowledge of SRH rose by 39.4% and 4.6% in the intervention and control camps, respectively; net effect in intervention increased by 34.8% (p-value <0.01) compared to the control. Contraceptive prevalence rate increased by 28.8% in the intervention camp and declined by 0.6% in the control camp; net effect in intervention was +29.4% (p-value <0.01) compared to the control camp.

Conclusions

SRH interventions yield success when trusted health workers provide services through multiple approaches. Also, engaging mother-daughter dyads as SRH champions proves promising in complementing healthcare worker services and increasing modern contraceptive use among IDPs.

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Access to information as a pathway to improving health service uptake for women and girls

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Keywords

Gender, access, information, women, girls

Introduction

Access to information is a fundamental right, critical for the exercise of basic health access rights. The Zambian government has committed to improving health access and transforming social and gender norms, articulating success statements in its declaration of the 2023 commitments. However, information related factors continue to affect universal health coverage for women, men, boys, and girls. A study conducted in Zambia's Eastern and Southern provinces sought to explore the information related factors affecting access to, and uptake of primary health services for woman and adolescent girls.

Methods

We used qualitative methods to explore several barriers including bureaucratic, social and information accessibility; this abstract focuses on access to information being a facilitator and barrier to uptake of services. Four districts were purposively sampled, and data collected through; desk reviews; 22 FGDs (women, men, girls, and boys); 36 KIIs (Civil Society Organizations, national and subnational participants within the Ministry of health) and analysed using NVivo software.

Results

The study established that access to information was affecting uptake of health services. Limited knowledge of safe abortion was evident in both provinces, leading to poor access to safe abortion services and reliance on unsafe methods. Information dissemination varied for women and girls with women being reached through radio, churches, health facilities, community-based structures, communal spaces and events while adolescents primarily sought SRH information from grandparents, teachers, peers, and social-media. The mentor mothers program and the back to school policy provided women and

girls platforms to have financial and educational information. COVID-19 disrupted face-to-face dissemination of information, impacting community engagement. Misconceptions about cervical cancer treatment for women reinforced men's resistance to their partners' screenings.

Conclusions

The study established that tailored strategies for diverse demographics, vernacular content, and cultural sensitivities were emphasized as crucial for enhancing access to SRMNCAH&N information, directly impacting service uptake

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Perception, utilization and safety of traditional birth attendants in Aba metropolis, southeast Nigeria

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Keywords

Traditional birth attendants, utilization, safety, maternal mortality, Aba metropolis

Introduction

Pregnancy and childbirth are expected to be joyful with positive experiences for both the mother and members of the family but studies have shown that childbirth at home is significantly associated with a higher risk for maternal death in low and medium income countries. This study was conducted to understand why most pregnant women in Aba metropolis southeastern Nigeria prefer traditional birth attendants (TBA) for delivery care services and assess the safety for both the mother and child

Methods

An exploratory qualitative study using a semi-structured questionnaire, focus group discussion (FGD) and in-depth interviews was designed in four communities each from the three local governments in Aba metropolis Abia State, Nigeria. Each interview was recorded and the data obtained were used for the analysis.

Results

A total of 206 participants representing pregnant women, non-pregnant women of reproductive ages (between 15-45 years), health care providers, traditional birth attendants, religious and community leaders were enrolled for the study. Our findings showed that successful delivery experiences had a huge influence on other women's preference for TBA, low literacy level (40.7%), in addition, socio-economic barriers including high cost of delivery (96.1%) and baby requirements (81.6%), lack of money for facility based delivery services (45.6%), negative attitudes of the trained care givers at the clinic during delivery (24.8%) informed their decision to deliver at home. Most women have a positive attitude toward traditional birth attendants (83.5%) due to established relationship they have with the community, however, some women (1.9%) acknowledged that they had experienced post delivery complications and infant death from their previous pregnancies after utilizing TBA.

Conclusions

The study showed that low literacy level and financial status were major reasons for utilization of traditional birth attendants, formal health education and training programs are necessary to enable TBA recognize pregnancy complications, improve maternal health outcomes in Nigeria.

Track 5: Safeguarding Africa's Health Security: Health Emergencies, Biosecurity, Climate change, and Multi-Sectoral Response Mechanisms

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Determinants of workplace resilience among healthcare workers at the epicenter of the Sudan virus disease outbreak response in Uganda, 2022

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Keywords

Ebola, Sudan Virus Disease, resilience, stress, healthcare worker, Uganda

Introduction

Healthcare workers' (HCWs) mental resilience can be challenged during times of adversity, such as during outbreaks. On September 20, 2022, the Uganda Ministry of Health declared a Sudan ebola virus disease (SVD) outbreak. We assessed the level and determinants of resilience at the workplace among HCWs working during the SVD outbreak in Uganda.

Methods

During March 2023, we conducted a cross-sectional survey among all HCWs (clinical and non-clinical) working from September 20, 2022-January 23, 2023 (the outbreak period) in the 3 health facilities with Ebola Treatment Units (ETUs) in Mubende and Kassanda districts, the epicenters of the outbreak. Data were collected using a structured questionnaire. Risk perception was assessed using 11 statements with a 4-point Likert-type scale. We assessed resilience using the Connor-Davidson Resilience Scale (CD-RISC-10). Resilience was dichotomized into 'not resilient' (score 1-29) and 'resilient' (score 30-40). Logistic regression was used to identify factors associated with resilience.

Results

Among 400 HCWs interviewed, mean age was 35 (range: 20-58) years; 222 (56%) were male and median work experience was 8 years (range:1-38). One hundred and ten (28%) HCWs were support staff and 72 (18%) were nurses; 344 (86%) worked >40 hours per week. Ninety-three (23%) HCWs were resilient. Three hundred and fifty-six (89%) expressed fear of contracting SVD and 356 (89%) expressed concern about stigma at their workplace if they had contracted SVD. Resilience was associated with age >40 years (adjusted odds ratio (AOR)=2.1; CI=1.3-3.5), work experience >10 years (AOR=2.2; CI=1.1-4.7), working >40 hours per week (AOR=6.8; CI=2.1-23) and receiving Ebola-specific counselling (AOR=3.3; CI=1.7-6.5).

Conclusions

Most HCWs at the SVD outbreak epicentre in Uganda faced resiliency challenges shortly after the outbreak end related to their infection risk and treatment from others if they became infected. Adopting workplace policies aimed at addressing these concerns in future similar outbreaks may support resilience.

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Malaria evolution under climate change in West Africa with VECTRI using Bias-Corrected CMIP6

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Keywords

Climate change, Malaria, VECTRI, West Africa, Bias-corrected CMIP6

Introduction

In sub-Saharan Africa, temperatures are generally favorable for malaria transmission and the rainy seasons provide mosquitoes with optimal breeding conditions. This study aims to assess the impact of future climate change on malaria transmission in West Africa using for the first time the commu-

nity model of vector-borne diseases, TRIeste (VECTRI). This VECTRI model, forced by bias-corrected data from the Phase 6 Coupled Model Intercomparison Project (CMIP6) of Global Climate Models (GCMs), was used to simulate malaria parameters, such as the rate of entomological inoculation (EIR).

Methods

For this study in West Africa, the approach used consists in first studying the climate in the study area for the historical period (1950-2014), then evaluating the performance of VECTRI in simulating malaria over the same period (1950-2014) and finally study the impact of projected climate change on malaria in the future period (2015-2100) according to the scenario ssp245 ssp585.

Results

The results showed that the seasonal contrast of malaria transmission is closely related to the latitudinal variation of rainfall in West Africa. The southern part of West Africa is the most exposed to malaria. We find two periods of strong transmission of malaria in the Guinean zone (May-June and October-November) compared to the Sahelian zone where the maximum transmission is obtained in September. The projections show, with most of the models used (CanESM5, CNRM-ESM2-1, INM-CM4-6, MIROC-ES2L), an increase in malaria with a widening of the period of high transmission in the future. However, a decrease in malaria is expected in the future with some models (BCC-CSM2-MR and MRI-ESM2-0). However, shifting of transmission is expected from warm areas, where infection currently occurs with temperatures favorable for transmission, to temperate areas in the past due to increased temperature.

Conclusions

These results will enable stakeholders, by integrating the climate aspect, to better plan malaria control programs

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Domesticating the African Regional Biosafety and Biosecurity Legislative Framework - Lessons from Zambia, Botswana and Lesotho.

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Keywords

Biosafety and Biosecurity; Legal Framework, High Risk Pathogens, Countries

Introduction

The World Health Organization Joint External Evaluation indicated significant gaps in biosafety and biosecurity (BSBS) among Africa Union Member States (MS). To address this, Africa Centres for Disease Control and Prevention launched a continental initiative on biosafety and biosecurity with one of the objectives to develop and support the development and domestication of a regional BSBS Legislative Framework.

Methods

Through a highly consultative process with MS and partners, a regional BSBS Legislative Framework was developed for domestication. A standardized domestication process was piloted in three countries of Botswana, Lesotho, and Zambia that included (i) a comprehensive review of existing laws and regulations related to BSBS, (ii) collection of quantitative data from key stakeholders using electronic questionnaires (iii) focus group discussions, (iv) site visits to selected stakeholders for on-site verification, and (v) a series of five-day consultative workshops to validate desk review reports and develop costed domestication roadmaps.

Results

A total of 42, 22, and 15 legal documents from Botswana, Lesotho, and Zambia, respectively, were reviewed. None of the reviewed documents adequately addressed all the six domains of the Regional BSBS Legislative Framework. None of the countries had a multisectoral list of high risks pathogens, national training curriculum for BSBS and legislation for the transfer, storage, and disposal of agents and toxins of concern. Only one country had a lead entity coordinating BSBS and approved national standards for BSBS. All three countries had functional National BSBS Technical Working Groups . Based on the validated report on the status of legislation, all three countries agreed to develop new legislation and developed a costed domestication roadmap.

Conclusions

The lack of legislation specific to BSBS hinders strengthening and compliance with BSBS requirements. Domestication of the regional framework, led by multi-sectorial Nation BSBS-TWG, using a standardized approach is key in advancing and advocating for the implementation of BSBS requirements.

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Factors influencing multisectoral collaboration for one health approach in the control of zoonoses in Kisumu County, Kenya, March 2022

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Keywords

One Health. Zoonoses. Multisectoral collaboration. One Health collaborator

Introduction

One health (OH) integrates efforts of multiple disciplines working locally, nationally, and globally to achieve optimal health for people, animals, and the environment. Zoonoses cause endemic health burdens, pressure on healthcare infrastructure, and decreased economic prosperity. Kisumu has a seaport, airport, game reserves, rural and informal settings, and is a transit point to a zoonotic hotspot, the Congo Basin but lacks functional OH unit to optimise control of zoonoses, hence need for data to guide policy revision or creation to ensure rational use of resources and achievement of health equity.

Methods

A cross-sectional study assessed the extent, nature, and factors affecting collaboration among physicians, public health officers, veterinarians and ecosystem experts working for Kisumu County government. The sample required was estimated using Cochran formula and stratified sampling technique used to proportionately recruit the 142 participants. Data was analysed using descriptive and inferential statistics

Results

Multisectoral collaboration to control zoonoses was average (51.4% (95%CI= 40.4, 56.9)) driven mainly by public health officers. Conducting joint sensitizations ($p < 0.001$), notifying other sectors whenever a zoonosis is encountered ($p < 0.000$) and collaboration through professional associations ($p < 0.001$) were the significant nature of collaboration. The need for expertise from other sectors ($p = 0.000$), the need to promote One Health ($p = 0.000$), desire to mainstream One Health as government policy ($p = 0.000$)] prompted collaboration. Lack of communication ($p < 0.001$), lack of transport facilities ($p < 0.001$), lack of interest in zoonoses at work and during training ($p < 0.001$), insufficient funding ($p = 0.001$), differences in emphasis on zoonoses at the across the sectors ($p < 0.001$) significantly affected OH collaboration.

Conclusions

Conclusion: Addressing staffing requirements, training needs, allocation of resources, and setting up a robust information management system for data sharing can improve multisectoral collaboration for OH approach.

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Understanding the delay in identifying Ebola Virus Disease: gaps in integrated disease surveillance and response and community-based surveillance to detect viral hemorrhagic fever outbreaks in Uganda, September 2022

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Keywords

Surveillance, Ebola, viral hemorrhagic fever, Sudan Virus Disease, Uganda

Introduction

Early detection of outbreaks requires robust surveillance and reporting at community and health facility levels. Uganda implements Integrated Disease Surveillance and Response (IDSR) for priority diseases and uses the National District Health Information System (DHIS2) for reporting. However, investigations after the first case in the 2022 Uganda-Sudan virus outbreak was confirmed on September 20, 2022, revealed many community deaths among persons with Ebola-like symptoms as far back as July. We explored possible gaps in surveillance that may have resulted in late detection of the Sudan virus disease (SVD) outbreak in Uganda.

Methods

Using a standardized tool, we evaluated core surveillance capacities at public and private health facilities at the hospital level and below in sub-counties reporting the earliest SVD cases in the outbreak. Key informant interviews (KIIs) were conducted with 12 purposively-selected participants from the district local government. Focus group discussions (FGDs) were conducted with community members from villages where early probable SVD cases were identified. Thematic data analysis was used for qualitative data.

Results

Forty-six (85%) of 54 health facilities surveyed were privately owned, among which 42 (91%) did not report to DHIS2 and 39 (85%) had no health worker trained on IDSR; both metrics were 100% in the eight public facilities. Weak community-based surveillance, poor private facility engagement, low

suspicion index for VHF among health workers, the inability of facilities to analyze and utilize surveillance data, funding constraints for surveillance activities, lack of IDSR training, and lack of all-cause mortality surveillance were identified as gaps potentially contributing to delayed outbreak detection.

Conclusions

Both systemic and knowledge-related gaps in IDSR surveillance in SVD-affected districts contributed to the delayed detection of the 2022 Uganda SVD outbreak. Targeted interventions to address these gaps in both public and private facilities across Uganda could help avert similar situations in the future.

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An assessment of the Biorisk management system implemented in the laboratories of the Ministry of Health and Population, Egypt 2022.

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Keywords

Public Health Laboratory, Biorisk assessment, Biorisk management.

Introduction

In Egypt, infectious diseases are diagnosed and treated at 27 regional and over 150 hospital laboratories affiliated with MoHP. Laboratorians are at high risk of exposure to dangerous biological materials. Egypt implemented the Biorisk Management System (BRM) in 2015 at MoHP laboratories for Biorisk elimination or mitigation. This study aims to compare baseline assessment of BRM at R&H with after-action assessments to evaluate BRM at MoHP laboratories.

Methods

Assessments were conducted in 98 laboratories in ten governorates in 2017 and 2022 using the WHO assessment tool. This tool contains 42 items, divided into three categories: BRM policy, Biorisk assessment and control, implementation, and operation. Central laboratory Biorisk officers assessed laboratorians through observation and face-to-face interviews. Scores >75% were considered good, 50-75% satisfactory, and 50% unsatisfactory. Percent scores were compared using Chi2 with a p-value <0.05.

Results

The overall score at the baseline was 20%, with 94% of laboratories having unsatisfactory scores. Laboratories had Biorisk policy scores of 25%, Biorisk assessment and control 15%, and implementation and operation 20%. After-action overall scores improved significantly to 90%, where 88% of laboratories had good scores. Biorisk policy significantly improved to 98%, Biorisk assessment and control (90%, $p<0.05$), implementation, and operation to 88.7%, $p<0.01$. Areas with the most improved scores include hazard identification and risk evaluation (17.5% vs 85%, $p<0.01$), emergencies (16.6% vs 81 %, $p<0.01$), documentation and procedures (23.7% vs 90%, $p<0.01$), and staff management and training (20% vs 95 %, $p<0.05$). Areas that need improvement include planning (50%), security measures (51.6%), and performance evaluation (65%).

Conclusions

BRM system was successfully implemented in 98 laboratories in Egypt. Performance improved significantly after full implementation. Regular training and performance monitoring of lab staff is required to improve planning, security measures, and performance evaluation to reach the optimum BRM

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Cross-continental collaboration in event-based surveillance: the experience of monitoring open sources at the Africa Centres for Disease Control and Prevention and the European Centre for Disease Prevention and Control

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Keywords

health security, surveillance, collaboration

Introduction

Event-based surveillance (EBS) for threat detection through routine media monitoring is a core activity at the Africa Centres for Disease Control and Prevention (Africa CDC) and the European Centre for Disease Prevention and Control (ECDC). Africa CDC and ECDC have similar routines for monitoring communicable diseases using the Epidemic Intelligence from Open Sources (EIOS) platform to detect events of interest.

Methods

We describe EBS routines at Africa CDC and ECDC highlighting collaborations between the two teams using EIOS and outcomes since 2022.

Results

Africa CDC uses a de-centralised model with Regional Collaboration Centres screening the EIOS for items of interest in their region and reporting daily to the headquarters. ECDC uses a centralised model where screening and reporting is conducted by duty officers based at the Centre. Africa CDC and ECDC both report all findings either routinely or in an ad hoc manner to their stakeholders.

The EI teams in the two centres have created an EIOS community which allows sharing of signals and events between both institutions. During the 2022-2023 outbreaks of mpox in Europe and viral haemorrhagic fever in Africa (e.g., Ebola in Uganda) critical information were shared through the EIOS community and the teams organized ad hoc meetings to discuss updates, validate signals and share field experiences.

The information shared between both teams, have been instrumental in outbreak assessments and in developing technical documents such as the ECDC-published "Rapid Risk Assessment on the Ebola outbreak in Uganda" and the Africa CDC-published "Guidelines for Enhanced Surveillance of Sudan Virus Disease" in 2022.

Conclusions

EBS collaboration between Africa CDC and ECDC is essential in safeguarding global health security. Routine collaboration through EIOS allows timely information sharing and provides added benefit to the screening done by both Centres and evaluating risk of cross-continental spread of health threats.

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Prevalence and risk factors for non-collision injuries among bus commuters in Dar es Salaam, Tanzania

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Keywords

Non-collision injuries, Prevalence, Commuters, Dar es Salaam, Tanzania

Introduction

Migration of people from rural to urban areas has led to the increase in demand for transportation services in the cities. This has led to the increase in non-collision injuries among commuters. This study aimed at investigating prevalence and risk factors for non-collision injuries among commuters using public transport in Dar es Salaam, injury characterization and associated factors.

Methods

A cross sectional study was conducted in 2020 in Dar es Salaam region involving 290 commuters from 7 bus routes travelling to and from the city centre. A stratified random sampling was used to sample bus routes and buses based on passenger size. On board systematic random sampling was used where three commuters were interview per bus.

Data was analyzed using R studio software 1.0.136, Period prevalence of 12 months, 6 months and life time was calculated, Kirk method was used to analyze injury severity while logistic regression model was used to estimate association between non-collision injuries occurance and risk factors

Results

Lifetime prevalence of non-collision injuries was 71%, while rates were 70% and 39% in the last 12 and 6months respectively. Strong association was observed between the occurrence of non-collision injuries and commuting time between 5:00pm to 10:00pm (AOR=9.24; 95% CI: 2.68-19.54); boarding and disembarking (AOR=9.21; 95% CI: 3.77-25.11) and scrambling during boarding (AOR=5.03; 95% CI: 2.51-21.32). The lower limbs (AOR=8.64; 95% CI: 2.72-21.76) and the upper limbs (AOR=13.55; 95% CI: 5.32-33.21) were the most affected body parts.

Conclusions

The higher annual prevalence for non-collision injury was also higher which is a pushback to goal 11 of SDG's which was explained by the tendency of commuters to normalize scrambling for the public transport. The decline of prevalence of non-collision injuries in 6 momths period was due to new restrictions imposed by the Tanzania government to combat spread of Covid-19 disease infections in 2020.

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"Vaccines don't Save lives Vaccinations do": COVID-19 Vaccine Deployment in Sub-Saharan Africa, Insights from Ethiopia

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Keywords

Adult Vaccination ; COVID-19 ; Mass Vaccination : Africa

Introduction

Safe and effective vaccines offer a glimmer of hope for the mitigation of the COVID-19 pandemic. Sadly, most LMICs have been left behind in the race to vaccinate their populations. Nowhere in the world is this more apparent than in Africa. Recently, limited progress has been made in the supply of vaccines to the region. Subsequently, the complexities of distributing vaccines to reach target populations have increased. In this study, we have assessed the perspectives of key stakeholders on the Ethiopian Health system's capacity to deploy COVID-19 vaccines.

Methods

This qualitative study used in-depth interviews to explore the challenges and best practices of COVID-19 vaccine deployment in Ethiopia. A purposive sample of individuals directly involved in the vaccine rollout process was interviewed virtually. The data was transcribed verbatim and analysed using thematic analysis on NVIVO.

Results

The study identified that several challenges burden vaccine deployment in Ethiopia. These include gaps in leadership, logistical difficulties, inequitable coverage, vaccine hesitancy and healthcare worker shortage, further threatening routine healthcare services. There are also some opportunities, such as increased global attention leading to improved access to funding.

Conclusions

We observed that numerous challenges threaten the vaccine rollout in Ethiopia, and these challenges are shared across countries in SSA. These challenges are driven in part by the bottlenecks of the health system, And by extrinsic factors such as conflict, global vaccine shortage, and inequity. The findings suggest the need for a multi-pronged response to facilitate a successful campaign. This should include increased attention and facilitation from the federal government, designing adaptable and dynamic micro plans for the different administrative levels, addressing root causes of vaccine hesitancy on time, and lastly, leveraging the opportunity to create adult vaccination programs in Ethiopia.

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Findings from a Peer-to-Peer Experience sharing visit to Nigeria by the Mali Public Health Emergency Management Team

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Keywords

Public Health Emergency Management (PHEM), Experience Sharing, Training

Introduction

Capacity building of the National Public Health Emergency Operation Center (PHEOC) plays a vital role in emergency preparedness and response. From 20 to 22 June 2023, two executives from the Mali Ministry of Health visited Nigeria. The visit aimed to engage key stakeholders in the Nigeria PHEM program on how it was developed, implemented, and tracked in Nigeria to inform the process of establishing a similar program in Mali.

Methods

The methods included presentations, group discussions with technical staff and institutional points of contact, visitation, and guided tours to national and State PHEOC.

Results

From this visit, we learned that the Nigeria PHEM program has been adapted from the CDC Atlanta program. It was designed by the Nigerian office of the US CDC in collaboration with CDC Atlanta, Nigeria Center Diseases Control and Prevention with technical support from Georgetown University. The process followed by the Nigeria PHEM program includes framework design, advocacy engagement for funding support, the definition of standards, development of professional curriculum, categorization of training levels, certifications, development of an online virtual learning environment portal, and branding. Nigeria's PHEM program has two main components: the PHEM Professional Development Program (PDP) which focuses on training for staff and the PHEM Center of Excellence which focuses on institutional development. PHEM PDP has been categorized foundational courses taken as Basic and Intermediate level course. The program has successfully

implemented five cohorts of basic training and has trained 55 emergency managers at the intermediate level who have been responding to different outbreaks in various capacities.

Conclusions

The visit enhanced the collaborative partnership between PHEM stakeholders in the two countries. The experiences acquired from the discussions and observations from the field visits will enrich the design of a similar PHEM program in Mali.

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Malaria in the context of Climate Change; The case of Africa: A Rapid Evidence Synthesis

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Keywords

Africa, Climate Change, Disease, Evidence synthesis, Global Warming, Malaria

Introduction

The complex transmission dynamics of malaria are strongly influenced by environmental conditions, temperature, rainfall, humidity, wind speed and altitude, among others. Climate warming may make the areas previously too cool for vector population establishment now suitable.

Objective: To summarize the best available evidence on the influence of climate change on malaria incidence in Africa.

Methods

A rapid evidence synthesis was applied. Relevant studies from PubMed, the Cochrane Library, Health system evidence, Epistemonikos, and SUPPORT summary were searched using key terms: ("Global Warming" "Climate Change" Malaria and Africa). After screening for the titles and abstracts, data were extracted from articles.

Results

Climate change will increase all-age malaria mortality by 2.6%. The occurrence of transmission peaks in the temperature range of 26–28 °c. The Western and some region of Central Africa might lose their suitability for A. arabiensis and A. gambiae. In contrast, the Southern and Eastern part might become more favourable for the development of these malaria vectors. Substantial increases in populations at risk are projected in East Africa. Urbanization act synergistically with warming climate as 'heat islands' and creating vector breeding habitat. Dams in SSA are expected to add 1.2–1.6 million malaria cases annually in the 2020s and 2.4–3.0 million cases annually in the 2080s. The relationship between malaria and temperature is positively weak. At higher temperature survival rate of malaria decreases. So, under the hottest and driest scenarios near elimination of mosquito populations is predicted.

Conclusions

Under uncontrolled situation trend of malaria was estimated to increase in different part of Africa especially SSA. Some malaria vector was also expected to shift from the current location to other locations based on suitability of temperature. Some productive activities like dam construction are contributing to the African malaria increase if not mitigated.

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Evaluation des performances du plan d'action national de sécurité sanitaire et de l'outil SPAR en Côte d'Ivoire, 2022

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Keywords

PANSS – Performances - Evaluation

Introduction

En Côte d'Ivoire, une approche multisectorielle est utilisée pour obtenir des informations de tous les secteurs participant à la mise en œuvre des capacités du RSI (200) pour l'auto-évaluation et l'établissement de rapports annuels (SPAR). L'Evaluation annuelle du Plan d'Action National de la Sécurité Sanitaire (PANSS) se tient longtemps avant ou après le rapportage du SPAR et nécessite assez de ressources humaines et financières, entraînant une perte de temps. L'objectif était de décrire l'organisation de cette approche en vue de mieux renseigner le SPAR à partir de données de l'auto-évaluation du PANSS au cours d'un seul atelier.

Methods

Le Point focal RSI organise chaque année, un atelier portant sur l'évaluation du PANSS et le rapportage du SPAR. En effet, il s'agit d'abord des groupes de travail technique (GTT) pour analyser les performances des différentes capacités du RSI et, pour renseigner les indicateurs du SPAR. Puis, le point focal compile les données de ces GTT et les présente pour une

validation en plénière. A l'instar du consensus obtenu, suite à la compilation et validation de ces données par les Experts et parties prenantes, l'outil SPAR est enfin renseigné à travers le site de l'OMS dédié à cet effet.

Results

Les performances sont passées de 37% (évaluation de juin 2022) à 43% et les domaines ayant réalisé le plus grand nombre d'activités étaient la Résistance Anti-Microbienne (volet Prévenir) et le système de laboratoire (volet Détecter) et la Communication (volet Réponse). Les domaines ayant les plus grandes performances (70%) étaient la communication (84%), la législation (75%), la gestion des urgences (72%), la préparation (71%) et la coordination (70%).

Conclusions

Cette approche a permis d'accroître la fiabilité des informations rapportées et l'engagement des acteurs pour renseigner l'outil SPAR.

1099

Training a Continent: A Process Evaluation of Virtual Training on Infection Prevention and Control in Africa During COVID-19

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Keywords

COVID-19 pandemic, African Union member states, Infection Prevention and Control (IPC), virtual training, healthcare workers.

Introduction

The strengthening of infection prevention and control (IPC) capacity emerged as a crucial intervention to prepare African Union member states for effectively managing the COVID-19 pandemic. Within the framework of the Africa Taskforce for Coronavirus, which helped implement the Africa Joint Continental Strategy for COVID-19 outbreak response, the IPC Technical Working Group (IPC TWG) was established to coordinate the development of IPC core components for preparedness, response, and recovery. As part of the IPC TWG's efforts, the Africa Centres for Disease Control and Prevention, in collaboration with the Infection Control Africa Network (ICAN), conducted virtual IPC training sessions for African Union member states. We aimed to assess the training format and content, reach of the training, engagement of participants, and impact on knowledge and skills.

Methods

Our study used quantitative and qualitative data to analyse the effectiveness of online IPC training. The qualitative data were obtained through interviews and focus group discussions with the training organisers and advisory members, culminating in a design workshop. Data collection was both prospective and retrospective due to the rapid initiation of some training activities. Existing data sources included usage analytics, questions posed during webinars and in the community of practice, and participant feedback survey results. We also conducted in-depth qualitative interviews with a sample of webinar participants.

Results

The rapid development of IPC training was efficient and responsive. The training reached over 3,000 participants across two rounds, albeit with substantial participant numbers by location variation. Participants actively engaged during the question periods of each webinar, but utilisation of the asynchronous community of practice was lower during the evaluation timeframe. Many participants appreciated the African-centric focus of the webinars and provided positive feedback on practical and context-specific content.

Conclusions

The study highlights global IPC capacity importance and underscores the opportunity for IPC enhancement through online training in Africa.

1168

An analysis of strengths, weaknesses, opportunities and threats to inter-agency collaboration for public health emergency response among key stakeholders in Nigeria, March 2023

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Keywords

Inter-agency collaboration, emergency response, SWOT analysis

Introduction

Introduction: Public health emergency response necessitates multi-agency collaboration and coordination to synergize efforts and improve outcomes. However, collaboration among agencies is often cumbersome, uncoordinated, and sometimes ineffective. There is a dearth of high-quality evidence about efficient processes and techniques for multi-agency collaboration. This study was undertaken as a leadership challenge project for the Kofi Annan Fellowship to identify the challenges and propose solutions to the ineffective multi-agency collaboration witnessed during the COVID-19 pandemic response in Nigeria and to develop a framework for multi-agency cooperation.

Methods

Methods: A descriptive cross-sectional study was conducted in Nigeria's federal and state government agencies from November 2022 to March 2023. Physical and virtual key informant interviews (KIIs) were conducted among twelve purposively selected executive officers, directors, the commissioner for health, the WHO state coordinator, and a legislative chairman. The KIIs lasted for about forty-five minutes each, were digitally recorded, transcribed verbatim, and analyzed using NVivo 12. Eight team members mentored during the Fellowship program served as research assistants. Ethical approval was obtained from an IRB, and verbal informed consent for recording, screenshots, and pictures was obtained from the respondents.

Results

Result: Every state in Nigeria has at least one tertiary federal health institution (FHI) purposefully established to support the State Ministry of Health in all health matters, including emergency response. However, the institutions are working in silos with little or no form of collaboration. The existing emergency operation centre provides an excellent opportunity for multi-agency cooperation with the abundant health workforce at FHI as a strength, but its coordination is weak and funding is a threat. A prototype framework for collaboration was developed.

Conclusions

Conclusion: A framework for multi-agency collaboration during emergency response is imperative, with clearly defined coordination and funding mechanisms. Discussion about this issue at the forthcoming annual National Council on Health is recommended.

1370

Assessing Biosafety and Biosecurity Knowledge, Awareness, and Practices Among Egypt's Private Human and Animal Diagnostic Laboratories

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Keywords

Biosafety, Biosecurity, Private, diagnostic, Laboratories, MENA

Introduction

The World Health Organization and the Global Health Security Index report lagging biosecurity and biosafety (BSBS) capacities across the MENA region. In Egypt, private human and animal diagnostic laboratories are crucial in surveilling infectious agents and toxins. However, the absence of robust BSBS guidelines within Egyptian laboratories poses potential risks that can have far-reaching consequences at national, regional, and global levels.

Objectives: To assess BSBS knowledge, awareness, and practices among Egypt's private human and animal diagnostic laboratories.

Methods

A 97-question survey was electronically shared with 185 laboratory professionals from 33 human and animal laboratory companies in 22 Governorates across Egypt. The assessment tool evaluates private laboratory 'professionals' BSBS knowledge, awareness, and practices.

Results

We had a 100% response rate. Results revealed varying levels of knowledge and awareness of BSBS principles and terminology, ranging from 15% to 83%. Correct understanding and description of these principles ranged from 1% to 89%. Lack of formal training on BSBS, risk assessment, and PPE ranged from 55% to 83%. Only 16, 19, and 20% of participants consecutively knew the ISO 35001, IATA regulations, and high-consequence agents and toxins.

BSBS practices also varied considerably, ranging from 19-67%. Those practices include receiving samples not appropriately packaged, storing samples in unlocked freezers, lacking controlled access to lab areas and stored samples, and not conducting background checks and evaluations for hospitals, clinics, and labs.

Conclusions

Conclusion: Results highlight substantial deficiencies in BSBS knowledge, awareness, and practices across Egypt's private human and animal diagnostic laboratories. To address these gaps, the UNMC is providing advanced training for those lab professionals; however, the Egyptian government should update its national policies and requirements, supporting investments in and enhancing BSBS capacities and capabilities. This alignment between policies, knowledge, and practice will bolster overall readiness and biopreparedness throughout the country.

1392

The role of strategic engagement missions to Africa Union Member States in safeguarding health security: The West Africa Perspective, January- August 2023

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Keywords

Health Security, Multi-sectoral response, Member State Engagement, Regional Coordinating Centres, West Africa

Introduction

Western Africa Regional Coordinating Center (WA RCC) supports Africa CDC in executing its strategic work plan. This is done by fostering coordination, strengthening public health assets, facilitating knowledge exchange, and implementing Africa CDC strategic plan. Various initiatives have been deployed to strengthen collaborations with Member States (MS) however there continues to be persistently low response to requests that could be potentially beneficial to both MS and Africa CDC. A review of strategic missions to 15 MS by Western Africa RCC was done to assess impact of these visits on strengthening relationships and improving stakeholder buy-in.

Methods

We conducted a study using a mixed-methods approach. Desk review of mission reports was done and qualitative data was collected through semi-structured interviews with key informants from Western RCC, Member States, and other regional partners. Data was manually coded and content analysis done until consistent themes emerged.

Results

Fifteen MS were assessed and findings revealed that 53% of MS did not have focal persons responsible for coordinating Africa CDC requests, there was lack of clear understanding of processes and procedures for sending official request for support to Africa CDC by MS. MS that have been visited were more responsive to requests. Conflicting priorities, short turnaround time for requests from Africa CDC, non-translation of requests to MS official language, lack of incentives and poor motivation were found to contribute to non-responsiveness of MS.

Conclusions

MS engagement missions helped identify gaps, improved collaboration, strengthened communication between Africa CDC and Member States, helped map MS health capacity, facilitated implementation of Africa CDC activities and programmes as well as improved responsiveness of MS. We recommend increasing resources available to WA RCC, including funding, staffing as well as developing a comprehensive strategy for strengthening multi-sectoral response mechanisms that focuses on building partnerships between different stakeholders.

1399

Role of Supportive Supervision in improving COVID-19 vaccination in selected Member States in West Africa, August 2022 - August 2023

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Keywords

COVID-19, Supportive Supervision, Vaccination, Member states

Introduction

COVID-19 vaccination uptake has a lot of challenges. These challenges include vaccine hesitancy, vaccine shortages, and logistic problems. Supportive supervision of vaccination staff and stakeholders can be a valuable tool for addressing these challenges and promoting best practices in COVID-19 vaccination and improving the delivery of COVID-19. Western Africa Regional Coordinating Centre (WA RCC) had supportive supervision as part of SLL program implementation to help member states improve their COVID-19 vaccination coverage and outcomes.

Methods

Quarterly supportive supervision including regular visits to vaccination sites by National Coordinators, technical officers and MS senior supervisors with the use of a checklist. The supervisory teams visited 54 vaccination sites and 4 stakeholders (Partners and Government representatives) provided support and guidance to implementing partners, vaccination teams, and they helped to identify and addressed challenges. They also promoted use of best practices in COVID-19 vaccination delivery and demand generation.

Results

A total of Nine supervisory visits was conducted across two MS (Nigeria and Sierra Leone). Bottlenecks around implementation of SLL were quickly identified and resolved. The supervisory visits were effective in improving COVID-19 vaccination coverage in the two MS. As at August 2023, Nigeria and Sierra Leone achieved a vaccination coverage of 68% and 95% respectively for COVID-19 primary series. This is an improvement from 2022, when the Nigeria and Sierra Leone vaccination coverage were 53.2% and 71%respectively

Conclusions

WA RCC's quarterly supportive supervisory visits is an important example of how supportive supervision can be used to improve vaccination programs. The program helped to improve vaccination coverage in the Nigeria and Sierra Leone, and it has also helped to promote use of best practices in vaccination delivery. We recommend that Africa CDC and MS continue to invest in supportive supervision to help ensure the success of COVID-19 vaccination programs in the region.

1404

Improving Infection Prevention and Control Practices for health workers safety in COVID 19 emergency treatment isolation unit at Kamuzu central hospital in Malawi

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Keywords

Infection prevention and control, COVID-19,Kamuzu central hospital

Introduction

Malawi ranked within top 10 high risk countries for COVID-19 has health system with limited capacity to handle additional burden of COVID19 having high health worker shortages of 28 nurses and 2 physicians per 100,000 people.

Malawi experienced four major COVID 19 waves that overwhelmed the healthcare system between June 2020 and December 2021.Healthcare workers were the most infected posing further risk to response and mitigation of the pandemic.

At the onset of the pandemic Infection Prevention and Control (IPC) was not prioritized for health workers' safety. In December 2020 IPC assessment at Kamuzu Central Hospital (KCH) scored 35 % with gaps in PPE doffing and donning, disinfection, hand hygiene, and waste management. To adress the gaps a project was implemented aimed at improving health workers' safety through tailored IPC interventions in COVID Emergency Treatment Unit (ETU).

Methods

Between December 2020 and July 2021 IPC interventions were developed and implemented led by a nurse IPC focal person. Interventions included guidelines, training health workers through mentorship and drills, appointment of IPC champions responsible for reinforcing IPC, practicing safe environmental cleaning. Health workers worked in teams rotating for seven days and were tested for COVID at end of their rotation with positivity rates monitored.

Results

There was improvement in IPC to 72%, adherence to right safe passing points, adoption of safe and culturally acceptable COVID dead body burial practices, proper waste man-

agement and reduced COVID infections amongst healthcare workers with positivity drop from 27 % to 2 %.

Conclusions

Improving IPC practices amongst HCW workers demonstrated ability to reduce COVID 19 infections amongst HCWs. Therefore In infectious disease treatment units IPC measures should be put in place to reduce occupation risks and have a health work force that can respond to and mitigate epidemics which are highly contagious in nature like COVID 19.

1417

The impact of polio outbreak response activities on polio surveillance sensitivity in Zambia

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Keywords

Poliomyelitis, Outbreak Response, Multi-sectoral Collaboration, Health Emergency

Introduction

In response to the wild polio virus outbreak in Malawi and Mozambique in 2022, the Zambia Ministry of health in collaboration with the Global Polio Eradication Initiative (GPEI) partners took pragmatic actions to enhance polio surveillance system in the country and help detect any possible silent transmission. This study evaluates the impact of the polio outbreak response activities on polio surveillance indicators performance.

Methods

The interventions included a desk review of the polio surveillance performance and stakeholder meetings to understand the problems in the country context. We then developed, implemented and monitored surveillance enhancement plan activities from the national, provincial and districts levels. We compared the surveillance indicators before initiation of the outbreak response (January-December 2021) and after (January-December 2022).

Results

The was a 26% increase in field visits for acute flaccid paralysis (AFP) active case search and community sensitization from 1,529 in 2021 to 1,922 in 2022. AFP case detection also increased from 230 in 2021 to 400 in 2022 with subsequent increase in the non-polio AFP rates from 4.1/100,000 <15 years population to 4.6/100,000 <15 years population. However, the stool adequacy rate declined from 71% in 2021 to 64% in 2022 and this was due late detection of cases from the previous year 2021. The proportion of silent districts also decreased from 16% (18/116) to 10% (12/116). Three environmental circulating vaccine-derived polio virus type 2 (cVDPV2) were detected in 2022.

Conclusions

The polio outbreak response significantly improved polio surveillance system in Zambia. Pragmatic efforts to fund the country surveillance enhancement activities including partner and cross-border collaborations, building capacity at sub-national levels, supportive supervisory field visits for active case search and community sensitization, technical and logistics support will enable the country respond adequately to polio outbreaks and regain its polio free status.

1528

Successful shipment of Ebola specimens in security fragile environment of eastern Democratic Republic of Congo, January 2023

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Keywords

Shipment, Ebola, Specimens, Eastern Democratic Republic of Congo

Introduction

Since its discovery in the Democratic Republic of Congo (DRC) in 1976, Ebola virus disease (EVD) has caused recurrent outbreaks, notably in the eastern region, supported by the USAID's Infectious Disease Detection and Surveillance (IDDS) project. Armed group conflicts have historically complicated sample transportation during outbreaks. This abstract outlines the Ministry of Health (MoH)-IDDS partnership tackling the challenge of transporting samples from the 12th and 13th

EVD outbreaks (2021-2022) from Beni and Butembo's satellite laboratories to the National Institute of Biomedical Research (INRB) in Goma for secure, long-term preservation.

Methods

In November 2022, the MoH, requested IDDS support to transport specimens to the INRB laboratory in Goma for long-term safe storage to avoid the risk of new Ebola outbreaks from potential intentional or accidental virus breakout from the laboratories... After several meetings with MoH IDDS negotiated and signed an agreement with the United Nations Humanitarian Air Service (UNHAS), to allow transport of specimens from affected sites to testing laboratories during major outbreaks.

Results

On January 31, 2023, in collaboration with MoH, IDDS organized the transport of 6,966 specimens from the 12th and 13th EVD outbreaks, kept at the Butembo and Beni INRB satellite sites, by UNHAS flight to INRB Goma laboratory for safe and long-term storage.

Conclusions

Lessons learned

- Close collaboration between MoH and IDDS resolved the long-term inability to move highly dangerous biological specimens from an unsafe environment to a safe storage location.
- IDDS's foresight in negotiating the transport of biological specimens with UNHAS enabled the movement of specimens over areas where the security situation was unpredictable.

This collaborative effort was timely and beneficial to the community in terms of security and protection from biological exposition as fighting broke out in the region a few weeks after the EVD specimens were transported and all flights were interrupted.

1554

Active Safety Surveillance on Janssen (Johnson & Johnson) Covid-19 Vaccine from August 21, 2021 to June 20, 2022: A National Study from Ethiopia

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Keywords

Janssen COVID-19 vaccine, types of AEFIs, incidence of AEFI, serious AEFIs

Introduction

Janssen COVID-19 vaccine was granted emergency approval in Ethiopia. However, its safety has never been studied in Ethiopian population. Thus, this study assessed the safety of Janssen COVID-19 vaccine through evaluating incidence, types and seriousness of Adverse Events Following Immunization(AEFIs).

Methods

A prospective observational study was conducted between August 2021 to June 2022. 10,262 participants, age ≥18, vaccinated with Janssen COVID-19 vaccine were recruited after obtaining their consent. Sociodemographic data and information on comorbidities were collected initially. Participants were observed at the site of vaccination for 30 minutes after vaccination. Details about any AEFI occurring within 30-days of follow-up period were collected via telephone-based interviews on days 2, 4, and 7 for 1st week; then weekly on week-2, 3, 4 by trained data collectors. Also, AEFIs were reported to the Ethiopian Food and Drug Authority passively; however, only serious AEFIs from passive reporting were included in data-analysis.

Results

The median age of participants was 37 years. 79(8%) participants reported taking one or more medications for their chronic diseases; hypertension, diabetes and HIV/AIDS being the top 3. The overall incidence of AEFIs was 44.51%. 97(2.1%) participants reported encountering AEFIs within 30 minutes of vaccination and injection site pain, headache, fever and nausea/vomiting being the top four AEFIs. From 4568 who had AEFIs, 4430(97%) reported facing one or more AEFIs after 30 minutes of taking the vaccine. Injection site pain, headache, fever, joint pain and fatigue were the top five types of AEFIs reported, respectively. Most of the AEFIs were non-serious. However, 15 cases were reported as serious: 7 death, 6 hospitalizations and 2 spontaneous abortions. Causality assessment results showed 4 consistent cases of death.

Conclusions

The overall incidence of AEFI was 44.51%. Injection site pain, headache and fever were the top 3. Majority of the AEFIs were non-serious.

1558

Strengthening Biosafety and Biosecurity in Africa: The Significance of the Regulatory and Certification Framework for Handling High-Risk Pathogens

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Keywords

Biosafety, Biosecuristy, High risk Pathogens, Regulatory and Certification Framework, high and maximum containment facilities

Introduction

The Africa Centres for Disease Control and Prevention (Africa CDC) developed a Regulatory and Certification Framework for Institutions Handling High Risk Pathogens to support management of high risk pathogens. The lack of context based regulation to guide handling high-risk pathogens in Africa pose a significant risk for biosafety and biosecurity.

Methods

Using a highly iterative, multi-stakeholder consultative process, Africa CDC developed a Regulatory and Certification framework with three components, minimum standards to be complied to by institutions handling high risk pathogens, standard scored evaluation checklist and a 0-5 star rated certification framework. Implementers and assessors were trained using a training of trainers approach.

Results

This first regionally agreed minimum standards for high and maximum containment institutions was officially published by Africa CDC in August 2023. 45 assessors (16 English, 29 French speaking) from 18 countries and 82 implementers (49 English, 33 French speaking) from 31 countries were trained. A request for application for assessment was issued in November 2022 with no applications received to date.

Conclusions

The Regulatory and Certification Framework provides for context based minimum standards and regionally agreed framework that Member States can use for certification and authorization of institutions handling high risk pathogens. This minimizes international and un-intentional release of epidemic prone pathogens.

1578

Knowledge, attitude and practices of traditional healers regarding management of Ebola virus disease (EBOD) in Kassanda and Mubende districts, Uganda, September 2022

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Keywords

EVD, Traditional healers, Knowledge-attitude-practice, Mubende, Kassanda, Uganda

Introduction

Traditional healers often serve as initial caregivers in Uganda. Their work is informal and unrecognized by the formal healthcare systems. During September to November 2022, 164 cases of Sudan virus (formerly Sudan ebolavirus) were registered in 9 districts in Uganda. We assessed the knowledge, attitudes, and practices (KAP) of traditional healers regarding the management of Ebola Virus Disease (EBOD) among affected communities in Mubende and Kassanda Districts.

Methods

We conducted a cross-sectional survey among traditional healers in Mubende and Kassanda districts, April–May 2023. We randomly sampled 165 of 750 registered traditional healers in the districts. We administered a structured questionnaire to traditional healers (>18 years) about EBOD KAP and associated factors. We randomly sampled registered traditional healers. We assessed overall knowledge with 16 questions, attitudes with 8 questions, and practices with 21 questions. We scored participants' responses as "1" (correct) or "0" (incorrect); adequate knowledge score was >8, positive attitude score was >4 and good practices score was ≥11. Logistic regression was used to identify factors associated with KAP.

Results

Among 165 respondents, 57% were male; mean age was 53 (±16) years. In total, 62% had adequate knowledge while 40% had a positive attitude towards the recommended management of EBOD patients[HJ(1] . Only 4% practiced recommended infection prevention and control (IPC) during the EBOD outbreak. Having formal education (aOR=7.6, 95%CI: 3.6–11.8), being registered with an association (aOR=3.4, 95%CI: 1.5–9.5), being aged <40 years (aOR=4.5, 95%CI: 1.3–15.6) and being female (aOR=4.3, 95%CI: 1.3–12.7) were associated with adequate knowledge, and good practices for EBOD management.

Conclusions

Traditional healers had good knowledge and positive attitude but poor utilization of recommended practices of EBOD management. We recommend structured training programs by Ministry of Health to address the specific knowledge gaps especially on IPC and misconceptions among traditional healers.

1592

Combating Climate Change: Championing Malaria Social Behavior Change Sensitization in Schools in Machakos County, Kenya, August 2023Combating Climate Change: Championing Malaria Social Behavior Change Sensitization in Schools in Machakos County, Kenya, August 2023

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Keywords

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Introduction

Malaria's profound public health impact is evident, with Africa bearing 95% of cases and 96% deaths in 2021 (WHO's Malaria report, 2022). In Kenya, a prevalence of 13%-15% underscores the urgency. Amid conventional efforts, the intricate link between malaria and climate change remains underestimated, contributing to intervention failures. To mark the second anniversary of Kenya Malaria Youth Army, the team in Machakos decided to engage pupils in Kyambuko Primary school in a tree planting initiative and conducting a study on the link between malaria and climate change. By integrating malaria and climate change education into curricula, this initiative aimed to enhance awareness, reshape attitudes, and advocate for community action.

Objectives

1. Evaluating the awareness levels on the connection between climate change and malaria transmission.

2. Establishing the need for education on changing behaviors toward malaria prevention and climate change adaptation.

Methods

A cross-sectional study was conducted at Kyambuko Primary School in Machakos County, Kenya, targeting upper primary pupils and teachers. The study sample size included 300 pupils and 10 teachers selected through simple random sampling. One on one engagement method was used to collect data on awareness and behaviors related to malaria and climate change. The data was analyzed using descriptive statistics, where tables and charts were used for presentation.

Results

127/310 of the participants were aware while 183/310 weren't aware about the connection between climate change and malaria transmission.

211/310 indicated the need for education on changing behaviors, 74/310 indicated no need while 25/310 weren't sure.

Conclusions

The study revealed a notable knowledge gap regarding the connection between climate change and malaria transmission. Addressing this gap through targeted education is vital to promote behavior change and enhance community awareness. Public health interventions should prioritize integrated education on climate-malaria connections to empower individuals and communities in combating these interrelated challenges.

1675

Measuring preparedness to infectious diseases among 2124 households exposed to climate disasters in Mozambique: a cross-sectional study

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Keywords

Climate Change Adaptation, Cholera, Malaria, Internally displaced people, Communicable diseases, Climate disaster.

Introduction

Climate change is contributing to increase the frequency and severity of climate disasters in Mozambique, leading to extensive damage to infrastructure and to the displacement of up to 1.3 million people. Aim of this study is to evaluate baseline preparedness to vector-borne and water-borne infections among households exposed to climate disasters in Mozambique

Methods

This was a cross-sectional, community-based survey assessing the preparedness to infectious diseases outbreaks among people exposed to climate disasters in Mozambique. Structured questionnaire was delivered via face-to-face between October 15th and November 7th, 2022. Study outcome was defined as a seven-point score of preparedness to infectious disease outbreaks, which included presence of safe water source (i), sanitary landfill (ii), latrine (iii), insecticide treated mosquito nets (ITN) (iv) and possibility to handwash (v), dry food (vi) and to protect aliments from animal contamination (vii). Multivariable analysis of the score was conducted using Conway-Maxwell-Poisson regression.

Results

This study included 2,140 households and 11,239 people, with IDPs accounting for 30% (n=3,375) of the total population. Most households lived in the Mueda district (n= 803, 37.5%), Ancuabe (n= 416, 19.5%) and Montepuez (n=371, 17.3%). Overall, 1,186 (55.4%) households were overcrowded. Median score of preparedness to infection disease outbreaks was 3 (IQR 2-4), with the most and least available adaptation strategies being, respective, ITN (n=1,697, 79.3%), and the possibility to handwash (n=282, 13.2%). In the multivariable model, variables that were positively associated with higher infectious-diseases preparedness ($p<0.001$) were district of residence, family planning, access to primary education for all children living in the household and possession of a birth certificate for all children aged <5y.

Conclusions

In climate-vulnerable communities in Mozambique, households practicing family planning, providing access to primary education and birth certificate for all children were significantly less vulnerable to water-borne and vector-borne infectious disease outbreaks.

2020

Safeguarding our Health Security: Leveraging Lessons from Previous Outbreaks to Develop Resilient Health Systems: A Case Study of Ebola in Uganda, 2022

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Keywords

Pandemics; Hemorrhagic Fever, Ebola; Leadership; Community Health Services; Capacity Building

Introduction

Resilient health systems are crucial in achieving universal health coverage and collective health security. Health system strengthening efforts can leverage best practices from response activities to deliver resilient systems that are adapting, transforming and capable of absorbing shocks. Africa faces health emergencies frequently, including disease outbreaks, environmental disasters, and mass population movements. Lessons from these emergencies can be used to shape policies and build stronger health systems. Between 2010 and 2022, Uganda responded to >830 outbreaks. We seek to document lessons learnt during the COVID-19 response, and how such lessons may have informed a successful response to Ebola in late 2022 in Uganda.

Methods

We conducted a desk review of intra-action review reports from districts and the national level, and categorized lessons by absorptive, adaptive, or transformative capacities. We will conduct a case study in Mubende and Kassanda, the most affected districts by the Ebola outbreak. We will conduct qualitative interviews with the district health leadership and the incident management team and focus group discussions with community persons.

Results

Preliminary results show that key lessons that enabled the system to absorb the COVID-19 outbreak were capacity build-

ing for community-based surveillance; appropriate workforce management; improved logistics coordination; timely information sharing across pillars; and strong partner coordination. The systems adapted by establishing task-forces across levels; deployment of surge staff; strengthened community participation; leveraging technology; and maintenance of essential healthcare service provision. The health system transformed itself through integration of COVID-19 structures into the health system, collaboration among scientists and development of guidelines and SOPs.

Conclusions

Several important lessons were learnt in Mubende and Kassanda Districts during the COVID-19 pandemic that made their systems more resilient to withstand the Ebola outbreak. A resilient health system built on lessons learnt from previous health emergencies, buoyed by appropriate investments and policies, is key in safeguarding our health security.

2053

Establishment of Regional Capacity to Train Biosafety and Biosecurity Professionals in the Africa Region

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Keywords

Biosafety, Biosecurity, training, certification, biorisk management

Introduction

The National Institute for Communicable Diseases (NICD) in collaboration with the United States of America's Defense Threat Reduction Agency (DTRA), constructed the Regional Diagnostics Demonstration Centre (RDDC), designed for the simulation of diagnostic laboratory environments and functions. This is a national resource providing specialised diagnostic training and capacity building for Africa in the areas of dangerous pathogens. The opening of the RDDC in April 2022 represents the culmination of over a decade of increasing focus by the NICD on biorisk management (BRM), which includes both biosafety and biosecurity (BB).

Methods

The Southern Africa Region Member States (MS), through the Regional BB Technical Working Group (TWG) unanimously nominated the candidature of the RDDC to be certified as a Regional Centre of Excellence for Biosafety and Biosecurity (RCoEBB) for the Africa Centre's for Disease Control and Prevention's (Africa CDC) Regional Training and Certification Program for BB Professionals (RTCP). Through the collaborative support of DTRA and Sandia National Laboratories, the NICD developed the RTCP and its standard curriculum, as well as running BRM and Africa Region Subject Matter Expert (Af-RSME) trainer development interventions.

Results

The RDDC was certified by Africa CDC as the RCoEBB for the Southern Africa Region in July 2023, the first regional centre to be designated as such, following an assessment by a team of experts. As of April 2023, over 600 persons from at least 48 countries have participated in training provided at the RDDC, including the first cohorts of RTCP BRM and Biological Waste Management Level I training and exams, 39 BRM trainers, on-boarding of 21 Af-RSME, and with 12 persons currently working with designated Af-RSME on improvement projects for their institutions.

Conclusions

The RDDC is championing the development and implementation of local, sustainable, and accessible regional training programs in support of Africa Region BB capacity building initiatives.

2084

Spatial-temporal analysis of COVID-19 in Namibia: An account of first two years of the Pandemic

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Keywords

COVID-19, Outbreak, Districts, Spatial-Temporal analysis

Introduction

In Namibia, the COVID-19 outbreak was declared on 17 March 2020 and, impacted communities' epidemiological

and socio-economic livelihoods. As of March 2022, Namibia recorded a total of 157 664 cumulative COVID-19 confirmed cases and 4 019 deaths. Continentally, Namibia accounted for the tenth-highest cumulative attack rate 5 963 cases per 100 00 populations and 152 deaths per 100 000 populations. This study examined COVID-19 spatial and temporal patterns and contextual risk factors at district levels

Methods

We conducted a retrospective review study of COVID-19 data from all 34 districts in Namibia, March 2020 -2022. COVID-19 datasets were obtained from the Ministry of Health and Social Services' national COVID-19-line list. Population Projections and shapefiles were obtained from National Statistics Agency. Monthly weather data were retrieved from the Southern African Centre for Climate Change Website. From these datasets, 19 variables were merged. Exploratory Spatial Data Analysis was computed using the GeoDa Software. At 95% CI and P ≤ of 0.05, spatial regression analysis was fitted to estimate COVID-19-associated risk factors.

Results

Out of 157 664 cases, Windhoek district recorded the highest spatial heterogeneity of 51 132 cases (32.4%). Walvis Bay district recorded the highest mean incidence rate of 47 cases per 1 000 populations and the highest relative risk (RR) of 4. Significant peaks were observed during cold months and months of highest population interactions. At 95 % CI, minimum air temperature (Coefficient: 8.00355; P=0.03758), population>35 years (Coefficient: -1.59434; P=0.00069), and Co-morbidities (Coefficient: 1.287212; P=0.00537) increases COVID-19 morbidity and mortality.

Conclusions

COVID-19 spatial and temporal heterogeneity were associated with average minimum air temperature, months of high human mobility, and co-morbidities. This calls for the intensification of coordinated public health surveillance activities targeting high-risk population groups and districts. There is a need to further investigate spatiotemporal variations in various geographic and socio-economic statuses.

2096

COVID-19 pandemic response Risk Communication and Community Engagement lesson learned in Ethiopia, March 2023. Qualitative study

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Keywords

Risk Communication, Community engagement, COVID-19

Introduction

COVID-19 is a severe acute respiratory syndrome that causes major public health problems globally. Risk communication and community engagement (RCCE) is an integral pillar of this pandemic response in Ethiopia. The COVID-19 pandemic response RCCE lesson learned is the investigation of real RCCE action conducted during the COVID-19 pandemic response in Ethiopia. This study is conducted to explore strengths and weaknesses to recommend for the future public health emergency response to build a resilient health system in Ethiopia.

Methods

We have conducted a qualitative study design. We collect the data through desk review of RCCE documents, Focused group discussion, and interviews of RCCE experts of the Ethiopia Ministry of Health, Ethiopia Public Health Institute, Regional Health Bureaus, and partners that directly participated in the RCCE of COVID-19 pandemic response. RCCE lesson learned checklist to collect the data was adapted from the ready initiative to collect the data. The analysis was conducted thematically.

Results

RCCE is among the pillars of the COVID-19 pandemic management in Ethiopia. The RCCE section has three units: Content development and production, Mass media and social media monitoring and engagement, and Community engagement. Real-time information about the prevention measures, disease trends, and vaccine demand generation was disseminated to the communities by integrated multiple approach methods. Leveraging existing community networks and media, and partners were engaged in emergency response. Innovative methods such as No Mask No Service, Mask Ethiopia, Revitalizations (Dagim Tikuret), and the ComBAT campaign were communicated to control the COVID-19 pandemic. Ethiopia is multilinguistic, however, sometimes messages are developed only in the national official language and disseminated without considering the local language.

Conclusions

COVID-19 pandemic response RCCE activities conducted through Content development and production, Mass media and social media monitoring and engagement, and Community engagements. Effective RCCE messages developed should consider local language and pretested contextual to the regions.

2098

Prevalence of Staphylococcus aureus in bovine raw milk and associated milking hygiene practices among small-scale farmers in Magu district, Tanzania

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Keywords

Prevalence, Staphylococcus aureus, MRSA, AMR, milk hygiene,

Introduction

Background: Staphylococcus aureus is known as a major cause of food-borne diseases. It is transmitted from animals to humans through the ingestion of contaminated raw milk from cows. Information on the occurrence of livestock-associated S. aureus (LA-S. aureus) throughout the entire bovine supply chain in Tanzania is scarce.

Broad objective: This study has assessed the prevalence of Staphylococcus aureus in bovine raw milk from cows and assessed associated milking hygiene practices among small-scale farmers in the Magu district of Mwanza, Tanzania.

Methods

Methods: Conducted through multistage sampling, this cross-sectional study collected 384 bovine raw milk samples and 48 associated household questionnaires in Magu district, Tanzania. Staphylococcus aureus isolation followed Standard Operating Procedures (SOP) in the laboratory. The susceptibility was assessed using the Kirby-Bauer disk diffusion method and interpreted as per Clinical and Laboratory Institute Guidelines (CLSI, 2022). Cefoxitin disks were used to detect MRSA. Data analysis employed R-software, revealing associations between Staphylococcus aureus occurrence and milking hygiene practices through Chi-square and Logistic regressions, as well as proportions and percentages.

Results

Findings: The prevalence of S. aureus was found to be 23.9% and 3.9% MRSA. Varying levels of resistance were observed against different antibiotics; ampicillin (10 µg), penicillin (10 µg), tetracycline (30 µg), cefoxitin (30 µg), clindamycin (2 µg), erythromycin (15 µg), trimethoprim-sulfa (1.25/23/75 µg), gentamycin (10 µg) and ciprofloxacin (5µg) at 74.5%, 45.9%, 33.7%, 16.3%, 6.1%, 21.4%, 6,1%, 3.1%, and 1.1%, respectively.

Further evaluation, of small-scale farmers' milking practices, milking area hygiene indicated 29.2% poor conditions, 14.58% unwashed hands, 35.4% lacked pre-milking udder wash, and 50% used cold water for utensils. Minimal udder treatment (25%) and 10.41% meeting milk storage standards were observed; 89.58% at room temperature.

Conclusions

Conclusion: The study provides veterinary and public health insights that enable the execution of acceptable preventive and control measures for the high-quality production, of contaminant-free milk.

2121

Factors Influencing Bajaj Traffic Accidents among Bajaj Drivers in Borama Town, Somaliland

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Keywords

This study investigated the influence of factors on Bajaj traffic accidents among Bajaj drivers in Borama Town

Introduction

This study investigated the influence of factors on Bajaj traffic accidents among Bajaj drivers in Borama Town. The general objective of this study was to determine the major factors contributing to Bajaj traffic accidents in Borama town, Somaliland, with intention of Bajaj as a public transport. The general hypothesis of this study was skill, experience, behavior and road factors, together and individually, have a significant influence on Bajaj traffic accidents among Bajaj drivers in Borama town, Somaliland. The general research question of this study was - What are the factors influencing on Bajaj traffic accidents among Bajaj drivers in Borama town?

Methods

The design of this study was cross-sectional survey. The Area of this study was Borama Town. Borama locates the Northern western of Awdal region and it is the capital of Awdal region, it is near the border of Djibouti and Ethiopia.120 KM west from Hargiesa. The target population of this study consisted 4300 Bajaj drivers that are registered in Borama Bajaj association (Borama Bajaj Association Office). The sample of this study was 357 Bajaj drivers selected from 4300 Bajaj drivers

in Borama district. The sample size was determined according to (Krejcie and Morgan, 1970 tables of samples as cited in Oso, 2013).

Results

The study found that factors has no significant influence on skill [OR =1.274, -2 (1, N = 260) =.669, p =.716], on experience factors [OR =1.200, - 2 (1, N = 260) = 3.188, p =.922], and on behavior factors [OR =.423, - 2 (1, N = 260) = 2.642, p =.267]. Only road factors are significant influence on Bajaj traffic accidents [OR = .423, - 2 (1, N = 260) = 2.584, p = .000].

Conclusions

the study concludes that factors have no significant influence on Bajaj traffic accidents.

2127

Baseline Assessment of Rainwater Harvesting Systems in Healthcare Facilities in Kabarole District, Uganda — May 2023

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Keywords

Rainwater, Harvesting system; operation; Mainteinance

Introduction

Rooftop rainwater harvesting (RWH) plays an important role in supplementing water access in healthcare facilities (HCF) in low-income countries, particularly during water shortages. While RWH is an improved water source, inappropriate operation and maintenance can lead to contamination. This study aimed to develop contextualized evidence for the necessity of standardized RWH at primary HCF in Uganda.

Methods

We observed RWH systems at five HCFs in Kabarole District, Uganda, using a tool adapted from the WHO RWH Sanitary Inspection Form. To assess stored rainwater quality during the dry season, we collected water samples at the outlet tap in 200ml sterile bottles. We assessed physical parameters (turbidity, in Nephelometric turbidity units (NTUs), and pH) using a HT1000 Photometer, Trace20 Hydro Test Model HT1000. We used membrane filtration and culture with incubation for 18 hours at 44.5 °C and 35 °C for thermotolerant and total coliforms, respectively, and counted colony-forming units (CFU) per 100 ml of water. Results were compared with WHO drinking water standards.

Results

HCFs reported that rainwater is generally for non-potable uses, and thus not treated, but occasionally used for drinking. Of the 12 systems observed, 7 lacked overflow valves, 9 had dirty or dilapidated gutters, 5 lacked washout valves, and 4 lacked functional water taps. None of the tanks had first-flush systems or O&M protocols. The median turbidity was 0 NTU (WHO ref <5) and the median pH was 7.7 (WHO ref 6.6-8.5). Among the 8 functional tanks, 7 had total coliforms that were too numerous to count (> 250 CFU/100 ml) and 4 had thermotolerant coliforms (median= 11 CFU (WHO standard <1).

Conclusions

RWH systems in these HCFs were poorly maintained and samples collected did not meet standards. Installing protective features, implementing standardized O&M, and treating water would reduce contamination and allow safe consumption of RWH-sourced water.

2133

Meeting the human resources for health gap during the COVID-19 pandemic response in Nigeria: Roles of the Africa CDC Community Health Workers

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Keywords

COVID-19, Pandemic, Human resources, emergencies, community health workers, health security

Introduction

Poor perception and knowledge of COVID-19 across many communities in Nigeria necessitated the need for more human resources for health. Africa CDC engaged and trained CHWs to bridge the human resource and knowledge gaps. This study aimed to describe the activities of the Africa CDC Community Health workers (CHWs) in Nigeria and their contribution to contact tracing activities and the COVID-19 response.

Methods

This mixed-methods cross-sectional study included 108 CHWs from 35 (97.2%) states out of the 1200 CHWs engaged in the CHWs' project. Participants were recruited using a simple random sampling technique after they had worked for four months. A self-administered questionnaire was used to assess CHWs' knowledge, challenges, and contributions to the COVID-19 response. Ten questions were asked to evaluate CHWs' knowledge of COVID-19 contact tracing, and scores ≥50% indicated good knowledge. A desk review of COVID-19 situations in Nigeria was done. CHWs activities were verified through pictures from field activities and unscheduled supervisory visits.

Results

The mean age of the CHWs was 32.5 ± 2.5 years, and 81 (75%) were females. A week before the CHW's engagement the total number of COVID-19-positive cases: contact was 1,126:338 in Nigeria with contact-to-case ratio of 0.3. After the CHWs had worked for at least four months (in the first week of February 2021), the total COVID-19 positive cases: contact had increased to 6,600:4,236 with a contact-to-case ratio of 0.6. In all, 69 (63.5%) CHWs had above 50% knowledge score. CHWs contributed to the COVID-19 response through health education, risk communication, active case search/contact tracing, sample collection, updating case investigation forms, supervision of COVID-19 cases on home-based isolation, health facility assessment, and psychological counseling.

Conclusions

CHWs are a potential source of support during health emergencies. Planning refresher training into such a program in the future will maximize its impact.

2147

Utilizing the 7-1-7 Framework as a Performance Improvement Metric for Outbreak Response in Nigeria, 2022-2023

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Keywords

Pandemic preparedness, health security, systems approach, 7-1-7, timeliness metrics

Introduction

Rapid detection, notification and response are critical for minimizing the impact of outbreaks. To enhance national preparedness and response capabilities, Nigeria adopted the 7-1-7 target, a performance improvement framework comprising three timeliness metrics: 7 days to detect a suspected outbreak, 1 day to notify a public health authority and 7 days to complete early response actions. Here we describe Nigeria's approach to applying the 7-1-7 framework and share initial results.

Methods

National rapid response teams (NRRTs) collected data on 7-1-7 timeliness metrics during their deployments using a standardized report template. NRRT leads then delivered 15-minute presentations reviewing 7-1-7 performance for each outbreak during monthly National Surveillance and Outbreak Review Meetings (NaSORM), a multisectoral coordination platform for high-level Nigeria CDC stakeholders involved in surveillance and response. At NaSORM meetings, stakeholders reviewed 7-1-7 timeliness milestone dates, discussed bottlenecks to timely action, and validated improvement plans.

Results

Between December 2022 and June 2023, NRRTs were deployed to states for two diphtheria and six Lassa fever outbreaks. 75% of the events met the 7-day target for detection, 75% met the 1-day target for notification, and 50% met the 7-day target for early response. Overall, 37.5% of events met all three targets, an improvement from a retrospective analysis of eight events in which 12.5% met all three targets. Identified bottlenecks included weak state-level laboratory capacity for infectious disease confirmation, lack of national guidelines for diphtheria surveillance and response, scarcity of ribavirin tablets for Lassa, and inadequate funding for risk communication and community engagement activities. Actions were taken to address all these bottlenecks.

Conclusions

By measuring performance against clear targets, 7-1-7 provided a simple framework to identify and communicate existing capabilities and gaps to stakeholders. Integrating the 7-1-7 target into existing workflows resulted in improvements to Nigeria's health security.

2153

Leveraging Africa CDC efforts to comply with the international Bio-safety and Biosecurity initiatives for a secure and safe Africa: The experience from the Eastern African Region.

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Keywords

Bio-safety, Biosecurity, Bio-risk, Waste management

Introduction

Recognizing the limited capacity on Biosafety and Biosecurity (BSBS) among African Union (AU) Member States (MS) highlighted by the WHO Joint External Evaluation (2016), Africa Centers for Disease Control (ACDC) launched the BSBS Initiative in 2019 to build capacity to comply with international requirements. To improve BSBS practices, ACDC developed the regional training and certification program. The authors present progress to date in the implementation of the Regional Training and Certification Program for BSBS in the Eastern Member States (EMS).

Methods

A BSBS Technical Working Group (TWG) and an Examination and Certification Committee (ECC) were formed. Professional training and certification curriculum was developed and Regional Centers of Excellence for BSBS (RCoEBB) was established in Tanzania at the National Public Health Laboratory to host the regional training and certification program (TCP). Training was then conducted for training of trainers (TOTs) on Bio risk Management (BRM), Biological Waste Management (BWM) and Regulatory and Certification Framework for Institutions Handling High Risk Pathogens.

Results

Online coordination and sensitization meetings were carried out for the BSBS TWG members. TOTs were done for 59 laboratory professionals trained trainers from the EMS. Of these, 23 participants representing 12 countries trained on BRM, 21 (91.3%) were from the human and 2 (8.7%) from the animal sector. Subsequently, 25 participants from 13 countries trained on BWM, 22 (88%), 2 (8%) and 1 (4%) were from the human, animal, and environmental (HAE) sector respectively. Finally, 11 participants from 5 countries trained as implementers of the Regulatory and Certification Framework for Institutions Handling High Risk Pathogens, 8 (72.7%), 2(18.2%) and 1(9.1%) were from the HAE sector respectively.

Conclusions

Capacity to implement BSBS requirements in the EMS is being built using standardized professional TCP. To ensure sustainability, support for continued operation of the RCoEBB and for cascading training in-country is required.

2249

Health Worker Resilience in the Face of Climate Change - A review of published literature and compilation of recommendations which can be applied to the Zambian context

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Keywords

Climate change, Health Worker Resilience

Introduction

Climate change is defined by the United Nations Climate Action as long-term shifts in the earth's temperatures and weather patterns. Climate change has health effects which include increases in water borne and vector borne infectious diseases, allergic diseases, malnutrition, health-related illnesses, storm surge-related injuries and increases in mental illnesses, self-harm, and injuries. Health workers are expected to address these health effects of climate change in their facilities but are often not well prepared to do so effectively.

Methods

A review of 33 published pieces of literature was conducted to identify health worker resilience tools which can be applied to the Zambian context. These included scientific journal articles on climate change and health and global guidelines from organisations such as the Centre for Climate Change Communication, the Global Climate and Health Alliance as well as the World Health Organisation.

Results

The literature reviewed had recommendations of tools which health workers could use to increase their resilience in the face of climate change in several parts of the world. The recommendations which would be applicable to the Zambian context fell in two themes of Gaining Factual Knowledge and Action. As part of gaining factual knowledge, sub-themes identified were Health Worker Education (climate change,

effects, mitigation), Health Worker Communication (health workers well informed of imminent local climate events). As part of action, the sub-themes identified were Health Worker Wellness (continuous physical and mental health work) and Availability of Resources (institutional and personal protective equipment).

Conclusions

The main recommendation is that multiple organisations in Zambia, such as the Ministry of Health, Ministry of Green Economy and Environment, Zambia National Public Health Institute, Health Professions Council of Zambia, Nursing and Midwifery Council of Zambia, the Zambia Medical Association and Health Training Institutions collaborate to develop and implement a National Plan for Health Worker Resilience in Climate Change.

2266

Achieving nutrition goals through sustainable financing in Nigeria: Employing a multisectoral and participatory action strategy, July, 2023.

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Keywords

Multi-sectoral strategy
Sustainable financing
Nutrition financing
Financing Framework.

Introduction

Despite the nationwide plans to integrate nutrition initiatives across all sectors, inadequate funding persists as a challenge to sustainable financing for nutrition in Nigeria. This initiative aims to assist the government in creating a sustainable financing framework for nutrition, via a multisectoral approach.

Methods

The initiative engaged other governmental, civil societies, and implementation partners as collaborators. It was implemented with 14 representative states, to represent all six geopolitical zones. The comprehensive approach involved desk reviews, stakeholder interviews, and participatory workshops across sectors implementing nutrition initiatives in these states. Desk reviews and interviews assessed funding, challenges, and coordination across sectors. The findings guided project enhancements ensuring holistic consideration of financing nuances. Through participatory workshops,10-15 participants per state met to co-develop their state-level financing frameworks, facilitated through intuitive tools and templates. These workshops effectively shaped state-level financing frameworks using intuitive tools and templates.

Results

Sustainable financing frameworks were successfully developed for all 14 states, articulating funding needs across sectors. This framework has five elements that can ensure improved and sustainable financing for nutrition:

- Mainstreaming within annual planning and budgeting: Identified processes and tools to elevate and optimize nutrition within sectoral budgets
- Benchmarking: Set nutrition financing benchmarks for states by sector and source
- External Resource mobilization planning: Identified priority and realistic sources of financing, set targets and action steps to achieve goals.
- Tracking and accountability: Determined ways to track progress and hold sectors and partners accountable
- Effective advocacy planning: Identifying ways to elevate the nutrition message at high levels.

The collaborative state efforts across sectors in crafting this resource were instrumental in advancing their nutrition objectives.

Conclusions

Employing multisectoral mechanisms proves both viable and sustainable in attaining nutrition goals. Nevertheless, embedding nutrition activities effectively within sectors' annual processes, securing commitments, and instituting accountability mechanisms for goal tracking remain imperative.

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Public Awareness and Understanding of Climate Change in Nigeria: Implications for Public Health Practices

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Keywords

climate change, public awareness, perception, understanding, public health, Nigeria

Introduction

Climate change is a significant global challenge with profound implications for public health in Nigeria. This paper aims to examine the level of public awareness and understanding of climate change in Nigeria, identifying the gaps and opportunities for enhancing climate literacy.

Methods

A convergent parallel mixed-method approach was used in this study. A cross-sectional survey involving 3587 respondents was conducted to gather quantitative data, while qualitative data on the subject was gathered through In-depth interviews. The study was conducted in both rural and urban areas in six purposively selected states, representing the geopolitical zones in Nigeria. Quantitative data was analyzed using descriptive and inferential statistics such as ANOVA and binary logistics, while deductive and inductive methods were employed in the thematic analysis of qualitative data.

Results

About 91% of the respondents had a commendable grasp of climate change. The level of awareness of climate change was significantly related to level of education ($r = 0.317$, $p < 0.001$) and average monthly income ($r = 0.132$, $p < 0.001$), with a good number reporting learning about climate change through traditional media channels. Despite high levels of education, misconceptions and knowledge gaps exist across demographic groups. Some of the respondents mentioned that the impact of climate change was limited to only global warming while others thought it solely affected affluent individuals. This pattern of findings among this group of respondents has the potential to foster indifference towards proactive climate action.

Conclusions

Contrary to prevailing assumptions, the level of climate change awareness in Nigeria is relatively high. However, our in-depth interviews reveal that there are misconceptions that could hinder their knowledge from translating to active participation in climate action. As climate change increasingly intersects with public health concerns, targeted efforts are needed to address misconceptions, enhance climate literacy, and promote accurate understanding among diverse demographic segments.

2325

Feasibility of Task-shifting for Covid-19 Antigen Rapid Diagnostic Testing in Malawi: lessons for pandemic preparedness

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Keywords

Task-shifting, Covid-19, Antigen RDT, testing

Introduction

Wide and prompt COVID-19 testing has been shown to effectively help break the COVID-19 chain of transmission by rapidly identifying and isolating cases from communities. In order to expand testing coverage and reduce turnaround times, Malawi adopted task shifting of Covid-19 antigen rapid diagnostic testing (AgRDT) to non-laboratory health care workers (HCWs) in 2022

Methods

Over 1,000 HCWs (clinicians, nurses and health surveillance assistants) were trained on Covid-19 AgRDT in January 2022 across the country. In addition, the HCWs were trained on and provided with printed registers and a smart phone-based application, Sympheos, for data recording and reporting. Following the trainings, mentorship visits were conducted at 339 selected sites in June and July 2022 to assess and hone HCWs workers knowledge and skills.

Results

The AgRDT task shifting project led to the opening of an additional 80 testing sites that did not have laboratory personnel. Furthermore, it helped reduce workload of laboratory staff in facilities that already had laboratories. During mentorship visits, 96% of 275 HCWs assessed demonstrated good command of knowledge and skills on all important testing steps, indicating great retention of content from the task-shifting trainings they received. 56% of the 339 sites were found still active. Key challenges reported by the 44% non-active sites included lack of dedicated physical space for sample collection, stock out of supplies and low demand from the community influenced by low positivity rate and limited awareness.

Conclusions

Conclusion Task-shifting is a feasible model for scaling up Covid-19 testing, particularly in settings with acute shortage of technical laboratory personnel. We recommend a holistic approach when rolling out task shifting by making sure that interventions to strengthen supply chain, infrastructure, and community mobilization campaigns to raise awareness on test availability and debunk myths and misconceptions around COVID-19 are included in the task shifting package.

2339

Chemical events capacity building in Africa via establishment of Chemical Technical Working Groups

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Keywords

Chemical, multi-sectoral, capacity building, environmental, networks

Introduction

The International Health Regulations (IHR) require that WHO Member States are prepared and able to detect, respond and undertake surveillance for environmental public health risks. This piece presents an approach to improving capacity through chemical and environmental public health system strengthening via the formation of national Chemical Technical Working Groups (CTWG's), with our partner countries in Ethiopia, Zambia and Nigeria.

Methods

In the early stages of chemical projects UKHSA have worked closely with National Public Health Institutes (NPHIs) and Ministries of Health to establish CTWGs with stakeholders from across national governments, including environmental health, environment, industry and investment, (e.g. mining), poisons centres, academia, chemical laboratories, emergency services and disaster management. Terms of reference and governance is agreed at the outset and workplans drafted with specific operational activities.

Results

CTWG's have been formed in all 3 partner countries with slightly varying remits depending on stakeholder and public health issues in country but all primarily focused on chemicals and management and public health. In Nigeria activities have increased focus on surveillance, in Zambia the group covers radiological incidents whilst in Ethiopia there is a remit across CBRN. The CTWG's have enabled discussion on the management of ongoing chemical events and CTWG activities have included the development of chemical surveillance guidelines, chemical response plans, chemical laboratory surveys and simulation exercises.

Conclusions

Chemical expertise in African countries is often spread across numerous stakeholders across government which can lead to limited co-ordination and communication. The CTWG approach has started to address some of these issues to strengthen response to environmental public health via a One Health and All Hazards approach. When combined with other sustainable activities, such as integration of Environmental Epidemiology FETP training and establishment of poisons centres, it offers a valuable model for strengthening environmental public health capacity across Africa.

2373

Surfacing and Capturing Learning: Lessons Learnt from Launching a Technical Assistance Project for Enhancing Global Health Security in South Africa

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Keywords

partnership building, lessons learnt, global health security, South Africa

Introduction

Like many countries, South Africa (SA) has recently faced recurrent and multiple emergencies. The International Health Regulation (IHR) (2005) obligates WHO member states to strengthen their capacity to improve prevention, detection, and response to disease threats. To fulfil this IHR requirement, SA, through the National Department of Health (NDoH),

establishes a Public Health Emergency Operation Centre (PHEOC). In May 2023, Jhpiego - SA launched a Technical Assistance initiative funded by the US CDC to Enhance Global Health Security (GHS); through supporting the planning and implementation of the strategy for health security and emergencies. This paper aims to document lessons learnt from launching the CDC GHS Project in SA.

Methods

We applied a qualitative reflexivity approach to elicit lessons learnt during the inception phase of a CDC GHS project in SA. This exercise was conducted during regular meetings by the three-project team (TR, TL and ZB) over 4 months (June-August 2023). The goal was to orient personal, interpersonal, methodological, and contextual project implementation issues faced to strengthen outcomes.

Results

At project inception, what worked was fostering relationships with key collaborative partners, including holding consultative meetings with the NDoH to assess their needs in emergency preparedness and response and the funder. What did not work was later experiencing a mismatch between initial project assumptions among all stakeholders involved, causing tension. Another challenge experienced was engaging with only one directorate at the national level during a needs assessment limiting scope. However, the CDC GHS team was agile enough to respond to the changing priorities while keeping in mind the bigger picture.

Conclusions

Finding differences between project implementation vis-a-vis the conceptualization phase is not uncommon, as several assumptions are made during proposal development. In future, there is a need for a wider government engagement at consultation phases, as opposed to a single directorate; for more meaningful technical assistance.

2375

Reimagining Africa's Commitment to the Biological Weapons Convention

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Keywords

Biosafety, Biosecurity, Biological Weapons Convention, biological weapons

Introduction

The Biological Weapons Convention (BWC) has been ratified by 89% (49/55) of African Union (AU) Member States (MS), with six yet to ratify the BWC (with two signatories and four that have not signed). Africa CDC sought to establish the status of universalization and national implementation of the convention with the aim of developing a guideline for universalisation and effective national implementation of the convention among AU MS.

Methods

The methods adopted included desktop searches, direct communication with experts and an in-person workshop. Data collected from desktop searches was collated into country reports that were later validated through direct communication and the in-person workshop by representatives from BWC National Focal Points (NFP) or country experts.

Results

The findings show 63% of MS have designated NFPs. Most States have legislation elements applicable to the BWC, that is multi-sectoral. While most MS have provisions related to anti-terrorism, there is generally limited legislation on biosecurity, dual-use and biocrimes. Sixteen States are yet to submit confidence building measures (CBMs), with 10 of the 16 having ratified the BWC between 1975 – 1980. Some of the challenges and barriers identified included limited awareness, lack of motivation and competing priorities. This study expounds the contextual factors that promote or limit the full implementation of BWC. Considering the influencing factors informed by African values and needs to motivate the ratification and implementation of the BWC, a four-step guideline including: commitment, Gap analysis, Action-plan, and full implementation was developed.

Conclusions

Africa has several endemic diseases and has ongoing infectious disease health events, with some events involving high consequence pathogens. Public health, biosafety and biosecurity measures are therefore essential to ensure a safe and secure continent. Provisions to ensure that the malicious use or proliferation of biological weapons is prohibited are imper-

ative and can be promoted through the full implementation of BWC.

2377

Mapping the Public Health Intelligence Landscape in Africa, 2023

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Keywords

public health intelligence, epidemic intelligence, event-based surveillance, early warning and threat detection, Africa

Introduction

Public health intelligence (PHI) aims at early detection of public health threats, for which cooperation between PHI teams is key. A comprehensive overview of PHI teams' activities and needs can facilitate collaboration and continuous capacity building. We mapped PHI teams in Africa in order to characterize their activities and increase exchange possibilities.

Methods

We developed a multilingual online survey and distributed it by e-mail through public health networks with international outreach, including Africa CDC's communities of practice. We identified and characterized PHI teams in African Union Members States (AU MS) by institutional context, tasks, and networking activities.

Results

We identified PHI teams in 62% (34/55) of AU MS alongside 2 international organisations (Africa CDC, WHO). Most teams are based in national health institutions (33%, 20/60), ministries (28%, 17/60) and NGOs (13%, 8/60). Early detection is performed to inform response activities (88%, 53/60), risk assessments (78%, 47/60), and policymakers (75%, 45/60). 47% (28/60) monitor events at national, 22% (13/60) at international and 32% (19/60) at both levels. 95% (57/60) monitor human communicable diseases, 70% (42/60) environmental health, and 68% (41/60) animal health. Information sources vary and include official websites (63%, 36/57), e-mail (58%, 33/57) and newsletters/mailing lists (56%, 32/57). Of responding teams, 54% (12/22) have a multi-sectoral One Health technical working group operationalizing early detection, and 59% (13/22) have a national implementation guideline. 94% (47/50) wish to connect and cooperate with other PHI groups.

Conclusions

The majority of AU MS have PHI teams. Information sources and hazards monitored vary, but they pursue the common goal of informing public health response. Overall, a One Health approach is followed in the region. Respondents signalled a keen interest in strengthening cooperation. Africa CDC and partner institutions have the opportunity to foster PHI in the region through capacity building and networking.

2409

Safeguarding Kenya's Health Security: Using a multi-sectoral One Health approach for disease prevention, early detection and control in Narok, Bomet, West Pokot and Tharaka Nithi Counties, January to December 2022.

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Keywords

Community-based surveillance, Community health volunteers, one health approach, Early detection, Early response

Introduction

In the four counties, inhabitants, mainly pastoralists, rear livestock. They often graze in nearby protected forests and game parks, interacting closely with wildlife. This proximity raises significant public health and socio-economic risks, given that most emerging infectious pathogens are zoonotic. This concerns communities in these counties. Hence, the Kenya Red Cross and County governments, aided by the International Federation of Red Cross and Red Crescent Societies and USAID funding, initiated the Community Epidemic/Pandemic Preparedness and Response Program in 2018 which aims to showcase how one-health community-based surveillance detects and addresses disease threats early, alongside multisectoral collaboration for improved animal vaccination. This strategy curbs diseases and protects livelihoods.

Methods

In 2022, CBS and animal vaccination data were analyzed. The data is generated by trained community health promoters

who pick and report alerts on health risks at their villages and which are in return verified by their supervisors using community case definitions as true disease events for investigation. We also analyzed animal vaccination data on the number of antigens administered during ring vaccination exercises organized by stakeholders through the County One Health Committees.

Results

A total of 1,083 alerts (318 human and 765 animal) were detected by trained community health promoters and reported through the USSD CBS platform. 44% of these alerts were verified as true based on community case definition. The health risks included 194 animal rabies and 23 animal anthrax which translated to 121 animal rabies and 13 animal anthrax confirmed through Laboratory diagnosis. As a response, 4606 animals were vaccinated against anthrax while 10,480 dogs were vaccinated against rabies.

Conclusions

These findings underscore the critical role of CBS and collaborative efforts in addressing public health threats promptly. It is recommended that such surveillance and vaccination initiatives continue and are further strengthened to enhance preparedness and response to emerging health risks.

2419

Are healthcare workers reluctant to abide by national COVID-19 vaccine guidelines in Côte d'Ivoire? Results from health facilities survey in Abidjan in 2023

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Keywords

COVID-19, Vaccine, Health care worker, Côte d'Ivoire

Introduction

Controlling the COVID-19 epidemic relied on the availability and acceptability of an effective vaccine for vulnerable communities such as healthcare workers (HCWs). However, challenges in vaccine access and public mistrust have slowed their uptake. This study aimed to identify the barriers and enhancers of COVID-19 vaccination uptake amongst Ivorian HCWs.

Methods

A cross-sectional survey was conducted amongst HCWs purposively selected in Abidjan from 11 urban public health facilities from May to June 2023. HCWs responded to an interviewer-administered questionnaire. Descriptive statistics on barriers and enhancers of COVID-19 vaccine uptake were obtained as frequencies and percentages. Data were analyzed using STATA v18.

Results

Data were collected on 240 HCWs, of whom 57.5% were women. The median age (Interquartile range) was 40 (33-45) years. Overall, 73.3% of the respondents had received at least one dose of the COVID-19 vaccine, 53.3% were fully vaccinated, and 4.6% received a booster dose. Among vaccination barriers, most (51.6%) HCWs worried about side effects and effects on motherhood. Although 55% of the HCWs would recommend the vaccine to the community members and patients prioritized receiving it, only 35.1% were confident they could answer patient questions about COVID-19 vaccines available in Cote d'Ivoire. Among the respondents, 60.4% expressed trust in COVID-19 vaccination information provided by the Ministry of Health. However, more information on vaccine safety and efficacy is needed, as 61.4% of HCWs believed it would help them decide to get vaccinated or boosted.

Conclusions

Concerns about vaccine safety were the primary drivers of low vaccine uptake in HCWs, and most HCWs surveyed would recommend the vaccine to others in the community. Ministry of Health-led efforts in educating HCWs about the safety of vaccines and local research on their effectiveness could increase vaccination rates and confidence among HCWs.

2420

Cross border population movement patterns in three East African countries: implications for global health security, November, 2022

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Keywords

PopCAB Uganda, border crossings, Kenya, Rwanda

Introduction

Population mobility increases the risk of spread of disease threatening global health security. An understanding of population movement patterns is critical for improving early detection and response to health threats across borders. We assessed population mobility patterns in three East African Member states to inform cross border interventions.

Methods

We conducted Key Informant Interviews (KIIs), Focus Group Discussions (FGDs) with participatory mapping using Population Connectivity Across Borders (PopCAB) toolkits to map mobility patterns across 3 common border points for Rwanda, Uganda, and Kenya. Participants of the KIIs were purposively selected from the border districts and county health officials . The FDG participants were identified from border communities and travellers. We used a topic guide during interviews .Data were analysed using grounded theory approach in Atlas 7 software.

Results

Different age groups travelled across borders for various reasons. Young persons aged 6-15 years travelled across the border for education, 15-30 year for trade, social reasons, employment opportunities, agriculture and mining. While those >45 years mainly travelled for healthcare and social reasons. Other common reasons for crossing the borders included religious and cultural reasons. There were monthly fluctuations in the number of travellers crossing dependent on agricultural, religious, cultural seasons and festivities. Respondents reported using both official (4 Kenya-Uganda and 5 Rwanda-Uganda borders) and unofficial border points (14 Kenya-Uganda and 20 Uganda-Rwanda) for exit and entry at the borders. Unofficial points of entry were preferred because they had fewer restrictions related to absence of screening, immigration and customs checks. Key destination points included: markets, health facilities, places of worship, education institutions, recreational facilities and business towns.

Conclusions

We identified complex population movement and connectivity patterns along the borders of Rwanda, Uganda and Kenya. These findings were used to guide cross-border disease surveillance and other border health strategies including community-based surveillance especially along unofficial Points of Entry.

2492

Sustaining COVID-19 Vaccine Uptake in Drought and Flood Affected Zones of Kenya and South Sudan: A Cross-Sectional Study

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Keywords

Climate change, Integration, COVID-19, Vaccination

Introduction

The Saving Lives and Livelihood (SLL) program by Africa CDC and Mastercard Foundation aims to vaccinate 70% of the eligible population across Africa for COVID-19. Extreme weather events—droughts and flash floods disrupted vaccination efforts in Kenya and South Sudan between November 2022 and May 2023. We assessed how the SLL initiative adapted to drought and flood challenges to maintain equitable access to COVID-19 vaccination.

Methods

A cross-sectional design was used to evaluate the SLL program in Kenya and South Sudan from November 2022 to June 2023, in drought and flood affected sites. Findings are based on the analysis of monthly reports and discussions with SLL program stakeholders. Innovations assessed included integration of COVID-19 vaccination during livestock market days, food distribution and deployment of mobile vaccination clinics (MVCs). South Sudan deployed "floating vaccinations" using canoes and speedboats to access displaced communities, integrated with the supply of Water, Sanitation and Hygiene non-food items and food distribution.

Results

Between November 2022 and June 2023, Kenya administered 676,360 COVID-19 vaccine doses, and South Sudan administered 119,213 vaccine doses. January to June 2023, saw a 34% and 86% dose increase in Kenya and South Sudan, respectively, partly due to integrating vaccination with humanitarian assistance. In Kenya, 142 outreaches were combined with food distribution, and 55 mobile vaccination clinics were deployed.

Conclusions

Adaptive strategies that integrate existing humanitarian efforts are vital for sustaining equitable access to COVID-19 vaccinations during droughts and floods. Partnerships between Amref Health Africa, Kenya and South Sudan Red Cross and WFP, proved effective in addressing immediate community needs such as food distribution. Recommendations include enhancing preparedness by integrating health programs with early warning and weather forecast systems and acquisition of specialized transport to improve vaccine delivery. Additional research is needed to evaluate logistical challenges in integrating vaccination and humanitarian efforts.

2509

Vaccine uptake, Barriers and enhancers of COVID-19 vaccination among healthcare workers in Ethiopia

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Keywords

COVID-19 vaccination, vaccine uptake, Health care workers, Ethiopia

Introduction

The COVID-19 pandemic has been a significant global public health challenge. With the recent re-classification of the COVID-19 response by WHO, healthcare workers (HCWs) have been prioritized for COVID-19 vaccination as they remain at higher risk due to the nature of their work. We conducted this study to determine uptake, barriers, and enhancers for COVID-19 vaccination among HCWs in Ethiopia.

Methods

A cross-sectional survey was conducted among 600 HCWs from 30 Health Facilities in Addis Ababa and Adama between May and July 2023. Data were entered in REDCap, exported, and analyzed using STATA 14. Descriptive statistics were generated as frequencies and modified Poisson regression determined the associated factors, estimating the Prevalence Ratio (PR) with a 95% confidence interval.

Results

The median age of HCWs was 30 (IQR: 27-34) years, and the majority were female (342/600, 57.0%). Most respondents had received at least one vaccine dose (70.3%), and 39.2% had received a booster. Furthermore, 47.2% (172/365) expressed concerns regarding vaccine safety, particularly potential side effects. Among this group, 44.2% indicated that information about the vaccine's safety and effectiveness, and full regulatory approval (22.76%), would influence their decision to receive the vaccine. However, 15.71% did not intend to get vaccinated, regardless of any intervention. Although 64.8% of HCWs had confidence in vaccination against other infectious diseases, only 35.7% had the same confidence in COVID-19 vaccination. Radiographers and anaesthetists were 23% less likely with PR=0.78 (0.623, 0.976) to get vaccinated compared to physicians. Compared to those aged 20-24, HCWs above 25 were twice as likely to get vaccinated.

Conclusions

Confidence in the COVID-19 vaccines and uptake is still low in the surveyed population. Younger healthcare workers (HCWs) emerged as priority groups for targeted engagement, to enhance healthcare professionals' confidence in recommending vaccinations.

2598

Moonlight vaccination to enhance uptake of COVID19 vaccination of Muslims during Ramadan 2023 in Djibouti: A before and after cross sectional study.

Runner Up - Best Oral Abstract Presentation

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Keywords

Moonlight vaccination, COVID19 vaccination, Ramadan, Djibouti, Eastern Africa

Introduction

Ramadan, a holy Muslim month of fasting begun on March 22nd,2023 when COVID19 was still a Public Health Emergency of International Concern necessitating to vaccinate 70% of the population coinciding with temperatures of 40-50 degrees Celsius in a predominantly Muslim country, Djibouti. Trekking to vaccination centres in daylight hours was minimal due to religious misconceptions and hot temperatures.To assess effectiveness of moonlight vaccination (MV) on COVID19 vaccine uptake in PK12 and Hayabley in Djibouti during Ramadan from 22nd March to 27th April 2023.

Methods

MV by health workers occurred during 3rd- 27th April 2023 from 7-11pm around areas of convergence after Muslim evening prayers at Mosques, markets and bus stations located in PK12 and Hyabley, Djibouti. Air conditioner cars were used to transport and supplement the vaccine carriers in keeping vaccines at optimal temperatures and power the printer to print vaccination certificates. Risk communication and community engagement (RCCE) was undertaken by volunteers and sheikhs using loudspeakers, printed materials, and physical communication. A before and after cross sectional study using DHIS2 and partner reports were used to assess effectiveness of MV on COVID19 vaccination uptake.

Results

In the first two weeks of Ramadan, COVID19 vaccination uptake plummeted from 927 to 424 persons vaccinated thereafter increasing by 140% during MV with the highest being 1019 persons vaccinated (Range =595). The RCCE number of persons reached were 1,578 at start of Ramadan increased by 132% to the highest recorded of 3,667 persons during MV (Range=2,099 Mean =2,550).

Conclusions

Moonlight vaccination was an effective innovation to overcome challenges of vaccinating Muslims during Ramadan in the hot weather of Djibouti. We recommend scaling of Moonlight vaccination of vaccines in Ramadan and integration into routine immunization in hot weather countries with budgetary considerations of fuel, mobilizers and health workers stipends to motivate them during the night outreaches.

2715

Safeguarding Africa's Health Security: Repurposing the African Union COVID-19 Vaccination Bingwa Initiative for a Prolonged and Sustainable Impact

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Keywords

Youth Engagement, Bingwa Initiative, Sustainability, Impact, Program Remodeling

Introduction

The Africa CDC and the Women, Gender, and Youth Directorate of the African Union (AU) are co-leading the Bingwa Initiative, a 12-month public-private youth initiative. Its goal is to establish a continent-wide network of COVID-19 vaccination youth champions, speeding up uptake to reach 70% continental vaccination. There is a need for repurposing this initiative for lasting impact, sustainability, and to significantly contribute to the implementation of the New Public Health Order (NPHO) and Africa CDC Strategic Plan 2023-2027. This study identified potential public health areas that the Bingwa Initiative could be repurposed for using the socio-ecological model (SEM) or Hart's ladder of youth engagement.

Methods

YouthPower, a USAID-supported online database on positive youth development, and the UN's databases were searched systematically until August 25, 2023, for public health youth engagement projects that used SEM, or Hart's ladder of youth engagement. The search excluded emergency response,

COVID-19, and vaccination youth initiatives. Public health issues that these initiatives were focused on were identified, analyzed and models were proposed for the repurposing of Bingwa Initiative for these public health problems.

Results

The study identified four projects that could be modelled and integrated into the Bingwa Initiative following the SEM and Hart's ladder of youth engagement. These projects cumulatively featured specific and generalized areas of public health that the Bingwa Initiative could be repurposed for, including HIV/AIDS, mental health, drug abuse and addiction, sexual and reproductive health, and public health policy.

Conclusions

Several options exist to repurpose the Bingwa Initiative using SEM and Hart's ladder of youth engagement. Yet, designing an implementation strategy for these options is necessary for proof of effectiveness. This study underscores Bingwa's potential to expand impact by stressing adaptive, sustainable approaches to public health interventions and to facilitate the achievement of the NPHO and Africa CDC Strategic Plan.

Track 6: Transforming Health in Africa through Digital Innovation

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Transforming Healthcare Accessibility in South Western Uganda through Telemedicine Interventions.

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Keywords

Telemedicine, Health Care Accessibility, Underserved Communities, Equitable Health Care

Introduction

This research investigates the impact of telemedicine on healthcare accessibility in South Western Uganda, addressing the region's remote healthcare challenges. The study seeks to evaluate the effectiveness of telemedicine interventions in improving access to medical services, thereby enhancing overall healthcare outcomes for underserved populations.

Methods

This cross-sectional study was conducted over two years, from January 2021 to December 2022. The research setting encompasses various healthcare facilities across South Western Uganda, both rural and urban.

The study population includes patients who engaged with telemedicine services during this period, with a focus on those residing in remote areas.(n=500)

Eligibility criteria encompass individuals of all ages seeking medical consultation and treatment through telemedicine platforms.

Quantitative data was extracted from patient records, analyzing usage patterns, types of medical concerns addressed, and patient demographics.

Qualitative data was gathered through structured interviews with healthcare providers to gain insights into the benefits and challenges of telemedicine implementation.

Results

Quantitative analysis of patient records reveals that 50% sought consultations for chronic disease management, 30% for minor injuries, and 20% for general medical concerns. Additionally, among the telemedicine users, 40% were aged 18-30, 35% aged 31-50, and 25% aged 51 and above. This distribution underscores inclusivity of telemedicine across various age groups.

Quantitative analysis indicates patient satisfaction levels were high, with 325 patients expressing satisfaction with the services, representing 65% of the total sample.

Conclusions

This study underscores potential of telemedicine to revolutionize healthcare accessibility in resource-limited areas like Southwestern Uganda.

The findings highlight telemedicine's ability to surmount geographical barriers and provide timely medical assistance, especially in underserved communities and advocates for the integration and expansion of telemedicine initiatives within the existing healthcare framework to ensure equitable healthcare access.

Challenges such as technology literacy and connectivity need to be addressed to maximize telemedicine's impact and foster accessible and effective healthcare delivery.

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Performance of a new artificial intelligence-based tool for cervical cancer screening in a five-country African collaborative

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Keywords

cervical cancer, artificial intelligence, HPV

Introduction

Cervical cancer is preventable but kills 300,000 women annually, almost entirely in low- and middle-income countries (LMICs). Visual inspection of the cervix using acetic acid (VIA) remains a common screening method due to low cost and feasibility but has suboptimal accuracy. A new artificial intelligence-based tool for screening – Automated Visual Evaluation (AVE) – analyzes a smartphone cervical image. AVE was evaluated AVE for diagnostic accuracy through prospective observational studies in five African countries.

Methods

Participating government clinics in Malawi, Rwanda, Senegal, Zambia, and Zimbabwe convenience sampled eligible women from March 2022 through February 2023 per national guidelines and administered human papillomavirus (HPV) testing, VIA, and AVE. Screen-positive women received cervical biopsy and appropriate treatment; histopathology of cervical intraepithelial neoplasia 2 or greater (CIN2+) served as reference standard for case status.

Results

24,458 women were enrolled, of whom 39% were living with HIV. Among 21,944 women with three valid screening results, 10,529 (48.0%) women were positive on at least one test: HPV: 31.1%; AVE: 23.9%; VIA: 9.0%. Of 17,478 women with a confirmed final status, 475 (2.7%) had CIN2+. Sensitivity (Se) and specificity (Sp) for CIN2+ are: HPV Se=88.5% [95% Confidence Interval (CI): 85.3%-91.2%]; HPV Sp=80.5% (95% CI: 79.9%-81.1%); AVE Se=62.2% (95% CI: 57.6%-66.5%); AVE Sp=82.0% (95% CI: 81.5%-82.6%); VIA Se=36.2% (95% CI: 31.9%-40.7%); VIA Sp=94.2% (95% CI: 93.9%-94.6%). AVE has superior sensitivity to VIA ($p<0.01$).

Conclusions

AVE's superior sensitivity to VIA, with moderate loss in specificity, offers the potential to feasibly and affordably increase cervical precancer detection in LMICs. High HPV and CIN2+ prevalences are influenced by high HIV prevalence among participants; the disease burden underscores the importance of population-based screening and treatment in LMICs. While HPV testing remains the most sensitive test for precancer, cost prohibits many programs from scaling up. AVE has the potential to screen additional women and save lives.

540

Mapping Zero-Dose and Under-Immunized Children in Cameroon: The Use of Geospatial Technology to Enhance Vaccination Equity

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Keywords

zero-dose, under-immunized children, missed communities, geospatial analysis, Cameroon

Introduction

Cameroon faces significant challenges in achieving the goals outlined in the Immunization Agenda 2030 (IA20230). Moreso, Cameroon was among the top 15 countries contributing to 86% of 7.3 million estimated zero-dose children (ZDC) before the pandemic. The direct impact of the COVID-19 pandemic has worsened this situation, with an almost 13% rise in ZDC. To address this equity gap, an extensive identification and mapping of ZDC, under-immunized children (UIC), and missed communities were undertaken using geospatial technology.

Methods

Model-based estimates of DTP-1 and DTP-3 coverage were derived from survey data, bias-corrected administrative data, and geospatial location by the Institute for Health Metrics and Evaluation (IHME) from 2019 to 2021. The corresponding under-1 population was used to calculate the number of ZDC and UIC based on geographical boundaries and population density data by World Pop estimates. Adjustments were made to IHME estimates using statistical analysis by compar-

ing them against administrative data in DHIS-2, considering potential under-sampling and sensitivity limitations to annual trends. QGIS was used for access analysis using GRID3 data and classifying communities as missed communities - heat maps were used to illustrate their distribution.

Results

The geospatial analysis revealed the distribution of 258,413 ZDC, 337,824 UIC, and 176,192 missed communities across Cameroon. High-priority districts were ranked based on the concentration of ZDC, and priority regions were identified in the top 30%. This ranking will assist Cameroon in prioritizing resources and implementing effective strategies to reduce the number of ZDC and UIC, in line with the country's national immunization strategy.

Conclusions

Through the application of geospatial technology and visualization, this study successfully quantified and located ZDC and UIC in Cameroon. These findings are invaluable for enhancing vaccination equity, particularly as the country navigates its recovery from the COVID-19 pandemic and strives to improve overall immunization coverage.

963

An open digital health innovation business model to accelerate universal access to healthcare in Western and Central Africa

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Keywords

Digital health innovation, Healthcare, Open Business Model, Collective Value Creation

Introduction

In Western and Central Africa (WCA), access to healthcare is marred by various challenges, leading to some of the lowest health indicators globally. Leveraging Information and Communication Technology (ICT) can offer novel pathways to address this issue. This study aims to identify the essential building blocks for a successful ICT-centric business model to accelerate universal healthcare access in the WCA region.

Methods

A mixed-methods research design was adopted, comprising a survey, in-depth interviews, and an embedded case study. The survey involved 45 respondents knowledgeable about 17 WCA countries. Additionally, 16 interviews were conducted with stakeholders from various sectors, including healthcare, technology, and policy. Data were analyzed using both quantitative and qualitative approaches.

Results

Survey and interview findings indicate a complex and varied ICT-centric innovation ecosystem across WCA countries. Key triggers and drivers for ICT-centric healthcare include national and international entrepreneurs, end-users, and international organizations. Political and technical choices concerning third-party involvement, open data, and community engagement emerged as critical factors influencing the success of ICT-centric healthcare models. Preliminary findings suggest that multi-stakeholder involvement can yield positive outcomes, including improved healthcare access, job creation, and social inclusivity.

Conclusions

The study emphasizes the role of an ecosystem-based, multi-stakeholder approach in leveraging ICT for healthcare in WCA. The political and technical choices made by involved parties significantly impact the overall success of such initiatives. Recommended public health actions include fostering collaborations among stakeholders and adopting a systemic approach to encourage joint endeavors aimed at enhancing healthcare access through ICT-centric innovation.This abstract is a condensed version and falls within the 300-word limit. It aims to encapsulate the primary essence of your detailed research abstract, as per the specified conference requirements.

1005

Tuberculosis Active Case Finding in Nairobi, Kenya: Utilizing Automated Tuberculosis Self-Screening Machines (ATSM) within the Community

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Keywords

Tuberculosis Active Case Finding, Community, Automated, Self-Screening, Community

Introduction

In 2016, the Kenya National TB Prevalence Survey uncovered a concerning gap, revealing that 40% of the nation's estimated TB cases go undetected. Additionally, a significant 67%

of individuals displaying TB symptoms within the community do not actively pursue treatment. Urban areas, particularly informal settlements with dense populations, carry a greater TB burden. These results showed the need to invest in community-based TB initiatives that promote timely detection and diagnosis of tuberculosis within the community.

Methods

A cross-sectional study was conducted in Nairobi, utilizing mixed methods. Data was collected through document reviews and in-depth interviews with 20 participants. Interviews included health managers from county health departments, public hospitals, and health centers. Qualitative data underwent thematic analysis, while quantitative data were descriptively analyzed. This approach mirrors the method used to assess the impact of tuberculosis case identification.

Results

From 2020 to 2022, the ATSM TB self-screening innovation by Sema Ltd has had a substantial impact on identifying cases in Nairobi. A total of 428,836 individuals underwent screening during this period, revealing 85,757 (19.5%) as potential TB cases. Out of these, 33,769 samples underwent testing, and 939 individuals received thorough clinical assessments. As a result, 1,814 instances of tuberculosis were diagnosed, with 1,412 cases (78%) identified through bacteriological means and 393 cases (22%) through clinical evaluation. The number needed to screen (NNS) to detect a single case of TB, across all forms, stood at 236. The project's yearly contribution to case identification across the four TB zones in 2020, 2021, and 2022 amounted to 9%, 10%, and 14%, respectively.

Conclusions

The introduction of ATSM machines has enhanced the detection of missing TB cases, offering screening and diagnosis conveniently for clients and resulting in substantial case identification. This highlights the effectiveness of a strategy that involves bringing healthcare services closer to the community through digital innovation.

1125

Enhancing Cardiovascular Disease Triage and Referral in Resource-constrained Settings in Siaya, Kenya, through Tele-Electrocardiography and Point of Care Cardiac Ultrasound, 2022–2023

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Keywords

Non-communicable diseases; cardiovascular diseases; Point of care electrocardiography and echocardiography; Innovative technologies; Primary healthcare

Introduction

Background: Non-communicable diseases (NCDs) morbidity and mortality in Kenya are increasing, with cardiovascular diseases (CVDs) accounting for 25% of hospital admissions and 13% of deaths, yet the investment in CVD diagnosis and management remains underachieved. Strengthening primary healthcare (PHC) providers and introducing innovative technologies at Level III facilities offers the potential to reduce the CVD burden by up to 80%.

Objectives: This project aims to demonstrate the feasibility and advantages of integrating tele-ECG and point-of-care (PoC) cardiac ultrasound at the PHC level to facilitate effective triage, early detection, and referral of CVD patients.

Methods

Methods: The 'MoyoAfya' CVD care model consists of tele-ECG and PoC cardiac echo,CVD risk scoring, diagnosis, management, and referral at PHC level to enhance implementation of Ministry of Health CVD guidelines. The model is being implemented in five selected PHC facilities, in Siaya County. To showcase the feasibility of the model, the project incorporates a mixed methods study design using a two-arm, quasi-experimental approach. This design involves comparing the five designated project facilities with comparable non-intervention sites.

Results

Results: 32 Level III healthcare providers were trained to perform and interpret POC 12-lead ECGs and cardiac ultrasound. 979 patients have been screened; 228 (23%) underwent ECGs, and 165 (16%) received echocardiograms and were identified as having CVD. The tele-enabled technology has enabled ongoing training of health workers, remote connection with specialist providers for prompt diagnosis and management, and increased the probability of patient follow-up. A cost-benefit analysis is ongoing, and advocacy efforts by people living with CVD have garnered support from the County leadership.

Conclusions

Conclusion: The provision of tele-ECG and Echo technologies at the PHC level improved access to timely detection and referral of CVDs and patient outcomes. Opportunities to amplify the impact of these technologies in primary healthcare are required to reduce CVD morbidity and mortality.

1254

Portable digital X-ray with computer aided detection and the dynamics in active tuberculosis case finding.

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Keywords

Computer aided detection, tuberculosis, genexpert, sputum

Introduction

According to WHO, in 2021, an estimated 10.6 million people fall ill with Tuberculosis worldwide. Nigeria comes third behind India and China in terms of tuberculosis cases with 245,000 deaths and 590,000 new cases. The high burden in Nigeria might be largely due to diagnosis gap. Hence, the introduction of PDX with computer aided detection(CAD); an innovative and sensitive tool by KNCV Nigeria to help close the TB detection, notification, and treatment gaps.

Methods

The PDX with CAD was used for intensive TB case finding in rural communities,urban slums,hard-to-reach areas,health and correctional facilities. PDX was deployed to 20 LGAs out of the 34 LGAs in Katsina state,North west Nigeria.Outreaches and mobilization was done so as to screen consenting individuals from 4years and above, with presumptive TB identified using artificial intelligence(AI) and those with presenting symptoms. On-the-spot sputum was collected in cold packs and transported to the laboratory and tested using Genexpert machine or trunat. TB cases identified from presumptive and placed on treatment via the local government TB focal person.

Results

The PDX with CAD screened a total of 14,231 clients, identified and tested 926 presumptive and diagnosed 342 TB cases; the number needed to test (NNT) was 3, and number needed to screen (NNS 41). These patients were diagnosed mostly in the communities as they were not too ill to have sort help in the hospitals, they would have remained as reservoir for TB for long if not for PDX intervention.

Conclusions

This result have shown the contribution of 1 PDX unit in closing the TB diagnostic gap in Katsina state and also revealed the need for upscale of PDX intervention within the state as LGA coverage stands only at 58% in 1 year.

1298

Piloting a digital malaria clinical mentorship and continuous learning platform in six high-burden malaria districts in Zimbabwe, 2022-2023

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Keywords

mentorship, performance, effectiveness, self-paced, standardized

Introduction

To ensure the provision of high-quality care to malaria patients, Zimbabwe introduced a clinical mentorship program. The program uses highly experienced healthcare providers as mentors to guide improvements in quality of care by less experienced staff. In 2022, Zimbabwe launched a pilot of a digital clinical mentorship platform powered by Moodle for learning, knowledge management, and monitoring and evaluation in six high-burden malaria districts. The digital mentorship platform was set up to address gaps in the paper-based clinical mentorship program such as lack of visibility of mentorship activities and limited tracking of program impact. The platform facilitates communication to complement physical mentorship visits, provides access to all mentorship activities and standardized learning materials with structured recruitment and it aids longitudinal tracking of mentee performance to measure program effectiveness.

Methods

Assessments were customized and malaria case management guidelines were translated into lessons for self-paced learning. 137 mentees and 30 mentors from 30 health facilities were trained and enrolled in the program.

Results

A baseline assessment of the mentees conducted in July 2022 revealed gaps in malaria clinical skills mainly in Laboratory services (mean score of 32%) and Medicines management (mean score of 48%). The overall mentee clinical skills mean score was 60% with 23% of the mentees below 50%. A midline assessment conducted in July 2023 showed an improvement in overall 22% improvement in mentee clinical skills with the mean scores for laboratory services and medicines improving by 19% and 15%, respectively. An endline final assessment will be conducted in November 2023.

Conclusions

Further enhancements include developing an offline functionality for remote settings and implementing a motivation system through continuous personal development points to encourage platform usage. The pilot has shown that open-source learning management systems can be adopted to improve clinicians' knowledge and skills on malaria, potentially contributing to improved quality of care.

1302

The effect of digitalization of data collection tools on data quality.

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Keywords

1.Digitalization
2.Data quality
3.Data collection tools
4.Effect

Introduction

Data collection is a critical component of any successful project. Quality of data collected directly impacts validity and reliability of subsequent analyses and decision-making. With advancements in technology, data collection tools have evolved, offering a wide array of options to collect, store, and manage data efficiently. This abstract delves into the effect of data collection tools on improving data quality, focusing on their capabilities to enhance accuracy, consistency, completeness, and timeliness.

Methods

To curb data quality issues, SLL conducted weekly data verification meetings, daily phone calls, regional data review meetings and DQAs in order to make sure reported data is valid, precise, reliable, timely and integrous.

Digitalization of data was done through uploading the SLL daily reporting template to ODK (Open Data Kit) in order to address inaccuracy, reliability and untimeliness of data. It is an open-source mobile data collection platform where forms can be filled offline and sent when a connection is found. Data can be viewed, downloaded, and used as desired. ODK minimizes errors, miscalculations and inconsistencies brought about by the earlier used ways of collecting data

Results

As a result of using ODK, data quality has improved tremendously. Data cleaning for October-December indicated 14.27% discrepancy while the discrepancy in January to May 2023 was 0.043%. Data is now entered timely, it is more accurate and reliable

Conclusions

Conclusively, utilization of modern data collection tools, in this case ODK, has significantly improved data quality by enhancing accuracy, consistency, completeness, and timeliness of data. Programs should carefully select appropriate tools, develop proper protocols, and implement data validation measures to capitalize on the advantages of these tools and maintain the integrity of the collected data

The quality data reported by SLL has been highly influenced by changing to a standard online reporting tool (ODK)which ensures data is always protected.

1303

Evaluation of a digital Emergency Triage, Assessment and Treatment (dETAT) and patient referral tracking system at primary health care level in Malawi, September 2022 - January 2023

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Keywords

Emergency triage and assessment; child health; digital health; mHealth

Introduction

Timely identification, management, and referral of critically ill children at primary healthcare (PHC) level is challenging in resource-limited settings like Malawi, where facilities face high patient volumes without sufficient skilled staff, diagnostics, equipment, and medicines. A digital Emergency Triage, Assessment and Treatment (dETAT) mobile-application in DHIS2 was created, using a digitized symptom questionnaire and algorithm to aid triage of patients (0-14 years) presenting at PHCs and support follow-up of cases referred to higher-tier care. This abstract describes an evaluation of feasibility of dETAT and impact on clinical care.

Methods

This mixed-methods evaluation of 16 facilities implementing dETAT (Sept2022–Jan2023) drew on anonymized quantitative patient data, surveys (n=16) and interviews (n=32) with dETAT-trained healthcare workers (HCWs). Quantitative data was analysed descriptively, and trends tested for significance in Stata 17; qualitative data was coded/analysed thematically.

Results

41,725 children were triaged in the application over five months, 530 (1.3%) classified Emergency and 9877 (23.7%) as Priority. Data completeness across stages (triage, clinical consult, referral) was challenging, but reached 97.5%/99.3%/87.5% respectively by January. Overall, 1.2% (311) cases were confirmed emergencies by a clinician – almost all had been classified as either emergency (36%) or priority (64%) at triage. Over time, the proportion of emergencies referred to hospitals and referred cases seen within 48-hours increased, and loss to follow-up after referral decreased. Of HCWs surveyed, most agreed dETAT had improved workflow (94%), identification (100%), management (94%) and referral (80%) of critical cases. HCWs recommended dETAT be scaled-up to other PHC sites but emphasized the importance of technical support; community sensitization; and building triage officers' capacity to identify clinical symptoms.

Conclusions

Implementation of dETAT was feasible at PHC-level and perceived by HCWs to improve identification, management, and referral of emergency cases. Similar digital aids could be considered for scale-up across PHC in Malawi and other resource-limited contexts.

1330

Improving contact tracing and testing of individuals exposed to SARS-CoV-2 in Cameroon using digital health technology: a cluster randomized trial

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Keywords

COVID-19, Cluster randomized trial, contact tracing, health, digital health

Introduction

Contact tracing is a key strategy for controlling the spread of SARS-CoV-2, but implementing it can be a challenge. Digitalization of contact tracing is among the proposed solutions being explored in sub-Saharan African settings. We assessed the effectiveness of a digital tool to expand SARS-CoV-2 testing in exposed individuals in Cameroon.

Methods

We conducted a cluster-randomized trial in eight health districts (clusters), including 22 facilities and COVID-19 testing units, randomly assigned to a digital (intervention) or standard

contact tracing approach (control). The intervention consisted of a contact tracing module added to the digital platform "Mamal Pro" used for managing COVID-19 in Cameroon. The module integrated SMS notifications to contacts, enabled the immediate transmission of contact lists to the tracing unit, and automated supervisory and coordination options. We estimated the proportion of contacts identified by COVID-19 index cases who were successfully traced and who were tested for SARS-CoV-2. A Poisson regression model with cluster adjustment was used to assess the effect of the intervention.

Results

From October 2022 to March 2023, we enrolled 164 index cases in the intervention and 149 in the control arm, identifying 854 and 849 contacts, respectively. In the intervention arm, 94.0% of identified contacts were successfully reached by the tracing unit versus 58.2% in the control arm. The intervention significantly increased the likelihood of successfully tracing contacts (adjusted RR=1.72, 95%CI: 1.00-2.95, p=0.049). The median time to successfully trace contacts was 0 days [IQR: 0-1] in the intervention and 1 day [IQR: 0-2] in the control arm. In the intervention, 21.4% of identified contacts received SARS-CoV-2 testing versus 15.5% in the control arm (adjusted RR=1.47, 95%CI: 0.44-4.90, p=0.530).

Conclusions

Digitalizing the contact tracing process improved the notification of virus exposure and helped to trace more contacts of COVID-19 cases in resource-limited settings.

1348

Mapping Vulnerable Populations in Rwanda via Data Science: Precision mapping Targeting Malnutrition through Socioeconomic and Health Analytics.

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Keywords

Data Science, Precision Mapping, Malnutrition, Rwanda, Child Health, Machine Learning,

Introduction

Globally, malnutrition is a critical concern, impacting 149 million individuals based on WHO's 2020 reports. This challenge disproportionately affects Low- and Middle-Income Countries (LMICs), with approximately one in three individuals in sub-Saharan Africa grappling with malnutrition. Rwanda's malnutrition rates among children under 5, declined from 44% in 2010 to 33% in 2020. Despite this progress, major disparities exist among provinces and districts, children's age groups, and socioeconomic profiles. In 2020, the highest nationwide stunting levels were concentrated in the northern (40%) and western provinces (40.2%). This project aims to utilize data science and machine learning techniques to uncover the potential predictors of child chronic malnutrition, to reveal at a finer geographic scale and identify local areas at the cell level with the greatest needs, with direct implications for actions to take place.

Methods

For evaluating the model's efficacy, we used a spectrum of metrics comprising accuracy, precision, recall, F1 score, area under receiver operating characteristic curve (AUC-ROC), and area under precision-recall curve (AUC-PR), thereby forming a comprehensive assessment of its performance. In our study, we undertook a rigorous process encompassing data cleaning, feature extraction, and meticulous model tuning and validation, all aimed at achieving the utmost predictive precision for Demographic and Health Survey data from 2019-2020

Results

In our study, we undertook a rigorous process encompassing data cleaning, feature extraction, and meticulous model tuning and validation, all aimed at achieving the utmost predictive precision. Leveraging the comprehensive Demographic and Health Survey data from 2019-2020, we focused our investigation on children under 5 years of age. Demonstrating a remarkable accuracy level, our model consistently delivered performance exceeding 80%. The district-level analysis unveiled a substantial variance spanning from below 5% to exceeding 50%.

Conclusions

The prototype's achievements set the stage for replicating its outcomes in a range of population health indicators in limited-resource settings.

1357

Feasibility and Acceptability of A Digital Contact Tracing Approach for SARS-CoV-2 in Cameroon: Results from the DTECT (Digital Tools to Expand Covid-19 Testing in Exposed Individuals in Cameroon) cluster randomized study

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Keywords

Contact tracing, COVID-19, digital tool, feasibility, acceptability

Introduction

Contact tracing is key for controlling the SARS-CoV-2 pandemic. Challenges with the process have driven the development of digital tools, but little is known about its feasibility and acceptance in Cameroon. We examined the feasibility and acceptability of a digital contact tracing module integrated with an online SARS-CoV-2 testing platform including required listing of five contacts.

Methods

We conducted a cross-sectional survey in eight health districts in Cameroon with health workers (HW), contact tracers (CT), and clients testing for SARS-CoV-2. Data were collected through structured questionnaires with closed and open-ended questions on tablets and analyzed using descriptive statistics and thematic analysis.

Results

We interviewed 56 HW and CT. Seventy-five percent (42/56) reported the module was easy/very easy to use; 70% (39/56) said it reduced the time needed for their work. Most CTs (22/23) reported the module made their work easier/much easier and was more efficient (20/21), while improving communication (19/21) and management (19/21). Overall, 82% (46/56) of HW/CT were satisfied/very satisfied with the module, though challenges included data audit inability and system updating without notification.

Of the 84 clients interviewed, 71% (60/84) found the required listing of contacts on the app easy/very easy to do. Sixty-eight percent (57/82) were comfortable/very comfortable with listing contacts in the app. Sixty-one percent (51/84) of respondents reported reduced time using the app compared to manual contact listing and 77% (65/84) would recommend replacing the manual system with the app. There were concerns with listing the required five contacts, ages, and dates, 82% (69/84) of respondents were satisfied/very satisfied with the module. Suggested improvements included accessing phone directories, reducing the number of required contacts, changing date formats, and allowing age ranges.

Conclusions

The digital contact tracing module was feasible and acceptable, though improvements are needed to enhance its functionality and integrity.

1359

Assessing the impact of COVID-19 on Childhood Immunization in Cameroon: Insights from the Immunization Variation Analytics Tool

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Keywords

COVID-19 impact; Routine immunization; Vaccination coverage; Dropout rates; Risk stratification; Data analytics

Introduction

The COVID-19 pandemic's disruption of childhood immunization in Cameroon raises concerns of escalating unvaccinated cohorts. Yet, a comprehensive national evaluation is lacking. This study introduces a nuanced perspective using DHIS-2 data, analyzing COVID-19's impact on childhood immunization services in 2021 versus 2019 across Ministry of Health's organizational sub-units.

Methods

Using IVAt-powered DHIS-2 data, this study assesses disparities in DTP and BCG immunization coverages, dropout rates of under-one-year-old children, facility-based and community-based immunization services, and the prevalence of zero dose children in 2021 compared to 2019. The analysis spans regions, districts, health areas, and facilities potentially affected by pandemic disruptions, guided by a meticulous risk assessment framework.

Results

Nationally, immunization coverage remains resilient, with DTP vaccination coverage at 85.0% in 2021 from 85.4% in 2019. Sub-nationally, declines led to a 32.9% (46,408) rise in unvaccinated children across six priority regions in 2021 versus 2019. Cameroon's ten regions saw an adjusted 10,670 more unvaccinated children in 2021 compared to 2019, 7.6% of the national unvaccinated cohort. DTP coverage dropped in 70% of regions, 57% of districts, and 53% of health areas. These declines could be attributed to around 38% of health facilities that suffered from a mild to severe drop in DTP coverage due to the potential impact of COVID-19. Similarly, specific dropout rates and facility-based/community-based services declined in various areas, but these effects remained localized and had minimal impact at higher levels.

Conclusions

This study underscores the multifaceted repercussions of the pandemic on MOH's sub-units, signifying the critical necessity of targeted catch-up vaccination initiatives. Timely monitoring and analysis of routine immunization indicators emerges as an indispensable approach for policymakers to proactively identify and prioritize vulnerable areas for targeted interventions, thus averting the potential outbreak of vaccine-preventable diseases.

1360

Harnessing referrals as a novel data source for improving primary health care workers' performance in Ethiopia, July, 2023

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Keywords

Referral system, Vula, Maternal Health care, Harnessing

Introduction

Ethiopia is one of the countries with a high maternal mortality rate of 267 /100,000 live births. Delays in health-care seeking, reaching health facilities, and receiving appropriate medical care are rout causes of maternal mortalities. Poor referral linkage and absence of reliable communication mechanism to connect front-line health workers with specialist doctors at tertiary hospitals are barriers and contributed to the low performance of PHC staff and unnecessary referrals of women during childbirth. The USAID-funded Health Workforce Improvement Program in Ethiopia partnered with a South African company and introduced the Vula mobile app to solve the referral communication challenges by connecting frontline health workers with specialists.

Methods

Vula was introduced in Gondar University Hospital, 9 Health centers, and 8 primary hospitals around Gondar in Amhara region. Consensus building workshop was conducted with health facilities heads, province heads and stakeholders. Fifty-four service providers from PHCU and 9 obstetricians from the tertiary hospital were selected and trained on Vula referral system. A mobile dashboard and monthly reports were used to review referral patterns and health worker practices

Results

Monthly referrals using Vula increased from 17 in March to 118 in June 2023. Referral Response rates improved from 5% to 100%. Patient-doctor waiting time improved immensely. Reviewing and recording of patient referral data increased from 30%-100%. Vula improves real time communication and discussions between frontline health workers and specialists. Digital tracking of all referrals revealed referral patterns, health worker practices, and reasons for referral,

Conclusions

Vula reduced unnecessary referrals and improved response rate. It helps to easily capture and document data for analysis. The app facilitates communication and feedback between senior specialists and frontline health workers. Reliable internet connection and quick response are required to sustain utilization of Vula referral system. We call for localization and scale up of digital referral system.

1377

Using Human-Centered Design to Develop, Launch, and Evaluate a Web Platform to Improve Access to HIV Pre-exposure Prophylaxis among Adolescents and Young Adults in Lagos, Nigeria

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Keywords

Human-Centered Design, HIV PrEP, Adolescents and Young Adults, Digital Technology

Introduction

Nigerian youths are at the heart of a growing HIV crisis, with the second-highest rate of new infections globally. HIV Pre-exposure prophylaxis (PrEP) offers great opportunities to reduce the risk among adolescents and young adults (AYA). This study describes the process of engaging AYA through human-centered design (HCD) to develop, test, and launch a web platform to improve access to HIV PrEP in Lagos, Nigeria.

Methods

This study employed the five phases of Human-Centered Design (HCD): empathy, define, ideate, prototype, and test. From April to August 2022, 105 youths (aged 14–24) were recruited for all phases of the study. The empathy and define phases involved qualitative interviews aimed at understanding sexual health needs and barriers to accessing HIV PrEP among AYA. Expert interviews with 12 community-based organizations provided additional insights. Content extraction and thematic analysis of the interviews informed the ideation phase, leading to a prototype created on Wix. Iterative testing refined the prototype into the final, fully functional web platform.

Results

Four key factors emerged as barriers to PrEP access and uptake among Nigerian youth: long distances to HIV clinics, confidentiality issues, low knowledge of PrEP, and costs. The prototype phase revealed several suggestions for improving the web platform, including incorporating an informational portal to read about PrEP, a robust FAQ library, a PrEP eligibility section, and a pharmacy locator. Results showed widespread desirability of the web platform among AYA. 87% of youths surveyed in the testing phase were comfortable with the platform's user interface, and 96% were satisfied with the visual design.

Conclusions

Digital Health technologies have the potential to expand PrEP services and show great promise in delivering health services to meet the needs of AYA. This study described the development process of the first-of-its-kind web platform specifically for accessing HIV PrEP in Lagos, Nigeria, using HCD.

1391

Rural markets and motor park settings: The missing links to improved case yield in community Active Case Finding of Tuberculosis in Bauchi State Nigeria

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Keywords

Community Active Case Finding, Active Case Finding of Tuberculosis, Digital chest x-ray, Computer-aided detection for Tuberculosis

Introduction

According to the World Health Organization (WHO), reaching persons suffering from tuberculosis (TB) timely is a critical step towards ending its spread globally. Historically, people with presumed TB also live in low-and-middle-income countries (LMIC) where most are unaware that they have pulmonary TB which would later become infectious. Identifying emerging hotspots within these settings is key to finding new cases as demonstrated by a community intervention in Bauchi State Nigeria.

Methods

This intervention leveraged on the use of a mobile diagnostic truck called the 'Wellness on Wheels' equipped with a single digital chest x-ray machine and two 4-modular GeneXpert machines to screen for TB. 5-day activities were conducted in 4 local government areas (LGAs) within Bauchi State Nigeria in 4 weeks with an average of 150 people inclusive of men, women, and children aged 4 years and above who were enrolled and tested regardless of cough status. The Emir's palace, home of village heads, and open squares were areas originally mapped out as hotspots. Screening was then shifted to markets and motor parks due to the convenience of enrollment strength and not as a result of hotspot mapping. All identified persons with presumed TB produced sputum samples and were tested with GeneXpert.

Results

Within 4 weeks of screening in markets and motor parks in rural and semi urban areas, a total of 4119 people were screened, 150 presumptive TB were identified. All 150 were evaluated and 19 cases diagnosed (TB yield of 12.6%). All diagnosed TB cases have been put on treatment.

Conclusions

Rural markets and motor parks offer unique and measurable opportunities to find new TB cases in LMIC due to population heterogeneity in settings where communal interactions like trade are heightened. Hotspot mapping for community active case-finding of TB should be modified to include these settings to improve case detection.

1430

Enhancing Adolescent and Youth Sexual and Reproductive Health Outcomes through Digital Innovation: Insights from Rural Ethiopia.

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Keywords

Sexual and reproductive health, Digital innovation, Smart Start, Rural Ethiopia, Adolescent and Youth, Family Planning.

Introduction

Unplanned pregnancies pose high risks to adolescents, particularly in developing nations, where over 90% of births occur. Providing comprehensive sexual and reproductive health counseling, especially in rural areas like Ethiopia, remains a challenge. Alarming data from the Ethiopia Demographic and Health Survey 2016 underscores the problem, revealing that many girls become mothers before 25. In response, PSI Ethiopia digitized Smart Start, a personalized counseling solution integrating family and financial planning. The digital tool helps deliver quality counseling, enabling adolescent girls in rural Ethiopia to make informed decisions.

Methods

After a rigorous design process, the Smart Start digital job aid was developed. We evaluated the impact of the digital (experiment) versus paper-based (control) tool in 16 randomly selected kebeles, with eight experiments and eight control sites. Interviews and surveys were conducted by Adolescent Health Officers using pre-designed questionnaires and data collection tools. The study included 16 health workers (eight control and eight experimental sites) and 330 randomly selected clients (164 control and 166 experimental sites) from a total sample of 4,333 in the 16 kebeles. Routine programmatic data were collected in DHIS2, and results were analyzed in Excel.

Results

The digital tool excelled, fostering heightened engagement, interest, and satisfaction among clients and health workers. Clients using the digital tool were more inclined to adopt contraceptives, displaying elevated confidence in their choices. The experiment group achieved a 74% contraceptive adoption rate, surpassing the control group's 64%. In addition, the experiment group exhibited a preference (89%) for long-acting contraceptive methods vs. the control group (72%).

Both qualitative and quantitative findings echoed that clients and health workers praised the digital tool's user-friendliness, confidence-boosting attributes, and effective message delivery.

Conclusions

The digital job aid significantly enriched health counseling, spotlighting its potential to revolutionize health services and paving a promising path for advancing healthcare services throughout Africa.

1477

Knowledge, Perception and Willingness of using Telenursing in the University of Ibadan, Oyo state, Nigeria.

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Keywords

Knowledge, Perception, Willingness, Telenursing, Nursing students.

Introduction

Telenursing, an innovative and cost-effective approach to healthcare, is gaining prominence in nursing education globally. However, its adoption among nursing students in Nigeria remains understudied. The objective of the study was to assess the knowledge, perception and willingness of using telenursing among student nurses in the University of Ibadan and its potential impact on public health.

Methods

This cross-sectional quantitative study at the University of Ibadan assessed telenursing knowledge, practice, and barriers among nursing students. The study was descriptive and utilized a questionnaire-based approach without follow-up sections. The research took place in the university's Department of Nursing, located in Ibadan, South-West Nigeria. The study included 157 undergraduate nursing students selected through stratified random sampling and used Google Forms for data collection, which was analyzed using SPSS version 25 software.

Results

Respondent mean age: 22±2 years, reflecting youthfulness. Nursing students possess average telenursing knowledge (45%), positive perception (52%), and strong willingness (65%), highlighting digital innovation in healthcare education.

Hurdles include technical limitations (93.6%), unreliable electricity (92.4%), and limited internet access (91.1%), emphasizing the need for infrastructure and digital literacy.

Age (p = 0.002) and academic level (p = 0.000) impact knowledge; 200 and 400-level students are more willing (p = 0.029 and p = 0.019). A significant perception-willingness link was noted (p = 0.024).

Conclusions

These findings stress telenursing integration in nursing education. Overcoming tech challenges and improving teaching methods can prepare nurses for modern healthcare. This research paves the way for a connected healthcare system in Nigeria, advancing public health and patient care.

1497

The Role of Zanzibar Health Interoperability Layer in Enabling Seamless Data Exchange and Integration between Community Digital Health System and DHIS 2

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Keywords

Interoperability, Data Integration, Seamless Data Exchange, Community Digital System, DHIS 2

Introduction

Advanced digital technologies and innovative solutions have transformed healthcare delivery in Africa. Facilitating seamless data flow between digital systems is crucial for enhancing patient care by health workers and improving overall health system management for decision-makers. Despite notable digital healthcare advancements in Africa, gaps persist in data exchange due to standards and implementation disparities. Challenges like data duplication, inconsistency and restricted information sharing hinder decision-making. This presentation explores the Zanzibar Health Interoperability Layer (ZHIL), connecting Zanzibar's national digital community health program (Jamii ni Afya) and the DHIS2 system. We describe ZHIL's roles in health data governance, system coordination, and service delivery.

Methods

The assessment of the ZHIL's technical performance involved gathering and analyzing system metrics concerning performance, data transfer, and accuracy. Furthermore, we gauged the ZHIL's efficacy from a user standpoint by organizing consultative focal group meetings. These sessions aimed to delve into essential matters concerning the integration of the digital community health and DHIS2 systems.

Results

The findings showcase ZHIL's integration and data exchange enhancement between the Jamii ni Afya (JNA) system and the DHIS2 central system. An 86% accuracy rate in data integration was observed, underscoring its role in ensuring consistency and precision across both systems. Regarding user experience, 88% of participants noted improved data-sharing efficiency via this layer, while 92% reported heightened access to real-time information across platforms, bolstering decision-making.

Conclusions

The success of the Zanzibar Health Interoperability Layer (ZHIL) in enhancing data exchange between the digital community health system and the DHIS2 system in Zanzibar holds significant implications for public health practice. The layer improves the efficiency of data exchange and increases accessibility to data, which can streamline decision-making. To capitalize on these findings, public health should prioritize development and capacity building for interoperability systems like the ZHIL, which can enhance healthcare coordination and decision-making in diverse contexts.

1499

ASSESSMENT OF INTENTION TO USE SHORT MESSAGING SERVICE BASED MOBILE HEALTH INTERVENTIONS FOR PROMOTING DRUG ADHERENCE AMONG DIABETIC PATIENTS AT ZEWDITU MEMORIAL HOSPITAL MAY, 2023

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Keywords

mhealth , diabetes, intention, adherence, SMS, Ethiopia

Introduction

Suboptimal medication adherence presents a significant challenge across various sub-Saharan nations, including Ethiopia. There is growing evidence that demonstrate the effectiveness of interventions utilizing text messaging to enhance medication adherence. This study aims to assess the intention to use SMS-based mhealth interventions and associated factors in promoting drug adherence among diabetic patients.

Methods

A cross sectional study design was used and the study was conducted at Zewditu memorial hospital, Addis Ababa, Ethiopia. Sample population for this study are all adult diabetic patients above the age of 18 on follow-up at Zewditu memorial hospital with access to mobile phone. A sample size of 351 patients was calculated and systematic random sampling was used to select participants. This study employed interviewer-administered structured questionnaires as the primary method for data collection, Epi Info 7 was used to enter data and SPSS V26 was used to analyze the data. Binary and multivariable logistic regression models was used to analyze the relationships between SMS reminders to promote drug adherence and associated factors.

Results

Overall, 66.4 % of the participants expressed intention to use SMS-based reminder services to improve their drug adherence. Age (AOR=5.73, 95% CI= 2.07,15.73), education (AOR=3.03, 95% CI=1.16, 7.90), type of diabetes (AOR=3.71, 95% CI=1.16,7.90), route of medication (AOR=2.99, 95% CI=1.42,6.32), SMS preference (AOR= 2.86, 95% CI= 1.17,7.00) were deemed to be important variables linked to intention to use SMS reminders to promote drug adherence among diabetes patients.

Conclusions

The findings suggest that SMS reminders could be used as a tool to promote adherence among diabetic patients. Further more this study highlight the importance of tailored interventions that take into account patient characteristics and preferences as factors that influence their intention to use the service.

1514

Using a peer navigated mobile based platform to enhance ART adherence and retention among young people in Homabay County, Kenya.

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Keywords

Mobile based Platform, Peer navigated, Adherence, Antiretroviral therapy,

Introduction

Adequate adherence and retention on antiretroviral therapy (ART) is key for successful HIV treatment outcomes. Adolescents and young people (AYP) face challenges in adhering to and staying engaged in ART which leads to virologic failure, emergence of drug resistant viral strains, disease progression, and increased risk of HIV transmission. Mobile phones present an opportunity to improve retention and adherence rates. We piloted a peer navigated mobile based SMS platform to enhance ART adherence and retention among AYP enrolled in care.

Methods

We used a single site-randomized trial design. We enrolled 152 AYP aged 15-24 years enrolled in ART care in a public health facility in Suba, Kenya. Randomized in ratio 1:1. Intervention arm received SMS reminders had the option to provide feedback through SMS or calls while control arm received the standard of care from the health facility. We got VL and pill count data the from Ministry of Health database to compare pre-post adherence rates.

Results

The proportion of AYPLWH missing pills (32.9% vs 33.9% pre-post intervention), control group 3.3% (33.2% to 36.5% at follow up) majorly missing pills twice. In the intervention decreased by 16.5% (93.4% to 76.9%) while control increased by 12.8% (82.9% to 95.7%). Positive pill count during 3 clinic visits; 76.3% intervention compared to 72.4% in the control in visit 1; 67.1% in the intervention compared to 52.6% in the control in visit 2; and 37% in the intervention compared to 32% in the control in visit 3. Concerning VL, VL of 0 to 100 c/ml in the intervention arm increased by 1.5% (86.0% to 87.5% pre-post) compared to the control group that had an increase of 4.3% (85.7% to 91.4% at follow up).

Conclusions

There is need to integrate the SMS system into the healthcare systems to effectively support young people in HIV care.

1574

Adaptation and validation of a usability and acceptability assessment tools for mobile health applications among rural community health workers in Rwanda, 2023

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Keywords

mobile health, digital health, global surgery

Introduction

Mobile health applications are rapidly evolving as valuable resources, offering support to health care workers in providing quality care. Achieving their full potential necessitates a comprehensive assessment of their usability and acceptability. We report on the process of adapting existing tools to develop and validate a quantitative tool to assess community health workers' perceived usability and acceptability of a mobile health application developed for postoperative home follow-up of women who underwent caesarean section.

Methods

Conducted in Kirehe district located in rural Rwanda, this study spanned from October 2022 to March 2023. For adaptation, we translated the Mobile Health Usability Assessment Questionnaire and questions from Practitioner Opinion (Acceptability) Scale. We supplemented these with usability questions that assess core functions of the mobile health application developed by our team. The validation consisted of content validation with 8 experts with a recommended threshold of content validity index > 0.78, face validation with 10 target users with a recommended threshold of face validity index >= 0.60. Reliability testing was performed using data obtained from 30 target users during usability and acceptability testing, with Cronbach's Alpha value > 0.70 signifying a commendable internal consistency.

Results

Of the 25 items assessed, 22 received a score of content validity index > 0.78 for both clarity and relevance scales. The face validity index was 0.991 for both clarity and relevance across all 22 questions. The set of questions exhibited a high level of internal consistency, as evidenced by a Cronbach's alpha coefficient of 0.93. The final tool included 22 items with high content and face validity, and high internal reliability.

Conclusions

The validated tool, along with the adaptation and validation process will contribute to future assessment of usability and acceptability of mobile health applications for community health workers, and lead to greater integration of such innovative solutions.

1659

Usability and acceptability of a mobile Health tool for community health worker-led home-based post-cesarean monitoring in rural Rwanda, 2023

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Keywords

Telemedicine, Global surgery, Digital health, Maternal health, Community health, sub-Saharan Africa

Introduction

Postpartum follow-up at health centers is physically and financially burdensome for women delivering via cesarean in rural Rwanda; however, given the risk of postoperative complications, close monitoring of these women is essential. Here, we report on community health workers' (CHWs') usability and acceptability of a mobile health (mHealth) application designed to support home-based post-cesarean monitoring in rural Rwanda.

Methods

In 2022, our team worked with technology partners at Insightiv AI (Rwanda) and MIT (USA) to develop an Android-based mobile app with comprehensive screening questions and capacity to capture wound images and process a machine learning algorithm to diagnosis surgical site infections. Between March-May 2023, we tested the app with 30 CHWs from Kirehe District, Rwanda; the CHWs used the app when

engaging with patient vignettes (3 vignettes/CHW, with vignettes presenting normal recovery, medical complication, and user/app error) and then completed a Mobile Usability and Acceptability Tool questionnaire, adapted and validated for this Rwandan setting. Data were collected via REDCap and analyzed in Stata v.14.

Results

In 90% of the vignette scenarios (81 out of 90), the CHW completed all ten assessment steps. In our sample of 30 CHWs, all CHWs (100%) reported agree or strongly agree on at least 16 out of 20 usability questions and 29 CHWs (96.7%) reported agree or strongly agree on all four acceptability questions. For all three metrics, we surpassed pre-defined thresholds for success in terms of usability and acceptability.

Conclusions

Our mHealth tool to support home-based follow-up of women delivering via Cesarean in rural Rwanda passed pre-defined milestones for usability and acceptability as rated by CHW end-users. Future work will include a prospective validation of the mHealth tool and a randomized-control trial assessing the impact of the mHealth-CHW intervention on timely access to care in the context of post-Cesarean complications.

1691

Usability and acceptability of the Two-way texting mobile health technology for improving retention among HIV-infected individuals accessing Antiretroviral therapy in Lilongwe, Malawi

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Keywords

Two-way texting, Mobile health, Antiretroviral therapy, Usability, Human centered design

Introduction

Early retention of people living with HIV (PLHIV) in antiretroviral therapy (ART) programs is critical to improve individual clinical outcomes and viral load suppression. Although many mobile health (mHealth) interventions aim to improve retention in care, there is still lack of evidence on mHealth success or failure, including from patient's perspectives. We describe the human-centered design (HCD) process and assess patient usability and acceptability of two-way texting (2wT) intervention to improve early retention among new ART initiates at Lighthouse Trust clinic in Lilongwe, Malawi.

Methods

The 2wT is a quasi-experimental pre-post study which enrolled adults aged ≥18, initiating ART at MPC from 2021 to 2022. An iterative HCD approach focused on patient and provider users' needs, incorporating feedback from multidisciplinary teams to adapt 2wT for local, public clinic context. We present mixed-methods usability and acceptability results from 100 participants, 50 at 3-months and 50 at 6-months, post 2wT enrollment, and observations of these patients completing core tasks of the 2wT system.

Results

Among 100 usability respondents, 95% were satisfied with visit reminders, and 88% would recommend reminders and motivational messages to friends; however, 17% were worried about confidentiality. In observation of participant task completion, 94% were able to successfully confirm visit attendance and 73% could request appointment date change. More participants in 4–6 months group completed tasks correctly compared to 1–3 months group, although not significantly different (78% vs. 66%, p = 0.181). Qualitative results were overwhelmingly positive, but patients noted confusion with transfer reporting and concern that 2wT would not reach patients without mobile phones or with lower literacy.

Conclusions

The 2wT app appears highly usable and acceptable, hopefully creating solid foundation for lifelong engagement in care. The HCD approach put local team central in this process, ensuring both patients' and Lighthouse's priorities were forefront in 2wT optimization.

1718

Revolutionizing community engagement for improved health outcomes in Nigeria: the interactive Kacici Kacici games

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Keywords

Digital Health
Interactive Voice Response
SMS
Digital Game
Mobile Phone
Nigeria

Introduction

Access to healthcare services remains low in Nigeria due to socio-cultural factors and religious beliefs. The USAID-funded Breakthrough ACTION-Nigeria project uses a coordinated package of interventions, including digital approaches to promote healthy behaviors among key audiences. Kacici Kacici is an engaging educational, "choose your adventure" digital game that lets participants choose their path, determine the story's outcome, and become a 'game hero', all over their mobile phone.

Methods

Using Interactive Voice Response (IVR), callers use their mobile phone's keypad to make decisions that influence the outcome of the story on key health areas like Maternal, Newborn, Child Health + Nutrition (MNCH+N), Family Planning/ Reproductive Health (FP/RH), and Malaria. The games offer multiple paths, allowing listeners to choose their own. If callers select the wrong choice, they are provided with the correct answer. They can continue playing or call back to try again to attain 'game hero' status, therefore exposing them to the information interactively and increasing the likelihood of information retention. Airtel subscribers can access the game for free by dialing 4-2-1, while other mobile network operators can access the game by calling a dedicated phone number at the standard call rate. The game development includes scripting, defining the logic for responses, recording the content, and pre-testing before launch.

Results

Since its launch in July 2020, five stages have been aired on 4-2-1. Between July 2020 and July 2023, a total of 688,240 calls were made by 373,312 individuals, collectively spending 4,249,130 minutes engaging with the KK games on 421. Additionally, 30,822 callers attained 'game hero' status across various stages.

Conclusions

This underscores the broad reach of the intervention, indicative of its effectiveness in engaging and informing a diverse audience.

1796

The effect of real time medication monitoring on adherence to antiretroviral therapy and viral suppression among people living with HIV: a systematic literature review and meta-analysis

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Keywords

HIV, Digital Health, ART, Viral Load, Adherence

Introduction

The advent of universal antiretroviral therapy enables improved treatment outcomes in persons living with HIV. Adequate adherence to ART is required to achieve virological suppression, and reduce HIV transmission and HIV-associated morbidity and mortality. Real time medication monitor (RTMM) based digital adherence tools (DATs) could be an effective intervention to improve ART adherence and viral load suppression in PLHIV. The objectives of this systematic review and meta-analysis were to assess the effect of RTMM-based DATs on ART adherence and viral load suppression in PLHIV .

Methods

We searched the literature databases MEDLINE, Embase and Global Health for publications up to October 2022. We assessed study quality using the Cochrane risk-of-bias tool for randomized controlled trials (RCTs) and the Newcastle-Ottawa Scale for cohort studies. Narrative synthesis and meta-analyses were conducted to synthesize results. This study is registered with PROSPERO with the number CRD42022365596

Results

Out of 638 papers identified, eight were included. Six studies were randomised controlled trials, and two were cohort studies. Two studies, a RCT in China (mean adherence: 96.2% vs 89.1%) and a crossover cohort study in Uganda (mean adherence: 84% vs 93%), demonstrated improved ART adherence. No studies demonstrated improved viral load suppression. In the meta-analysis, we estimated that RTMM-based digital adherence tools did not significantly improve ART adherence with a standardised mean difference of 0.2068 [95% CI =

-0.0367; 0.4502, p = 0.0960] and viral load suppression with an odds ratio of 1.3148 [95% CI, 0.9199 – 1.8791].

Conclusions

There is evidence emerging on whether RTMM-based DATs improve ART adherence and viral load suppression in PLHIV. In this review, we found that based on the current evidence, RTMM based DATs had no effect on adherence and viral load suppression. However, due to the limited number of published studies, more high-quality studies still need to be conducted on this novel intervention.

1824

Digital Health Innovations for Vaccine Supply Chain: Real-time temperature alerts to safeguard vaccines during transportation

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Keywords

end-to-end visibility, vaccine transportation, remote temperature monitoring, real-time alerts, cold chain management

Introduction

Nexleaf Analytics partnered with the Tanzania Ministry of Health (MOH) to protect vaccine potency via countrywide remote temperature monitoring (RTM) of cold chain equipment. RTM offers real-time alerts for vaccines' temperature status, generating valuable data for resource management and higher-level decision-making. While RTM has revolutionized vaccine storage, little attention has been given to the risks during transportation. Research indicates that a significant portion of vaccines are exposed to damaging temperatures during transportation, endangering vaccine potency and creating significant financial losses. The MOH, Nexleaf and inSupply piloted a revolutionary Bluetooth-based temperature monitoring device called Trek to track vaccine temperature during transportation in ten districts across Mwanza and Geita Regions. Coupled with a smartphone, Trek sends real-time alerts to vaccination officers when temperatures are out of range during transportation.

Methods

The pilot evaluation incorporated quantitative and qualitative data sources. Real-time temperature and location data were collected using Trek devices, while key informant interviews, post-trip surveys, district-level data review meetings, and team discussions provided valuable context.

Results

Pilot data highlighted the need for continuous temperature monitoring, with temperatures becoming too cold or too warm during transportation. Out of 146 trips, 91% registered temperatures outside the recommended range. Real-time temperature alerts prompted health workers to take action to protect vaccines, including replacing cool water packs (49%) and repacking vaccines (14%). Trek data led to broader health system action, including identifying the need for vaccine packing Standard Operating Procedures.

Conclusions

These findings emphasise the role of real-time temperature monitoring during transportation in strengthening the vaccine cold chain and promoting better vaccine management practices. This pioneering effort has led to nationwide scale, building off lessons learnt from the pilot, and is a vital step toward end-to-end visibility in the vaccine cold chain, setting Tanzania as a trailblazer in cold chain management across low- and middle-income countries.

1897

ACCEPTABILITY AND THE USE OF ELECTRONIC MEDICAL RECORDS AMONG HEALTH WORKERS IN PRIMARY HEALTHCARE CENTERS IN OSOGBO, OSUN STATE,NIGERIA

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Keywords

Electronic Medical Records, Acceptance, Health-workers, Osun-State

Introduction

The Electronic Medical Record (EMR) is viewed as a framework for integrating a variety of information tools to improve clinical decisions. The adoption of such evidence in everyday clinical practice might lead to a safer and more effective healthcare system, helps to reduce medical mistakes by sending out timely messages and reminders. This study investigated the acceptability and use of EMR among workers in primary healthcare centers in Osogbo, Osun state.

Methods

This study adopted a cross-sectional survey research design carried out among 167 purposeful selected medical workers in Osogbo, Osun state. An all-inclusive sampling method was employed in this study in 18 Primary Healthcare Centers within Osogbo LGA. A pre-tested semi-structured interviewer-administered questionnaire was used to obtain information from the research respondents. The data was analyzed using SPSS statistical tool, v.26.0. Descriptive and inferential statistics were used. The hypotheses was tested for significance at 0.05 level.

Results

Respondents age was 36.74±9.60 years with (58.7%) having less than 10 years working experience. Majority (85.6%) of the respondents were aware of electronic medical records in the hospital. About seventy-seven percent of the respondent stated that Electronic Medical Records (EMR) can be used majorly for doctor's prescription while (76.6%) mentioned its use for record-keeping. Respondents' perceived usefulness of EMR was high 26.93±2.96, perceived ease of use was good 19.13±4.26 and acceptance of EMR was high 11.98±2.85. There was a statistically significant association between workers perceived ease of use (X2 42.637, df=1,<0.001), and knowledge (X2 5.890, df =1, p<0.05) with acceptance of EMR.

Conclusions

This research has demonstrated that electronic medical records (EMRs) are largely accepted among Nigerian healthcare professionals. According to the findings of our study, Nigerian healthcare professionals have embraced the usage of EMRs and discovered that they are effective instruments for enhancing the provision of healthcare services.

1902

Going the Last mile: Use of a Mobile App (Lynx) to improve HIV Case finding in hard–to–reach communities of Northern, Muchinga and Luapula Provinces in Zambia

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Keywords

Keywords: HIV case finding, rural settings, digital innovations, spatial technology (GIS)

Introduction

Finding new HIV infections is more challenging in the last mile of the epidemic. Right to Care Zambia in collaboration with the Ministry of Health (MoH), implements USAID's Action HIV Program to achieve and sustain HIV epidemic control in Luapula, Muchinga and Northern provinces. We introduced Lynx mobile application, an innovative digital health surveillance technology, to improve HIV Case finding in hard-to-reach communities. Lynx is a data driven tool that enhances targeted HIV testing and resource allocation to underserved locations. We report the program's experience using Lynx.

Methods

Lynx integrated geospatial mapping with demographic population data, geographical coordinates, and HIV prevalence areas to aid spatial visualizations. Targeted facilities and communities were prioritized based on estimated people living with HIV. HIV screening tool was integrated into Lynx and used to screen those at risk. Healthcare workers were oriented on the use of Lynx to deliver HIV testing services. Testing volumes and HIV positivity yield data by population instantly transmitted via Lynx to the inhouse data management system. Data from 2019 to 2022 were extracted and analyzed using geospatial tools (ArcGIS). The difference in proportions and confidence intervals were calculated using a binomial exact test.

Results

Across nine targeted districts, 140,808 HIV tests were done and 9,856 were positive. HIV positivity increased from 7% (CI 6.9% – 7.0%) in 2019 to 11% (10.8%-11.1%) (12,519 positives/113,779 tested) p <0.0001 in 2020. Testing volumes reduced by 23% (22.2%-23.8%) in 2020 and 60% (58.2%-61.7%) p value (<0.0001)in 2022 (from 10,964 in 2019 to 8,482 in 2020 and 3,121 in 2022), while the HIV positivity increased from 7% to 16% and 22%, respectively.

Conclusions

The integration of Lynx and GIS provided opportunities to improve HIV Case finding and reduced testing volumes. Similar strategies hold potential to effectively address health challenges in various settings

1909

Implementation of a quality improvement project within a mumps outbreak investigation in Zambia, May-August 2023

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Keywords

Quality Improvement, outbreak investigation, KoboCollect

Introduction

During a mumps outbreak investigation in 2023 in Zambia, gaps were identified in accountability for data and samples collected in the field versus those reaching the Zambia National Public Health Reference Laboratory (ZNPRL) for analysis. This affected the timeliness and quality of samples received by the laboratory. A Quality Improvement Project (QIP) was thus initiated, whose objective was to enhance sample collection, transportation and tracking, in order to assure timely delivery of high-quality samples and metadata, thereby improving efficiency of the mumps outbreak investigation.

Methods

KoboCollect, a mobile data collection platform, was employed to capture metadata by multidisciplinary teams, which also collected paired blood and buccal swab samples from clients meeting the mumps case definition in 27 districts across Zambia. The Zambia Postal Service was engaged to courier samples to ZNPHRL, observing reverse cold chain. Power BI was used for visualisation and basic analysis of samples and metadata captured in KoboCollect. ZNPRL updated the list of samples received daily. Inspections, data reviews and other quality control measures were implemented, and daily joint meetings were held involving various Zambia National Public Health Institute (ZNPHI) departments, field teams and health facility staff to review progress.

Results

Among the 1,283 KoboCollect entries, 1,218 (95%) were metadata for paired samples (blood and buccal swabs), while 49 (4%) were unpaired blood samples and 14 (1%) unpaired buccal swabs. ZNPHRL received 1144(89%), with the difference likely due to samples in transit from far-flung areas. The Power BI platform provided real-time dashboards, facilitating insights into the quality of collected data and samples.

Conclusions

Along with enhancing sample management and data analysis, the QIP highlighted the value of adaptability, teamwork and technology-use in preserving data quality and accountability. Future investigations can apply the strategies described here to ensure timely and accurate data for improved efficacy of public health investigations.

2026

How a virtual health clinic is increasing the uptake of HIV services by key populations in Zambia

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Keywords

Virtual healthcare, HIV services, key populations, digital innovation, health clinic

Introduction

Key populations (KPs), who include men who have sex with men (MSM), transgender people (TG), female sex workers (FSW) and people who inject drugs (PWID) have little access to healthcare services due to stigma and discrimination. To remedy this and increase access to HIV services by KPs, the USAID DISCOVER-Health Project, implemented by JSI, designed a virtual health clinic.

Methods

The virtual health clinic provides services electronically that do not necessarily require in-person contact with service providers; such as HIV prevention and treatment registration, counselling, linkage to care, and adherence support. It then links the clients to in-person services, at project static sites and the clients' own safe spaces, for clinical reviews and pharmacy pick-ups. The virtual health clinic can be accessed through a mobile phone, tablet, or computer by dialling *573# USSD, logging in on the website, or scanning a QR Code.

Results

The virtual health clinic launched in February 2023, and to date in August 2023, through the platform, a total of 5,161 KPs (1,848 MSM, 2,769 FSW, 432 TG, 112 PWID) have started on PrEP, 81 (15 MSM, 63 FSW, 3 TG) of the 96 KPs who tested HIV positive are on ART, and 8,411 condoms have been distributed.

Conclusions

The virtual clinic safeguards accessibility of HIV services to KPs by removing the physical barrier to accessing healthcare and providing person-centred services that are tailored to clients' needs. It promotes confidentiality and empowers clients to take ownership of managing their health. To enhance quality and efficiency of health service delivery, technology features will be added to enable clients' access to their medical records at any health facility where they decide to receive services, and to link them to their closest health facility in Zambia.

2031

Assessment of patient satisfaction on the use of a digital health platform (eLABS) to receive test results and healthcare communication in South Africa

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Keywords

Clinic-laboratory-patient interface
Digital Health
Patient Literacy

Introduction

Patient satisfaction is a crucial aspect of the healthcare system as it reflects on quality-of-service delivery. Mobile health (mHealth) systems have been used to improve healthcare outcomes and patient experiences. This study assessed patient satisfaction on receiving laboratory result outcomes and healthcare communication through a digital health platform (eLABS) in HIV patients on anti-retroviral therapy (ART) 12 months post eLABS-patient support module (PSM) system.

Methods

A cross-sectional study was piloted in two healthcare facilities located in urban and rural setting. A 5-point Likert scale (very poor to excellent) questionnaire was administered to participants before and after eLABS-PSM study. The questionnaire assessed satisfaction levels on the following distinct categories: receiving health information; test result outcomes; appointment reminders; understanding meaning of results and actions to take; and overall satisfaction with the system. In this analysis, satisfaction was classified as excellent and/or good choices. A Chi-Square analysis was conducted to determine the association between pre- and post-satisfaction levels for each participant

Results

621 participants were enrolled from two facilities. Of these, categorized responses were received from 423 (68%) on receiving result outcomes, health information, and appointment reminders; 422 (68%) on understanding meaning of results; and 392 (63%) on overall system satisfaction. Compared to receiving results from healthcare workers, satisfaction increased by 45% when participants received test result outcomes on eLABS ($p=0.002$). Satisfaction on receiving health information through eLABS versus from healthcare workers increased by 53% ($p<0.001$), appointment reminders by 41% ($p<0.001$) and understanding meaning of results by 29% ($p=0.019$). Overall system satisfaction scores increased by 58% ($p<0.001$). The results revealed a significant association between pre and post eLABS-PSM satisfaction levels in all categories.

Conclusions

These findings indicate that eLABS-PSM system positively impacted participant satisfaction, emphasizing the benefits of using eLABS-PSM for test result delivery, clear explanations, appointment reminders, health information dissemination and overall system satisfaction.

2106

Leveraging digital tools in emergency response: A case study of Cyclone Freddy in Malawi

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Keywords

Digital tools
Health systems
Emergency response
Integrated care

Introduction

Malawi was severely affected by Cyclone Freddy in March 2023, causing heavy rain, strong winds, and landslides, with immediate effects to the southern region of Malawi health systems. Partners In Health (PIH/APZU) rapidly responded in Chikwawa, providing clinical care, social support, and de-

ploying a data collection system and a live dashboard. We evaluate the utilization of digital systems in strengthening emergency health response.

Methods

To better track the response and prioritize resources, in consultation with stakeholders, we developed a data collection tool. We then programmed it in CommCare for offline data collection from camps. This tool captured aggregate numbers of medical care and services provided in the camps from March 18 to July 27, 2023. The data was then synced daily with the server, which was connected to a live Microsoft Power BI dashboard, which had visuals on all the crucial services offered in the camps reached. We used counts and proportions to describe the data.

Results

A total of 17512 consultations were seen as part of integrated care across 51 camps. The consultations included services in OPD, Under-five, HTC, Antenatal and mental health with major consultations recorded as follows UTRI at 27.98%, malaria at 22.18%, and HIV at 6.40%. Among the 9650 cases seen 16% were positive and were provided with counseling. The under-five section 2295 children were seen and 2549vaccines were administered with 231 children completing their vaccinations. Social Support packages were given to 2223 households with 11,687 individuals, of which 2223 were U5 and 746 senior citizens (>60years).

Conclusions

The utilization of CommCare linked with a live dashboard for reporting during this emergency response significantly eased health care service provision and resource allocation by providing the team with real time data.

2126

Harmonizing population health data into Observational Medical Outcome Partnership Common Data Model: A demonstration using COVID-19 Sero survey data from Nairobi Urban HDSS.

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Keywords

OHDSI, OMOP, ETL, AWS

Introduction

Population health studies play a key role in understanding the health status, determinants, and outcomes of specific populations or groups. Analysing data from different sources is a challenge due to differences in structures, formats, definitions, standards and database platforms. Data harmonization is a key process that addresses these challenges by standardizing and transforming data to enable meaningful comparisons and analyses across varied datasets. The extract, transform and load (ETL) pipeline is the process embedded into the workflow which does the standardization and transformation tasks to put data in a common standard, referred to as a common data model. We aimed to extend OMOP to population health to enable analysis of different datasets on a central server.

Methods

The dataset underwent several stages in the harmonization pipeline to create tables compatible with OMOP standards. The OHDSI suite of tools facilitated the mapping of source data to standard terminologies. For the extract, transform, and load (ETL) process, Pentaho data integration and PostgreSQL were employed. The R library Achilles was instrumental in generating aggregated data for analytical purposes, which was subsequently visualized using the Atlas tool.

Results

We have successfully mapped source data, including data on demographics, visits, conditions, measurements, drug use to the OMOP standard. Online dashboard (Atlas) provisioned on cloud with links to OHDSI open source tools to uncover more insights through collaborative analysis. This analysis is preliminary.

Conclusions

Through the utilization of the OHDSI suite of tools, we effectively standardized Sero survey data and made it accessible for in-depth analysis. Consequently, we can now expand the use of these tools, originally designed for electronic health records, to population health, much applicable within health and demographic surveillance sites. This opens up opportunities for extensive collaborative research and the enhancement of overall health outcomes through adoption of federated data sharing.

2128

ACCELERATING PEDIATRICS CASE FIND AMONG PEOPLE LIVING WITH HIV (PLHIV) IN HIGH-RISK SECURITY AREAS IN NORTH-WESTERN NIGERIA USING USING GEOSPATIAL MAPPING: USAID-ACE3 PROJECT

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Keywords

Geospatial Mapping, PLHIV, Pediatrics, USAID-ACE3 Project

Introduction

In Nigeria, pediatric HIV cases are among the underserved population across the first, second and third 95 UNAIDS global target in ending HIV/AIDS. High-risk security areas in north-western Nigeria pose significant challenges to accessing and providing comprehensive healthcare services for children living with HIV. This abstract aim to explore the effectiveness of geospatial mapping in driving pediatric case finding among people living with HIV (PLHIV) in these high-risk security areas of Kebbi, Sokoto and Zamfara.

Methods

Implementation science was designed using geospatial information systems (GIS) to identify high-risk security areas with limited access to pediatric HIV services. Demographic and epidemiological data, such as the number and age distribution of people living with HIV were collected and integrated into the GIS database. This facilitated the identification of areas with a high concentration of PLHIV, particularly children (0-14 years), and inform areas for targeted HIV case finding.

Results

HIV testing among children within 0-14 years of age increased from 17,106 in 2022 to 58,943 in 2023 which is 245% level of increased. Similarly, HIV case finding jumped from 232 in 2022 to 334 in 2023 (44% level of increased). The 334 HIV positive children identified were successfully linked to care and treatment. Genealogy testing and family testing were also conducted among the newly identified HIV positive children which further increased the case finding.

Conclusions

Geospatial mapping techniques offer promising avenues for effective and efficient pediatric HIV case finding in high-risk security areas. The findings from this study will contribute to targeted interventions and improved health outcomes among children living with HIV in north-western Nigeria, ultimately advancing the goals of the USAID-ACE3 Project in combating pediatric HIV and enhancing overall public health in the region.

2154

Equitable and Digitized database for Reference Intervals for Pediatric and Adult African Populations

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Keywords

Reference, Intervals, biochemistry, hematology, analyzer, equitable

Introduction

Despite the critical need for health improvements in LMICs, health inequalities have resulted in the reduction of services to Africans. Laboratory testing provides the basis for >70% of clinical decisions. Sadly, most pediatric reference intervals were generated from sick children in the hospital. There have been efforts to establish Reference Intervals (RIs) for pediatric and adult African populations. However, there is a significant gap in the accessibility of established RIs for use in providing appropriate healthcare delivery to Africans. We aim to develop a user-friendly database that aggregates comparative RIs for the pediatric and adult African populations.

Methods

An electronic search of literature was carried out using the PubMed database and defined keywords. The full text of articles considered to meet our inclusion and exclusion criteria was retrieved, screened, and validated for eligibility. The RIs data were extracted from the publications and organized for quality assessment in a Microsoft Excel spreadsheet. The data included details of RI values for hematological and biochemical analytes for the pediatric and adult African populations. We performed a meta-analysis of the lower and upper RIs from these journals and used appropriate packages in R to calculate the means and standard deviations.

Results

Our statistical analysis shows variability in the lower and upper RIs for specific analytes. We used this data to design a digital database (Reference Intervals for Pediatric and Adult Populations, RIPAAP, https://tinyurl.com/ripaap) for biochemical and hematological biomarkers that are used in providing care for African populations. This is a user-friendly and scalable digital innovation with a secure API to enable other healthcare systems and developers for integration.

Conclusions

Major gaps exist for reference intervals related to the black population. We report, for the first time a digital database solution for use by global healthcare professionals that require evidence-based reference intervals for providing care for Africans.

2172

Effect of using Artificial Intelligence driven Tuberculosis hotspot mapping on active case finding yield in Ogun State in Nigeria. (July 2021- June 2022)

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Keywords

Tuberculosis, active case finding, Artificial intelligence, Hotspot mapping

Introduction

Nigeria has the 2nd highest gap (17%) between people reported as diagnosed and estimated to have developed TB. To bridge this gap, there is a need for innovative approaches to identify geographical areas with high rates of TB transmission and targeted ACF interventions. The TB LON 3 project leverages a high-resolution predictive model for TB to guide the local ACF activities. We compared whether the ACF yields in sites that overlap with model-recommended hotspots are any different from those that do not coincide with predicted hotspots retrospectively.

Methods

This is part of the implementation of USAID funded Tuberculosis Local Organization Region 3 Project. All screening data from implementation activities were regularly fed into the model for continuous model learning and retraining, thus predicting more precise hotspots over time. The ACF locations were selected using 2 approaches, some from the model-recommended hotspots and others from the knowledge of local teams. To prevent bias in this analysis, we compared the yields obtained between July 2021 and June 2022, while the model was trained on data from Jan 2021 to June 2021. However, it was challenging to differentiate between the selected locations by which method since the data was captured using paper-based forms and the hotspot locations were dynamic. We calculated the percentage difference in the yield and its statistical significance using the chi-square test.

Results

The screening locations overlapping with model-predicted hotspots found 34% higher yields than other areas chosen based on conventional methods. However, the difference was not statistically significant in Ogun state.

Conclusions

The artificial intelligence-driven model has the potential to guide active case finding to high tuberculosis positivity areas for more efficient finding of undiagnosed tuberculosis in the community with the capacity of continuous improvement with long-term use.

2177

Use of geospatial data and digital tools to conduct a larval source management feasibility study in Zambia

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Keywords

geospatial
digital
malaria
vector control
digital global goods
Zambia

Introduction

Larval source management (LSM) is a context-specific vector control intervention that targets immature mosquitos in water habitats thereby reducing adult vectors that transmit malaria. The World Health Organization recommends LSM where larval sites are “few, fixed and findable”. Site selection for LSM

is often based on malaria transmission intensity and proximity to water bodies; this project utilized geospatial analysis to assess the feasibility of LSM in select districts in Zambia.

Methods

The Zambia National Malaria Elimination Programme alongside the U.S. President's Malaria Initiative's VectorLink/Evolve projects conducted an LSM feasibility study in the pre-elimination districts of Katete and Chipata, Zambia in 2022-23. To select the study sites, district maps highlighting potential larval habitats using a surface water detection algorithm on satellite imagery from 1984-2021, were overlaid with population estimates, historical and current entomological data, and topographic features. These maps were loaded into the open-source spatial tool, Reveal, to support larval habitat identification and data collection in December 2022 and January 2023; Open Data Kit was used for data collection to accommodate rapid in-field application updates in May and August 2023.

Results

The water body detection algorithm predicted over 90% of larger potential larval sources (30m2 to 1500km2) and guided teams to smaller water sources (<30m2). Larvae of Anopheles gambiae or An. funestus (the primary malaria vectors in the region) were found in 14.3% of habitats in December 2022, and 7.1%, 28.8%, and 23.8% in January, May, and August 2023, respectively. The association between larval habitat density, abundance, and proximity with population was geospatially analyzed to determine whether habitats are "few, fixed, and findable".

Conclusions

Satellite imagery and surface water detection algorithms through Reveal allowed for effective site selection and the collection and analysis of larval habitat data in this assessment and may hold promise for the efficient targeting of LSM.

2263

Utilizing Digital Innovative Tools in Monitoring Polio Outbreak Response Activities In Zambia, 2022-2023

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Keywords

Monitoring, GIS, Tracking, Supervision, Polio, Outbreak

Introduction

Zambia implemented five rounds of polio supplementary immunization activities (SIA) targeting children aged <5 years using bivalent oral poliovirus vaccine in 2022-2023, nationwide except the first round. These SIAs were in response to the detection of wild polioviruses type 1 in Mozambique and Malawi. Innovative tools were introduced over sequential SIA rounds to improve the quality of monitoring and supervision.

Methods

To monitor vaccination activities and to identify the location of missed settlements and the eligible children not vaccinated, we used mobile-based Open Data Kit (ODK) data collection and Geographic Information System (GIS) tracking. An automated Microsoft excel tool that consolidates supervisor reports collected with ODK was introduced during round four to identify health facilities (HFs) not visited for supervision. Daily performance feedback was provided to supervisors for prompt action during each round.

Results

The proportion of HFs visited for supervision during the nationwide SIAs were 80% and 84% in rounds 2 and 3 respectively, compared to 97% and 99% in rounds 4 and 5 respectively. The information on HFs supervision gaps were shared daily with all supervisors for follow-up from round four, in addition to other information routinely shared in rounds one to three. Lot quality assurance sampling surveys used to assess SIA quality improved over time with 32% lots passed in the first round, to 62% and 66% in rounds 2 and 3 respectively, and then 83% and 85% in rounds 4 and 5, respectively.

Conclusions

The introduction of innovative digital tools to enhance the monitoring and supervision of the outbreak response activities contributed to the improved SIA quality over the rounds with other strategies. The quality of large-scale vaccine preventable disease campaigns could be improved with the systematic use of innovative tools in monitoring and supervising of SIAs.

2268

Leveraging Mobile Technology for Quality Improvement and Capacity Building in Resource-Constrained Settings: The SafeCare's Digital Quality Platform Experience from Saving Mothers Giving Lives (SMGL) 2.0 Project in Kaduna, Nigeria,

2022.

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Keywords

UHC
Quality Improvement
Digital Innovation

Introduction

High-quality healthcare is essential for better health outcomes. Kaduna State has a Maternal Mortality Ratio of 512/100,000, a Neonatal Mortality Rate of 63/1,000, and only 27% of deliveries are assisted by skilled providers. These outcomes are worsened by poor quality of care. With the increasing use of mobile phones in Africa, there is a unique opportunity to harness new technologies in delivering valuable innovative advances in quality improvement (QI).

Methods

SafeCare is an internationally accredited stepwise QI program that helps facilities measure and improve service quality, safety, and efficiency. The Safecare Quality Platform, an interactive digital quality management tool, helps motivate and incentivize healthcare facilities to improve. The platform provides practical guidance through weekly challenges, peer benchmarking, connections to best practices, contact with assessors, and real-time progress information. SMGL's QI program was implemented in Kaduna, and 24 private facilities were onboarded into the Platform.

Results

Following a year of utilizing the platform, upward of 3,000 QI tasks have been completed, more than 300 award badges have been unlocked, and over 1,000 QI-related resources have been downloaded from its library. Compared to baseline data, Emergency Care scores increased by 45%, Infection Prevention and Control by 33%, Staff training by 40%, Business Performance by 45%, HIV/TB/Malaria by 29%, and Clinical Management by 30%. These have significantly contributed to a decrease in maternal deaths by 63%, an increase in the successful resuscitation of new-borns with asphyxia by 36%, an increase of partograph-monitored deliveries by 81%, and an increase in skilled-births delivery by 17%, among others.

Conclusions

A digital quality platform like SafeCare's QPP has the potential to drive and incentivize the implementation of quality improvement activities in resource-constrained healthcare facilities. By leveraging this kind of technology, we can improve health outcomes and reduce costs, ultimately leading to better health for all.

2437

Digitalizing early warning processes in Africa: The Africa CDC perspective.

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Keywords

Event Management System, DHIS2, Integrated Disease Surveillance and Response.

Introduction

Swift identification and proficient management of potential outbreaks are fundamental to improving health outcomes. To be successful despite in such a complex space, sustainable, solution-oriented user-friendly tools are needed. Such tools should support the collaboration of numerous actors to complete critical, time-sensitive actions.

Methods

The Africa CDC (Africa Centres for Disease Control and Prevention) partnered with Health Information Systems Programme South Africa (HISP-SA) to develop an Event Management System (EMS), aimed at improving the integrated approach to disease surveillance. The system was develop following several consultative workshops with Africa CDC, Member States and other continental partners. The system was piloted for one (1) year.

Results

The EMS coordinates real-time collaborative reporting and analysis of public health threats. It is action-orientated, supporting users through the collection, assessment and reporting of signals and events. The system is also supporting analysis through the automation of certain processes like event risk assessment by ranking event risk to guide necessary response required. Data gathered from ministries of health, individual health workers, communities, and informal channels such as social media is transformed through the EMS

processes into visual reports that drive action. This system has supported Africa CDC to process over 400 events and published over 100 continental reports. This system has been adopted and implemented by five African Union Member States. The Africa CDC emergency operations centre is using the Event-Based Surveillance to drive continental action and response.

Conclusions

The use of digital solutions to improve surveillance of health risk has shown to improve real time detection and reporting. More collaboration is needed across sectors to fully operationalise this initiative using a one health approach which is critical in early warning.

2557

Community-based digitally enabled testing in rural and peri-urban communities in Guinea

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Keywords

digital, screening, testing, community health systems, NCDs, malaria, covid-19, malnutrition

Introduction

Guinea faces large gaps in essential diagnostic infrastructure, particularly in rural areas, requiring innovative approaches to reduce barriers to accessing primary care. This study is the first in Guinea to evaluate delivery of point-of-care testing by community health workers (CHWs) supported by a customized digital tool for decision support, clinical guidance, process management, and end-to-end data capture and analysis.

Methods

CHWs in four rural and peri-urban communities were trained to use a digital questionnaire for symptom screening; conduct rapid testing for Covid-19, malaria and blood glucose; screen for hypertension and malnutrition; and capture electronic data across the continuum of care. All community members could enrol for screening. Malaria treatment was provided onsite; individuals with other conditions were referred to nearby community health centers. A team of clinicians, software developers and public health experts designed a digital workflow to standardize and streamline this expanded scope of work, which was integrated into Clinic+O's existing application. Unique patient IDs, generated by the application, enabled creation of continuous medical records and tracking linkage to care. Aggregated data was uploaded to the national DHIS-2 platform.

Results

Over approximately 3 months, over 4,000 individuals enrolled across four sites and received screening. Preliminary data shows that one third of pregnant women and young children showed signs of malnutrition. All CHWs were able to independently use the application and conduct testing, and 100% of 30 interviewed post-implementation supported scale-up of this model to improve access to healthcare in their communities. Despite sporadic interruptions to connectivity, the application captured complete data for 99% of patients, providing unprecedented visibility into the health status of these communities.

Conclusions

CHWs can efficaciously conduct near-patient testing, with digital tools supporting robust processes and data management. Policies to scale up digitally-supported testing by CHWs are needed to bring healthcare closer to the Guinean people.

2710

Using artificial intelligence to screen for cervical cancer at five health facilities in Malawi, March to September 2022

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Keywords

cervical cancer, screening, biopsy, CIN2+, artificial intelligence

Introduction

Cervical cancer is preventable and treatable if detected early; however, it remains worldwide's leading cause of cancer-related deaths in women. In 2022, Malawi registered 4,145 cases of cervical cancer and 2,905 deaths. Visual Inspection of the cervix with Acetic acid (VIA) is Malawi's main screening method but has sub-optimal accuracy. We conducted a prospective observational study at five health facilities to

evaluate accuracy of Automated Visual Evaluation (AVE), an artificial intelligence-based tool for cervical cancer screening that analyses smartphone cervical images for presence of precancerous lesions.

Methods

Women were enrolled from March through September 2022, with follow-up through July 2023. Women aged 25-49 were eligible for cervical cancer screening according to Malawi's national guidelines and were screened by Human Papillomavirus (HPV) testing, VIA, and AVE. If positive on any test, a cervical biopsy was collected for histology review. Diagnostic accuracy was assessed for cervical intraepithelial neoplasia 2 or higher (CIN2+).

Results

Among 4,583 eligible women, the median age was 36 years and 2,415 (52.7%) were living with HIV. 2,255 (49.2%) women were eligible for biopsy; 1,796 (79.6%) received biopsy; 97 (5.4%) were confirmed as CIN2+. Sensitivity for HPV was 88.5% (95% CI: 85.3%-91.2%); VIA was 39.2% (95% CI: 29.4%-49.6%); AVE was 71.1% (95% CI: 61.0%-79.9%. Specificity for HPV was 80.5% (95% CI: 79.9%-81.1%), VIA was 93.7% (95% CI: 92.9%-94.5%)); AVE was 75.0% (95% CI: 73.6%-76.4%). Sensitivity if AVE- or VIA-positive was 81.4% (95% CI: 72.3%-88.6%); specificity if AVE- and VIA-negative was 72.4% (95% CI: 71.0%-73.8%).

Conclusions

AVE, a new screening tool developed for cervical cancer, showed a sensitivity significantly higher than VIA. If combined with VIA, AVE's sensitivity is higher. Until the cost of HPV testing becomes financially feasible, AVE might be the best option for screening most Malawian women, increasing pre-cancerous lesions detection and preventing deaths.

2793

Digital support to bi-directional TB&COVID-19 testing in communities from 2022 to 2023: Improving linkage to care and follow-up in Mozambique

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Keywords

Innovation, digital, service delivery, healthcare, COVID-19, Tuberculosis

Introduction

During the second and third waves of the COVID-19 pandemic, the National Health System in Mozambique faced the risk of overload and collapse. To mitigate the risk of community transmission of other respiratory diseases such as TB, innovative screening and testing approaches were implemented in community posts. However, there were challenges in linking people to appropriate healthcare. Hence, many individuals did not receive the necessary care and treatment, leading to missed positive cases and increased disease spread in the communities. Using a UNITAID-funded grant, we designed an intervention to address the observed gap in linkage to care in community settings.

Methods

In April 2022, we developed TrackerApp, based on the DHIS2 platform. The TrackerApp was installed on smartphones used by community health workers in community posts and clinicians at selected referral health facilities. The TrackerApp allowed community workers to capture demographic and screening data and refer individuals needing healthcare. Clinicians at health facilities received notifications and data collected at the community post via the app. Data entry was completed by clinicians on person arrival, and follow-up was closed when applicable. In addition, the TrackerApp allowed for active case finding using captured phone numbers if a person did not show up. The system also synchronized daily all information collected at the community posts and health facilities.

Results

Since we started using the app, 100% of people referred from community posts were linked to care.

Conclusions

The TrackerApp allows integration of TB and COVID-19 screening, testing, linkage to care and reporting results in one digital tool; reduces the need for data capture at health facilities; ensures the continuity of essential services for TB and helps break the transmission chain of these diseases, strengthening the public health response. Further evaluation of the TrackerApp is planned to assess provider and client acceptability.

2833

Scaling Digital Health Innovations across African Countries: Review of Current Situation, Challenges and Opportunities

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Keywords

Digital health, Innovation, Africa, Scaling

Introduction

The advancement of digital health innovations presents opportunities to address healthcare challenges across African countries. In 2021, the Seventy-first session of the WHO Regional Committee for Africa endorsed a regional Framework for implementing the Global strategy on digital health. This study aimed to review the current situation, opportunities, and challenges of scaling digital health innovations in Africa.

Methods

We conducted a narrative review of evidence to answer the aim of the study. The search was conducted in March 2023 and evidence published between January 2020 and June 2023 were included. Data reported in this article were obtained from literature in peer-reviewed journals found in PubMed, PubMed Central, and ScienceDirect, grey literature, WHO Regional Committee for Africa informational documents, and other data sources. The authors also snowball further data to gather information for this review.

Results

32 studies were included in this review. Our findings revealed that thirty-three Member States (70%) have developed an eHealth strategy based on the WHO International Telecommunication Union (ITU) National eHealth Strategy Toolkit. Seventy-two percent (72%) of Member States have developed legislation for protecting personal data. Fifty-three percent (53%) have stakeholder engagement processes on eHealth, while 25 (53%) have established partnerships with telecommunication operators. Our study highlighted the major challenges involved in scaling digital health innovations across African countries which include the high cost of software, Lack of unique patient identifiers among most African economies, limited technological infrastructure in remote areas, Poor internet and power capacities, Lack of standard management, and resistance to system use by service providers.

Conclusions

A collective commitment to addressing the identified challenges, harnessing innovative opportunities, and cultivating a holistic approach will be essential to unlocking the full transformative potential of digital health. Collaborative efforts between governments, international organizations, private sector entities, and local communities can foster the development of robust digital health ecosystems.

Track 7: Whole-of-Society: The Power of Engaging Civil Society, the Private Sector and Local Philanthropy

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A Research and Mentoring Symposium for Medical Trainees in Africa Promotes Scientific Learning and Interest in Research

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Keywords

Mentorship, Africa, Medical Conferences, Students, Research Conferences

Introduction

Research training is a core component of medical education, but resources and programs to support trainee research are lacking at many African medical schools. Professional and trainee-organized conferences provide alternate venues to learn about research, scientifically network, and receive scientific feedback, but conference availability for African medical trainees is limited. We organized a volunteer-run research and mentorship symposium for African medical trainees, then surveyed participants and presenters about baseline characteristics, research training at their home institutions, and benefits from the symposium.

Methods

The hybrid, two-day symposium in 2022 included medical students and early career doctors from African institutions who attended in-person (Lusaka, Zambia) or virtually. The symposium featured abstract presentations by trainee attendees, keynote presentations, and networking. All participants had opportunities to question presenters and hear senior judges provide real-time formative feedback on presentations. Participants electronically completed a Qualtrics-based survey after the symposium.

Results

Respondents included 87 trainees from 7 African countries, including 28 trainee presenters representing 11 schools in 5 countries. Most trainees reported never previously attending or presenting at a conference (n=45, 51.7%), never previously interacting with peers in a research forum (n=51, 58.6%), and having no formal research training (n=53, 60.9%). Only 23 (26.4%) reported adequate access to research mentorship and 34 (39.1%) reported adequate research training at their medical schools. Most said the symposium increased interest in research (n=69, 79.3%) and likelihood of submitting future abstracts (n=80, 92.0%), and 27 presenters (96.4%) said presenting improved the quality of their work.

Conclusions

A volunteer-organized research and mentorship symposium provided valuable opportunities for African medical students and early-career trainees, many of whom felt support for trainee research was lacking at their institutions. Such initiatives can help inspire and develop new generations of African medical researchers.

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Actors, their roles and relationships in the community health system in Nigeria: towards the expanded health systems building blocks

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Keywords

Actors, roles, relationships, community health system, expanded health systems building block

Introduction

The Community Health System (CHS) exists through the actions and activities of different health actors. However, these actors, their roles, and their relationships with one another have not been properly explored. This study identified the actors in a community health system, described their roles, and their relationships with one another using the Expanded Health Systems Building Block (EHSBB).

Methods

The study is based on a qualitative research method conducted in three states in Nigeria in 2022. A total of 102 data was collected through Key Informant Interviews (KIIs), In-depth Interviews (IDI) and Focus Group Discussions (FGD). The participants included policymakers, health workers, programme managers, informal health providers, private health sectors, Civil Society Organisations (CSO)/Non-Governmental Organisations (NGO), community members and community leaders. The coding reliability approach, a type of thematic analysis was used to analyse the data.

Results

The study identified multiple actors in the community health system, including those whose roles and contributions are barely acknowledged (i.e., Ward Development Committees [WDCs] and philanthropists). These actors' roles span across the EHSBB but their activities were more pronounced in leadership and governance, health workforce, and supply of medical products. The relationships and interdependencies among these actors manifest as intricately complex, with the shared goal of enhancing health at the community. For example, when health projects are initiated by the government or multinational organizations, community leaders and local health authorities serve as vigilant watchdogs. While roles may not be distinctly defined, in instances of active and pronounced engagement, local health actors tend to demonstrate a strong commitment to advocating and facilitating health initiatives at the community level.

Conclusions

There is a full array of health actors whose contributions are critical to the CHS. Continuous engagement and defining clear roles for these actors could contribute to communities receiving health information and health services appropriately.

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Policy Dialogue for the Successful Implementation of System Strengthening Initiatives: Who needs to be included and how to measure its success?

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Keywords

Policy dialogue, evaluation, systems thinking, health system strengthening, process facilitation

Introduction

This study emphasizes that effective policy dialogue for designing and implementing system-strengthening initiatives relies on intentional collaboration and meaningful stakeholder interactions. However, the literature lacks information about the ideal nature of stakeholder-intensive policy dialogues and how to assess their contribution. The study aims to uncover insights from health system-strengthening experts regarding the necessary extent of stakeholder inclusion and proposes methods to evaluate the success and value-added benefits of the policy dialogue process within the broader system.

Methods

A survey was administered to 53 HSS experts to gather their insights on which stakeholder groups should be included in a policy dialogue exercise, why they should be included, what would success look like for each phase of the health system strengthening process, and how to measure success at each phase.

Results

The key finding of this study underscores the significance of inclusion and collaboration in the success of a Health System Strengthening process. Stakeholders acknowledge the importance of these factors, with different levels of importance attributed to each stakeholder group during different phases of the process. Notably, communities are highlighted as crucial stakeholders, often considered as important as, if not more important than, MoH. Despite this recognition, these communities are frequently overlooked in the planning and execution of systemic interventions. The study also offers success criteria and potential metrics for evaluating the effectiveness of each phase of the HSS process.

Conclusions

This study contributes to the evolving discourse by providing a comprehensive understanding of optimal stakeholder inclusion and insights into potential pitfalls and challenges that may arise when seeking to foster collaborative dialogues. By outlining definitions of success for each phase of the health system strengthening process and proposing indicators to measure this success, the research equips practitioners and policymakers with valuable tools to gauge the impact and value-add of policy dialogue processes.

990

Service Quality for HIV self-testing (HIVST) in Private Sector Pharmacies in Nigeria: Evidence from a Mystery Client Survey

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Keywords

HIV
Private Sector
HIV Self-testing
Service Quality

Introduction

Delivery of HIVST through the private sector pharmacy has been demonstrated as an effective method for scaled uptake for HIVST in Nigeria, however, the quality of retailing service through this channel may be sub-optimal and may likely affect access and utilization of HIVST services through the Private sector. We examined the quality of retailing service provided at point of purchase for HIVST among private sector pharmacies in Nigeria.

Methods

We conducted a mystery survey of 48 randomly sampled pharmacies out of the 98 pharmacies implementing HIVST distribution in Abuja and Lagos, Nigeria from April to May 2023. Trained mystery clients were deployed to assess service provision at the pharmacies using scripted scenario to guide interaction with provider, and information was recorded immediately post interaction using a questionnaire. Information was collected on availability of HIVST kits, the providers' knowledge about HIVST, client satisfaction with service received, level of privacy, and the level of support provided during HIVST purchase and linkage to prevention services and continuum care.

Results

Clients reported that all the providers (100%) had HIVST available at their outlet, with 14/48 (31%) of providers proactively explaining the use of the kits to the client. 23/48 (48%) of providers were rated as having knowledge on the proper use of HIVST kit, and 12/48 (26%) of providers gave information to support clients on linkage to prevention or care. Clients reported satisfaction with the overall quality service at the outlets for 40/48 (84%) providers. However, clients raised concerns about the non-discreteness and lack of privacy of services.

Conclusions

Despite client satisfaction on HIVST services provided at private sector pharmacies, quality of services based on the level of knowledge and support for client on HIVST may be limited. Effort to increase providers knowledge and proper client management is needed to strengthen private sector service delivery for HIVST.

1016

Enhancing access to Family Planning and Primary Healthcare Services: Private Sector Involvement through trained Community Pharmacists and Patent Proprietary Medicine Vendors in Underserved Nigerian Communities.

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Keywords

Family Planning
Primary Healthcare
Private Sector
Nigeria
Contraceptives

Introduction

In Nigeria, Community pharmacists (CPs) and drug shop owners known as Patent and Proprietary Medicine Vendors (PPMVs) are not formally recognized as family planning (FP) and primary healthcare (PHC) service providers even though, they deliver services to majority of the population. They are often the first point of care for hygiene, child health and nutrition services because of their availability, easy access, consistent drug stocks, extended hours, and free consultation. This study explores involvement of trained private sector providers in promoting access and uptake of FP and PHC services in underserved communities.

Methods

Society for Family Health through the IntegratE project conducted intervention in six Nigerian states (Gombe, Nasarawa, Kaduna, Kano, Enugu, Lagos) from August 2022 to June 2023. Eligible CPs and PPMVs were selected based on criteria: registration, willingness to be trained, stock FP products and provide PHC services. Data was analysed through the number of trained CPs and PPMVs, women and children accessing FP and PHC services and referrals for FP services.

Results

Results showed that 726 CPs and PPMVs received training on PHC and FP services. Following training, through these outlets 109,347 women have accessed different methods of FP. Among utilized FP products, Oral contraceptives constituted 55.6%, Injectables 27.7%, condoms 11% and implants 5.7%. Also, 209,066 under 5 children received primary care for malaria (75.5%), pneumonia (6.6%), diarrhoea (17.5%) and nutrition counselling (0.4%) from private sector providers. Additionally, 6,506 women were referred for implants and injectables due to product unavailability at the time.

Conclusions

Active involvement of trained private sector providers has proven to be effective in enhancing access to essential PHC and FP services thereby addressing gaps in healthcare service delivery in the communities. To enhance private sector providers involvement, consistent product availability, policy reforms, standardized training and public-private sector partnership are necessary.

1311

Shifting Narratives in Public Health Media Coverage: Lessons from Capacity Building of Nigerian Traditional Media on Solutions Journalism

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Keywords

Solutions Journalism, Health Journalism, Storytelling, Health Communications, Community Engagement, public health

Introduction

Effective communication is pivotal for successful public health practice, yet the media often fixates on problems, sidelining solutions. The Solutions Journalism Africa Initiative bridges this gap, facilitating a solutions-oriented coverage of public health issues in Africa

Methods

Over the course of three years, the project built the capacity of journalists in solutions journalism. Newsroom leaders nominated three journalists each, and selected journalists were trained in cohorts, employing andragogic training approaches. Post-training, journalists were supported by Nigeria Health Watch mentors to produce stories for publishing on their newsrooms' websites. The project team also supported opportunities to foster sustainability of the practice of solutions journalism in the newsrooms. Project implementation was accompanied by continuous advocacy from inception to close-out, targeting newsrooms, media practitioners, and academic institutions. Advocacy was done in person, via "SoJo meetups" conducted across all six geopolitical zones, social media and on radio

Results

Three cohorts, thirty media organisations, 90 journalists, and 15 fellows (including freelance journalists and educators) were trained and supported to produce solutions-oriented stories. Stories spotlighted successful public health interventions in Nigeria and the wider African continent. 354 stories were published, with 57.6% (n=204) focused on responses to public health challenges. Top public health issues covered include infectious diseases (8%), health technology (4%), WASH (9%), SRHR (5%), GBV (5%), and MNCH (8%). An international database of solutions stories (solutions journalism tracker) indexed over 50% of all published stories. Up to eight newsrooms set up dedicated solutions journalism desks, and health policy/practice changes attributable to published stories include banning open defecation in a southern Nigeria community. A community of practice of over 160 people was set up and managed on social media.

Conclusions

Solutions-focused public health reporting can be a catalyst for health policy change. Key success factors include targeted continuous advocacy, community engagement, mentoring and institutional support to newsrooms

1502

Public Private Partnership to improve the quality of Routine Immunization services in Addis Ababa, Ethiopia, 2020/21

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Keywords

Public Private Partnership, Immunization, Private Health facilities, service quality

Introduction

The private health sector plays an increasing role in routine immunization and related health service delivery and signif-

icant number of children are getting immunization services through these facilities. However, private health facilities are not getting the required support and Partnership from government health structures to improve the quality of services they are providing. The study objective is To assess the effectiveness of public private partnership towards improving the quality of immunization services in private health facilities in Addis Ababa, Ethiopia

Methods

A cross-sectional quantitative study was conducted comparing baseline and endline results after a set of routine immunization strengthening interventions was employed in 46 private health facilities. Data collection was conducted through SurveyCTO. The quantitative data was analyzed using Z statistic to identify if there are significant improvements in immunization service quality variables between the baseline and endline results.

Results

Use of WHO prequalified refrigerators, presence of trained vaccinators, regular temperature monitoring, and presence of fridge tags, use of recording and reporting tools and proper vaccine management were among service quality variables tested during the baseline and end-line assessment. Based on the gaps in the baseline assessment, sets of intervention including establishing partnership forum, use of proper cold chain equipment, training, mentoring, experience sharing, close supportive supervision, panning, and review meetings were conducted. The Z statistics test run over the baseline and endline assessment data from private health facilities showed that the improvement in most of the quality indicators is significant at 95% confidence level with p-value of <0.001.

Conclusions

Public private partnership improved the delivery of quality immunization services in private health facilities. Scale up of this approach to other areas would positively impact the quality of immunization services.

1570

Building citizen science intelligence for outbreak response using the companion modelling approach in Kenya, Brazil, and Vietnam, January – November 2023

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Keywords

Citizen science, Outbreak management, Companion modelling, Participatory modelling, Role-playing game, Agent-based model

Introduction

Having community representation remains challenging in epidemiological modelling. Most models rely on viewpoints of public health experts without comprehensively considering social and cultural factors. Companion Modelling (ComMod), which includes participatory modelling, role-playing game (RPG), and agent-based model (ABM), seeks to foster shared system representation among stakeholders through iterative cycles of defining, developing, testing, refining, and implementing. ComMod is used extensively in environmental sciences but less in public health. Our study aims to validate these approaches for outbreak response.

Methods

We conducted four participatory modelling workshops each in Kenya, Brazil, and Vietnam. The first three each had around ten participants, aged ≥18 years, comprising healthcare workers, citizens, researchers and policymakers respectively. The last workshop brought all stakeholders together. An ARDI (actors, resources, dynamics, interactions) graph was produced for each site, which informed the development of a common RPG and ABM that will be validated and refined in another workshop with all stakeholders.

Results

The participatory modelling workshops incorporated viewpoints from diverse stakeholders to better attune our ABM to local social and policy contexts. Using the knowledge gained, we developed an RPG that allows stakeholders (citizens, community health volunteers, healthcare workers and policymakers) to respond to an infectious disease outbreak in healthcare facilities and communities. The gameplay facilitates

dialogues and promotes understanding between players, so as to improve knowledge, resolve conflicts, and aid decision making. The ABM supports the RPG by simulating the effects of players' actions on outbreak progression. In turn, the RPG helps to understand behaviors and interactions of players, providing further refinements to the ABM.

Conclusions

This iterative cycle of engaging and empowering stakeholders in modelling supports a paradigm shift from 'public health experts' to 'whole-of-society', which facilitates participation of society in understanding citizens' behaviour for development of better models and policies to tackle public health challenges.

1590

Impact evaluation of engaging private health providers to scale up active tuberculosis case finding in Ghana

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Keywords

Private healthcare providers, public-public mix, Tuberculosis, Active case notification

Introduction

Despite free TB services being available in public facilities, Ghana's TB case detection rate remains below the expected level. In an effort to increase TB case detection, community private healthcare providers and the National Health Insurance Scheme (NHIS) were engaged through a Public-Private Mix (PPM) Directly Observed Therapy(DOT) model. Four key interventions targeting vulnerable populations in Ghana's two biggest metropolitan areas were implemented from the last quarter of 2018 to the last quarter of 2019.

Methods

Screening data was extracted from the implementing facilities and TB registers. Quarterly TB case notifications from 2015 to 2022 for intervention and control areas were also retrieved. The control areas were selected based on similar characteristics to the intervention area and the absence of any other significant interventions for tuberculosis case detection. Using Poisson regression and comparative interruptive time series (ITS), the impact of the interventions on quarterly TB case notification in the intervention area was evaluated in comparison to the control area.

Results

During the intervention period, a total of 563868 persons were screened for TB, 12121 were presumptive for TB and 590 persons were diagnosed with TB. Of the diagnosed TB cases, 95.3% (562) were bacteriologically confirmed. The overall TB screening yield was 104.6 per 100,000 population. In the intervention area overall, TB case notifications increased from 1392 to 1462 cases from 2018 to 2019 relative to the decrease in number of case notifications in the control area, 853 in 2018 to 778 in 2019. The ITS analyses detected positive post-intervention trend differences in All Forms of TB and bacteriologically confirmed TB notification rates between the intervention and control areas.

Conclusions

Expanding free TB service to private healthcare providers through a PPM DOT model and continuous community engagement can substantially increase case notification among vulnerable urban populations

1619

The powerful impact of interaction between science and Civil Society in the screening and management of chronic diseases: an example from Tunisia

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Keywords

Civil Society Organization (CSO), Type 2 diabetes, High Blood Pressure, Public Health, Participatory Action Research (PAR), Tunisia.

Introduction

Type 2 diabetes (T2D) and High Blood Pressure (HBP) are major public health problems worldwide that cause degenerative complications leading to disability and death. In the last decades, prevalence of these two metabolic diseases has dramatically increased especially in Tunisia. In this context, the Regional Association of Diabetics "a Civil Society Organization (CSO)", in Zaghouan (Tunisia), has expressed the need to study the epidemiological situation of these diseases in the region. Therefore, a collaboration has been established between our research team and the CSO. The aim was to determine the prevalence of metabolic diseases in Zaghouan and to conduct education and advocacy activities with public health authorities.

Methods

After the approval of the ethical committee, an exploratory study with stratified random sampling of 420 participants has been carried out. Various data were collected. Blood samples and urine were drawn for biochemical assay. Then, all data were analyzed using the statistical R software.

Results

Our study showed an alarming situation with an inter-regional difference in prevalence of obesity (50.0%), HBP (39.0%) and T2D (32.0%) This study allowed the discovery of 24, 17 and 2 new cases of T2D, HBP and T2D&HBP respectively. The association of some socio-economic factors and biochemical parameters with these chronic diseases has been highlighted. Physical activity was the main associated risk factor in the development of T2D and HBP.

Conclusions

Public health situation in Zaghouan requires urgent interventions to better manage the growing epidemic of chronic diseases in the region. This study, the first of its kind, shed the light on the importance of engaging health policy makers in road mapping and implementing national program to reduce the prevalence of chronic metabolic diseases. The collaboration between Science and Society helps to set up efficient and effective actions to tackle chronic diseases in our country.

1624

Dynamics of Global Partnership Between Local and International Actors in Sexuality Education Policy in Africa

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Keywords

Sexuality Education, Policy Actors, Partnership, Isomorphism, and Global South

Introduction

The objective of this study was to delve into the global partnership dynamic among Sexuality Education (SE) policy actors and their stated objectives in the case of Ethiopia and Uganda. Sexuality Education is a contentious topic, especially when it pertains to adolescents, and it remains understudied. This study seeks to bridge the knowledge gap regarding SE partnership.

Methods

Employing a transformative philosophical paradigm, the study utilized a comparative case approach. Both document review and in-depth interviews, along with Focus Group Discussions, were conducted. The study participants, purposively selected, included SE educators, school management, Ministry of Education experts, and representatives from international and local NGOs. Thematic data analysis was employed.

Results

The findings highlight that, discussion around SE generate polarization, particularly concerning the content, timing, and methodology of SE instruction. The supporters of SE predominantly consist of multilateral organizations, international NGOs and local NGOs. These global actors defined SE as a human right and position themselves as "champions of human rights". Conversely, opposition emerges from the MoE, religious leaders, and influential community-figures who aim to safeguard national, religious, and cultural values against perceived "non-African values" and "Western influence". Within the context of the global South, the study identified that adhering to "global standards" influences national credibility and opens avenues for financial opportunities from the

global North, thereby coerce for isomorphism. Moreover, the study underscores that the voices of students, educators, and local NGOs are marginalized within policy discourse despite being pivotal to SE implementation.

Conclusions

The study concluded that the dynamics of partnership in SE policy making appears challenged. The need to emphasize on amplifying the voices of adolescents, within the core of SE policy dialogues is suggested. Furthermore, the study proposes the importance of empowering and engaging religious and community leaders as allies in advancing SE and improved adolescents SRHR.

1671

Integrating Private laboratories for Tuberculosis control in a TB endemic country: The KNCV TB LON Kano experience.

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Keywords

Tuberculosis
Private Sector
Childhood Case Finding

Introduction

Nigeria ranks 6th in the world and 1st in Africa in terms of Tuberculosis burden, with about 259,000 missing Tuberculosis cases in 2021[1]. A subset of these missing Tuberculosis cases goes to private laboratories as first contact for their health needs. Appropriate engagements of these laboratories for Tuberculosis control will ensure that presumptive Tuberculosis cases that present to these laboratories will not be missed.

[1] Global tuberculosis report 2021. Geneva: World Health Organization; 2021.

Methods

KNCV Nigeria partnered with the Kano state Tuberculosis control program and the Guild of medical laboratory Directors to identify, map and train staff of standalone private medical laboratories. Nineteen laboratories were carefully engaged in eight LGA's. Staffs from the various laboratories were trained on Tuberculosis Screening for walk in clients, presumptive identification, and linkages to treatment facilities. Logistics and tools for reporting on weekly and monthly were deployed. Incentives were agreed upon to motivate these laboratories, cascade reporting data from July 2022 to June 2023 was collated and analysed.

Results

For the one-year period 17,234 clients were screened with 5688 presumptives identified and 420 new Tuberculosis cases diagnosed and placed on treatment. The number needed to test to diagnose a child was just 9 compared to 14 in adults while the number needed to screen to get a child was 42 just a little above that in adults which was 40.

Conclusions

This result depicts an efficient intervention. Childhood Tuberculosis case contribution from this novel approach was 15%, way above the Kano state average of 5%. Integrating the private standalone laboratories into Tuberculosis control activities will widen access to a sector of missed pediatric clients with potential towards closing the gap in childhood Tuberculosis case finding. We recommend scale up to involve more private laboratories across the state and the country at large.

1705

Utilizing evidence from Civil Society Organisations in decision-making for Primary Health Care in Ghana's Health Sector – A Qualitative study at sub-national levels

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Keywords

Evidence-use Primary Health Care Civil Society Organisations Ghana

Introduction

Civil Society Organisations(CSOs)'s participation in health policy promotes three key values of governance: inclusiveness, responsiveness and accountability. Irrespective of the decades of research on CSOs in health policy making, little is known about how these key governance values are influenced

by use of evidence from CSOs for Primary Health Care(PHC) decision-making at sub-national levels in Ghana. This study explores the use of evidence from CSOs-in-health for PHC decisions, and how this promotes inclusiveness, responsiveness, and accountability at sub-national levels in selected regions in Ghana.

Methods

This study employs qualitative research approaches using convenience sampling to identify 32 existing health policy documents for review, purposive and snowballing techniques to engage 18 CSOs-in-health representatives/directors for semi-structured interviews, policy processes observations, and experts' consultations. Publicly available health policy documents were accessed on the websites of the Ministry of Health and the Ghana Health Service and analyzed to address research objectives. Further, guided by the logic model process and Weiss' seven meaning of research utilization model, thematic and framework analyses were utilised to understand the different use of evidence from CSOs-in-health, and how this achieves inclusive, responsive and accountable decision making in PHC at sub-national levels.

Results

All documents reviewed were developed between 1999-2023, have a national focus, and are generally on service delivery. Only two were developed grounded from conventional scientific methods.Generally, the use of evidence from CSOs, and how evidence was used in these health policies, and for PHC delivery were unclear. One-third of the documents explicitly acknowledged CSOs' role in ensuring policy implementation, broadly categorized as financing, dissemination and service provision.

Conclusions

Further analyses of findings from CSOs-in-health's engagements will offer insights into how to incorporate evidence from CSOs and how this can contribute to enhancing accountability, responsiveness and inclusiveness within the context of PHC decision-making at the sub-national levels.

1774

Making Primary Health Centres Work for All: Collaborations and Networking within the Community

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Keywords

Primary healthcare facilities, community actors, strategies, collaborations, universal health coverage

Introduction

Universal health coverage (UHC) depends on strong primary health care (PHC) systems. One of the pillars that sustain PHC systems and curtails hindrances to accessing care is the involvement of community members. The study explored the extent and effects of community involvement and participation in improving the use of PHC facilities in three geographic regions of Nigeria.

Methods

A qualitative study was conducted in three Nigerian states (Anambra, Kano, and Akwa-Ibom). Participants were purposively selected based on their roles and involvement in health service provision A total of 102 qualitative interviews (90 in-depth interviews and 12 focus group discussions) were conducted with policymakers, health workers, programme managers, informal health providers, private health sectors, CSOs/NGOs, community leaders and community members (service users). The interviews were used to explore the level of community involvement in health care delivery, as well as the community structures and resources that support the provision and use of health services at the community level. Thematic analysis of the data was undertaken using Braun and Clarke's approach.

Results

The findings showed that there were varying internal collaborations in communities that foster increased use of PHCs, which in turn promotes community health. Identified collaborations were community-based organization-led collaborations, primary health facility-led collaborations, informal health care providers-led collaborations, faith-based-led collaborations and private sector-led collaborations. In most cases, community resources were mobilized to build and/or renovate and equip PHC centers. Community resources were also leveraged on to undertake health promotion activities within the communities.

Conclusions

Strategies and collaborations of local actors in the community give rise to improvements in the availability of primary healthcare services within communities. The government should further strengthen its efforts by ensuring the implementation of structured systems for mobilizing and utilizing resources from communities to strengthen PHC systems.

1784

Fostering whole-of-society collaboration: Harnessing citizen science intelligence for outbreak preparedness and response in low- and middle-income countries - A sequential mixed method approach, October 2022 – June 2023

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Keywords

Citizen science, Outbreak preparedness and response, Global health, low- and middle-income countries, Digital

Introduction

We define citizen science (CS) as public participation in science to increase knowledge and build trust between citizens, policymakers, and researchers. When including all voices, CS can create a society better equipped to tackle global health crises. Our study evaluated awareness, readiness, and influencing factors to participation in outbreak-related CS activities.

Methods

Mixed-method study was conducted in Cameroon, Zimbabwe, Uganda, Kenya, India, Bangladesh, Nepal, Philippines, and Indonesia, between October 2022 and June 2023. Participants, aged over 18 years, were recruited using stratified sampling to ensure representation of marginalized populations, youth, and community health workers. Descriptive statistics and thematic analysis were done.

Results

Of the 2912 participants, 2353 (80.8%) have never heard of CS. The majority in Cameroon and Kenya were unaware, while majority in Uganda were aware but unengaged in outbreak-related CS. Zimbabwe had the highest participation in CS (182/295, 61.7%). Facilitators included learning new knowledge/skills; and feeling empowered as a community. Conversely, barriers included lack of enabling environment and resources; mistrust in organizers; and personal inferiority complex, particularly from youth and marginalized populations.

Most people expressed the need for training before participating in analog (1240, 42.6%) or digital CS (1199, 41.2%). 2212 (76.0%) people were interested in digital CS, with Zimbabwe (282/295, 95.6%) and Kenya (232/251, 92.4%) leading. Digital was quoted as more accessible; enabling real-time monitoring, and producing better data. Prevention/vaccination campaigns were cited as possible digital CS activities. Participants had concerns over data security, and non-inclusion of the digitally illiterate, elderly, or those without digital devices/internet. African countries also raised electricity cuts, expensive data, and sporadic internet connection as common challenges.

Conclusions

CS activities that are inclusive and acceptable to people can be achieved by understanding their voices and addressing cultural and social barriers. This can catalyze a collaborative and reciprocal relationship between all stakeholders.

1833

Reaching the zero-dose communities: Increasing immunization rates in border regions in the Kenyan counties of Garissa and Wajir, December 2023.

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Keywords

Kenya, children, vaccination, zero-dose, cross-border

Introduction

Kenya continues to face the risk of polio virus importation due to high cross-border movements along the porous border between Kenya and Somalia. Healthy children's samples to the lab confirmed 10 polio viruses from Dadaab Refugee camps in Garissa County arriving from the polio-afflicted regions. An investigation of the social and behavioural factors revealed

the vulnerability of the zero -dose communities among the Somali nomadic populations in Kenya.

Methods

UNICEF supported the county-led structure to undertake various nomadic engagement activities. In the first phase (2021-2022), UNICEF built the capacities in the counties along the border (Garissa, Wajir and Mandera) to conduct anthropological inquiry to list all the nomadic settlements known to the nomadic elders from the villages with functional health facilities. A 'master list' was then used to map the nomadic settlements and points-of-interest using ODK Collect. The data was validated used for inferential analysis and developing county-level nomadic profiles to inform immunization activities

Results

The data revealed new un-identified nomadic settlements with many nomadic children who remain un-reached with life-saving vaccines constrained by the increasing threat of armed groups who disapprove vaccinations on religious grounds and instill fear amongst the few health workers who conducted outreach from the nearest health facilities.

UNICEF Kenya used the nomadic profile and datasets to design and implement Demand Intensification through Community Engagement (DICE) in the focus cross-border sub counties using the whole-of-society approach. Community gatekeepers joined hands to support the community outreach to meet the people needs at strategic geopoints such as water source

The whole-of-society approach successfully reached more than 66,400 adults and 3,500 children in 78 settlements and improved community trust in the health system and health workers leading to 39% decrease in zero-dose populations

Conclusions

Evidence-informed strategies leveraging local knowledge of community, and participatory approaches lead to successful engagement of nomadic communities

1842

Renforcer la capacité des partenaires locaux à mettre en œuvre une approche pour la jeunesse à Madagascar

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Keywords

Madagascar, santé reproductive, parents pour la première fois, approche TMT, ITOCA, ONG locale.

Introduction

Madagascar compte de nombreuses organisations locales travaillant dans le domaine de la santé ; surtout dans la prestation de services. Inspirée par l'approche "Tanora Mitsinjo Taranaka" (TMT) ou « Jeunes se souciant de leur descendances », initiée en milieu rurale, une version urbaine est mise en œuvre par l'ONG SALFA pour répondre aux besoins en santé reproductive des jeunes parents. Cette étude évalue les premiers changements dans la capacité de mise en œuvre de l'approche par l'ONG.

Methods

Le processus a commencé par l'identification d'organisation locale potentielle pour mettre en œuvre l'approche TMT, suivi d'une évaluation de sa capacite organisationnelle en utilisant l'outil ITOCA (Integrated Technical Organizational Capacity Assessment) en Février 2022. 12 des 15 domaines de l'outil ont été éligible et retenu dans cette auto- évaluation qui s'est fait à travers un atelier présentiel réunissant 7 représentants. Les résultats sont analysés pour dégager des priorités et des plans d'action.

Results

L'ITOCA a révélé des capacités limitées dans certains aspects des domaines organisationnels et techniques, avec un score de capacité le plus bas de 23% dans le domaine information stratégique. Des renforcements de capacité technique ont été apportés à partir de Février 2023 notamment en mettant en place un plan de suivi-évaluation et des procédures opérationnelles standard conformes aux normes de genre. Le système de collecte de données pour le suivi des 1298 parents pour la première fois du projet TMT urbain est maintenant digitalisé sur tablette.

Conclusions

L'intégration des ONG locales dans les projets de santé publique à Madagascar est nécessaire. L'analyse systématique des capacités organisationnelles permet d'identifier les forces et les axes d'amélioration pour mener à bien de tels projets. Un domaine majeur d'amélioration concerne l'information stratégique, nécessitant un effort particulier pour renforcer la production de données probantes pour la prise de décision.

1853

Domestic resource mobilization (DRM): a catalyst towards reducing catastrophic costs for TB patients

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Keywords

Tuberculosis
Philanthropists
Domestic resource mobilization

Introduction

Despite Tuberculosis diagnosis and treatment been free in Nigeria, costs relating to the illness and seeking for care could become catastrophic (>20% of earnings) for individuals. Nigeria is a developing country with 63% of the population living below the poverty line according to the World bank, thus making additional out of pocket spending catastrophic for many. To achieve the End TB strategy goals by 2035, DRM is promoted as one of the key strategies. We present results of the domestic resource mobilization experience from Kano state.

Methods

Leveraging on existing partnerships KNCV Nigeria supported the Kano state Tuberculosis control program in driving DRM. For the public sector; this involved advocacy, support of development of the state's annual operational plan to influence budgetary allocation and releases for the Tuberculosis program. It also involved working with stakeholders like the Kano state health trust fund (KHETFUND) and the Kano state contributory healthcare management agency (KSCHMA) to include TB services among the benefit packages of the scheme. For the informal sector, efforts included exploring partnership with small-scale enterprises for local production of sputum cups and engaging local philanthropists.

Results

We recorded a 300% increase in state Government budgetary allocation (from NGN10million in 2021 to NGN40million in 2022), the sustained advocacy efforts also saw to the release of part of the statutory 6% allocation earmarked for communicable and non-communicable diseases from KHETFUND to the state Tuberculosis program translating to NGN4.1million. A philanthropist donated a Genexpert machine for combined Covid-19/TB testing while another renovated 2 high burden DOT facilities and mini lab fully equipped with a TB LAMP machine.

Conclusions

DRM for Tuberculosis services in Kano state provided a huge funding boost in 2022 from both the public and organized private sector, building on these successes is critical to sustainable reduction of catastrophic costs for TB patients statewide.

1877

Understanding how to reach people with chronic illnesses and people aged 50+ with a national campaign on COVID-19 vaccinations in South Africa during 2023.

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Keywords

COVID-19, National Campaigns; RCCE; Vulnerable Populations

Introduction

South Africa's vaccination coverage in 2022 was 45% of the eligible population, yet many people who had chronic illnesses had not received their first dose or were overdue their booster. Project Last Mile with the National Department of Health created a campaign to: (i) increase knowledge of the importance of COVID-19 vaccination amongst people with chronic illnesses and those aged 50+; (ii) shift vaccination intent; (iii) increase vaccination incidence.

Methods

The campaign "You've Got This" comprised national mass media and local vaccination outreach events conducted mid-March to mid-June 2023 across two provinces. Campaign development was based on the premise that: encouragement can be used to shift intent;

simple delivery of facts can improve health literacy; and a broad range of media can achieve a focused communication outcome. The following data was collected to understand campaign impact: Pre- and post-campaign national surveys (n=512 and 485 respectively)

Vaccine outreach surveys (n=679) Focus groups and in-depth interviews

Results

Media channels included TV, radio, print, billboards, in-clinic TV screens, and digital media and reached approximately 9 million people. Almost 80,000 unique visitors visited the Find My Jab website (an indication of intent). During 6 field activations, 2,888 health services were delivered, including 1,001 COVID-19 vaccinations.

The campaign increased understanding that COVID-19 vaccinations are important for patients with chronic conditions by 9%. Claimed vaccination amongst 50+ rose 67% to 83%. Outreach event survey respondents confirmed an improvement in their understanding of why COVID-19 vaccinations are important for vulnerable groups, with 90%+ stating that the events made them feel more open to COVID-19 vaccinations.

Conclusions

This initiative demonstrates that an integrated national marketing campaign with multimedia executions and outreach events that bring vaccines closer to communities can increase awareness and health literacy and shift intent to vaccinate.

1880

Implementing a Theory of Change in Media Advocacy Theory of Change for Epidemic Preparedness and Response Funding in Nigeria, March 2023

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Keywords

Epidemics, Preparedness, Media, Advocacy, Awareness

Introduction

Public and policymaker engagement is key to effecting public health policy changes, including adequate health allocations. Since 2018, the #PreventEpidemicsNaija project has been working to build public and policymaker awareness of the need to fund Epidemic Preparedness and Response (EPR) efforts and strengthen the country's health security system. A media advocacy Theory of Change (ToC) was employed to increase public and policymaker awareness and engagement and foster a community of advocates for increased EPR funding in Nigeria. Key assumptions include the media's influence on policymakers and the ability of increased public demand to influence political will.

Methods

Key media advocacy strategies include strengthening media reportage of EPR funding stories via journalism masterclasses, fellowships, awards, and roundtables, stakeholder engagement via policy dialogues, advocacy visits, field trips, resource mobilization and capacity-building workshops, and civil society organization roundtables, and leveraging multiple platforms to increase media coverage of these activities, including social and traditional media.

Results

Since its inception, the #PreventEpidemicsNaija project has achieved remarkable traction, amassing over half a billion impressions across various social media platforms. Through concerted efforts, it has nurtured a robust media community for EPR reporting at national and subnational tiers, resulting in training more than 100 journalists, mentoring 9 fellows, and celebrating excellent reportage through 10 journalism awards. Beyond journalism, it galvanized public and policymaker support, catalyzing increased EPR funding at national and subnational levels. In two years, NCDC funding surged from 1.4B to 2.9B Naira (US$7.7M) in 2021.

Conclusions

Media advocacy is a viable tool for galvanizing public and policymaker support for public health policy changes. Key strategies for effective media advocacy include capacity building of journalists, leveraging social media for increased mentions, and dynamic engagement of policymakers by playing to their interests in the media.

1933

Use of mystery shopping strategies to establish HIV Self Testing quality of care in private sector

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Keywords

Mystery shopping
Quality of Care
HIV Self Testing
Pharmacies

Introduction

Private sector (Pharmacies) is a vital distribution channel for HIV Self Testing (HIVST) and selfcare products. Health program implementers have utilized these channels to promote access to and uptake of affordable healthcare products private sector. However, understanding the quality of care offered at these facilities remains a challenge for program implementers. This paper explores the effectiveness of mystery

shopping strategies to aid the identification of HIVST quality of care in the private sector.

Methods

Population Services Kenya in partnership with Ministry of Health mapped 43 pharmacies from the project participating facilities to conduct mystery shopping. The mapped pharmacies were consented on the mystery shopping. A total of 6 research assistants were recruited and trained on how to simulate shopping for HIVST kits. The trained shoppers were deployed and assigned different mystery shopping scenarios which they practiced before commencing the exercise. The data collected by the shoppers were analyzed by use of STATA and Excel statistical software.

Results

HIV Self-test kits were available in 93.5% of the pharmacies visited with majority of the pharmacists not displaying HIVST kits where clients could see. 75% of the pharmacies stocked non-prequalified kits that were retailing at a very low cost. Notably, 89% of the pharmacies were able to provide explanation on how to use the HIVST kits. Only 14% of the pharmacies had their promotional materials displayed to educate clients on HIVST usage and post testing procedures. Averagely, 68% of the pharmacies were able to promote effective use of the HIVST kits. It was also observed that pharmacists do not have time to sell the concept of selfcare bundled products (HIVST kits and selfcare product), they only sell what they are asked for by the client.

Conclusions

Mystery shopping is a proficient form of consumer research that test market product or service, and quality of care.

1947

Leveraging concerts and festivals to Influence uptake of HIVST and HIV prevention: Lessons from implementation science in Kenya..

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Keywords

HIVST, SRH, AYP, HIV Prevention, Private sector

Introduction

AYP represent a growing share of people living with HIV in Kenya. In 2022 alone, 41% of new HIV infections occurred among AYP (15-24 years).The strengthening HIVST in private sector (SHIPS) project aimed to grow the private sector market for HIVST kits for public health impact among young males and females of ages 18-34 and males of 35+ years, a reason for this approach is that AYP at risk of HIV will never go to public health facilities for testing which is why we need to empower the private sector to offer services in traditional settings to normalize and reduce stigma associated. We hypothesized that while the AYP remain underserved by available HIV prevention and self-care information and services, leveraging concerts and festivals could increase awareness on HIV, and SRH and, in the end, achieve the set outcomes.

Methods

PS Kenya in partnership with media groups conducted 9 events (2 targeting males of 35 + and 7 targeting young males and females of ages 18-34 and males of 35+). SHIPS Project engaged retail pharmacies to support in selling HIVST kits and other SRH products. Brand ambassadors and sales agents were also involved to drive traffic to the exhibition corner. The master of ceremony occasionally mentioned availability of self-care exhibition booth and service offered by program staff onsite.

Results

Overall,9,077 were reached with information on HIVST, HIV prevention, self-care and linkage to treatment and care services. 238 HIVST kits and 543condoms were sold during the events. High proportion of females were attracted to information provided compared to their male counterparts(64% and 36% respectively).

Conclusions

Festivals and concerts can be good referral point for HIV and HIVST services among young people in urban areas and are likely to increase reach in access to effective HIV prevention, diagnosis, treatment and care, including for opportunistic infections.

1954

Demand and Supply side factors that drive delayed referrals from traditional birth attendants to primary health care facilities: insights from three states in Nigeria, June 2023.

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Keywords

delayed referrals, traditional birth attendants, maternal health services, primary healthcare facilities, Nigeria.

Introduction

Introduction: Despite global efforts encouraging institutional deliveries with skilled attendants, many pregnant women in developing countries continue to rely on traditional birth attendants (TBAs). This recognition has led to efforts at collaboration and training of TBAs in the communities for appropriate emergency care and prompt referrals of complicated childbirth cases. However, there continues to be delayed referrals, leading to adverse maternal and newborn health. This study explores the factors responsible for delayed referrals from TBAs to primary healthcare (PHC) facilities in Nigeria.

Methods

Methodology: Review of documents and qualitative data collection were used. Data was collected from 102 respondents across three states (Akwa Ibom, Anambra and Kano) in Nigeria, using ninety (90) in-depth interviews and twelve (12) focus group discussions. Respondents included formal and informal providers, including TBAs, policymakers, community leaders and service users. Thematic analysis was conducted, triangulating information from interviews and the reviewed documents.

Results

Results: Structural and personal factors were highlighted as reasons for delayed referrals from TBAs despite receiving training. Demand side factors that constrain referrals from TBAs to PHC centers were community preference for TBAs and cultural and religious inclinations of the consumers to TBAs for deliveries. Supply-side factors were infrastructural deficits, staff shortages and lack of sanctions for poor practices in PHC centers. There were also poor incentives for the TBAs to refer their clients to the PHC centers and cases of feelings of entitlement to the birthing process and a sense of superiority by TBAs.

Conclusions

Conclusion: The study clearly shows that there are demand and supply side factors that constrain the referral of pregnant women from TBAs to the PHC facility for child delivery. Those factors should be addressed if the goal of having institutional deliveries with skilled birth attendants will be achieved. Some incentives should also be provided to TBAs to encourage early referrals.

1994

Civil society evidence use and participation in vaccine decision-making in Ghana

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Keywords

Civil society, evidence use, participation, vaccines, decision-making, Ghana

Introduction

Responsive and inclusive decision making is more important now in the context of public health emergencies such as the covid-19 pandemic. WHO notes that for effective health emergency response, decisions around strategy must be inclusive of all relevant actors. To date, there is a growing interest in the role of civil society groups in health policy decisions and increasingly the concept of giving a 'voice to the voiceless' particularly citizen groups has fast gained grounds in healthcare decisions. This study seeks to map-out and critically examine the role of CSO in policy making and how effective they have been in contributing to policy decisions for health.

Methods

This is an ongoing qualitative case study that involves document review, meeting observations, expert deliberations and 5 key informant interviews from civil society, government and development partners involved in decision making for vaccine introduction and roll-out at the national level in Ghana.

Results

From our preliminary findings, there are 382 NGOs working in health under a coalition. Only a third actively work on vaccines and related issues. CSOs are more involved in roll-out decisions than generating evidence to inform vaccine introduction. This involvement is more to the roll-out side than introduction. CSOs role in vaccine policy decisions are mainly advocacy and ensuring fairness in distribution, but little on accountability. Evidence brought to policy making by civil society are mostly experiential that lacks scientific basis for conclusions. Capacity to generate, translate and adapt guidance on vaccine introduction and roll-out is low.

Conclusions

Even though there is participation by CSOs in vaccine decision making in Ghana, this is largely at the roll-out stages. There is the need for a more inclusive platforms that absorbs CSO

evidence. There is also the need for strengthening the capacity of CSOs to be more systematic in generating evidence for vaccine decision making.

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Using Community Health and Demographic Surveillance Sites in 3 African Countries to Assess Differences in Disease Burden

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Keywords

Cause of death
Verbal autopsy
Health and demographic surveillance sites
Burden of disease in Africa
Mortality

Introduction

In Africa, the burden of disease is predominantly driven by infectious and chronic diseases. The Global Burden of Disease studies and World Health Organization reports provide periodic updates to the current diseases in Africa. However, Health and Demographic Surveillance Sites (HDSS) remain valuable sources of data that can be used to enrich local information on diseases burden in African communities. We explored the causes of death (COD) from 3 HDSS in Africa.

Methods

This study was conducted under the Implementation Network for Sharing Population Health Information from Research Entities (INSPIRE) using annual survey data from three HDSS sites; NUHDSS in Kenya, Iganga-Mayuge HDSS in Uganda and Karonga HDSS in Malawi. Verbal Autopsy (VA) data was used to understand COD variation and to examine potential socio-demographic and policy influences. The VA records and socio-demographic variables were extracted from each HDSS and harmonized. Trends in all-cause and cause-specific mortality rates were calculated and stratified by age, gender and HDSS site.

Results

A total of 207,568 persons were included in the study of which 65,000 were from NUHDSS, 94568 from Iganga-Mayuge and 48000 from Karonga. NUHDSS had 6218 (9.6%) deaths recorded between 2002-2016 and the top 5 COD were Pulmonary tuberculosis (19%), HIV (16%), Pneumonia (11%), Assault (8.9%) and Meningitis (4.5%). Iganga-Mayuge, 5064 (5.3%) deaths recorded from 2007-2022 with top 5 COD including Malaria (16%), HIV (7.6%), Still births (5.5%), Hypertension (4.9%), and Diarrheal diseases (4.1%). Karonga recorded 4675 (9.7%) deaths with top 5 COD including HIV (12.5%), Pneumonia (12.4%), Infectious diseases (8.3%), digestive neoplasms (6.8%) and Malaria (5.4%).

Conclusions

Community HDSS provide rich data that can be used to triangulate burden of disease and can be used to validate Global Burden of Disease estimates in Africa. The burden of diseases differs in African countries and calls for country-specific strategies to address high mortality in Africa.

2054

Community-based Health Misinformation Management: Insights from Niger State (2022-2023)

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Keywords

Misinformation, Health, Community-based, Niger State, Community Listening

Introduction

In an era where information flows freely through various online and offline channels, the proliferation of health misinformation has emerged as a significant public health concern. This has far-reaching consequences, including poor health-seeking behaviour and adverse health outcomes. Nigeria Health Watch piloted a health misinformation management project in Niger State to address the spread of misinformation and promote accurate, evidence-based communication in communities.

Methods

The project employed a mixed methodology, including in-depth interviews, social and community listening, and analysis of online conversations. The sample framework included sample size determination and purposive selection of local government areas (LGAs) for data collection. A baseline assessment was conducted using insights from online social listening, after which targeted interventions to address identified misinformation were implemented, including radio cam-

paigns and capacity building of community influencers and healthcare workers, who then cascaded the training to the community using visual aids/posters. An endline assessment was conducted after about six months to determine effectiveness. Baseline and endline data was analysed using Excel and NVivo.

Results

A total of 407 and 424 respondents participated in the baseline and endline assessments respectively, of which 39% (baseline) and 49% (endline) were female, and 43% (baseline) and 25% (endline) had secondary level of education. Common sources of health information include healthcare workers, town criers and community meetings, and radio. Respondents reported using primary healthcare centers, patent medicine vendors, and traditional health centers for healthcare needs. At endline, there was a 32% increase in knowledge gain among those categorised as "informed," and a 33% decline in those categorised as "misinformed" compared to baseline.

Conclusions

Community-based health misinformation management strategies can benefit from innovative social listening and communication approaches, which leverage existing community structures. This is key to increasing awareness, improving information quality, empowering communities, and providing valuable insights into health misinformation trends.

2090

Leveraging Private Pharmacy Engagement for Sustainable HIV Self-Testing market: Insights from the Unitaid-funded STAR Nigeria project

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Keywords

HIV Self Testing; Private sector; Total Market Approach; Sustainability

Introduction

The private sector serves 60% of health needs in Nigeria and can potentially address HIV testing barriers like long waits and stigma in public facilities. From 2021-2022, Jhpiego Nigeria and partners rolled out HIV self-testing (HIVST) in private pharmacies, aiming to increase accessibility and promote sustainable investment through innovative demand-side financing strategies.

Methods

From November 2021-October 2022, a total of 75,000 blood-based HIVST kits were donated by Unitaid. Ninety community pharmacies were identified across 4 states based on geographic distribution, experience in ART refills and capacity to provide HIVST services. They were trained on HIVST service delivery, demand creation, product placement, referral, linkages and reporting. To sustain these efforts, a demand side financing model (where pharmacies received 3 free HIVST kits for every HIVST kit purchased from distributors) was deployed to reduce financial barriers from end-users until the final product price was achieved. This innovative approach lessened the investment risk for providers while generating demand and stimulating investments for the product. Information on investment in HIVST, HIVST distribution, reported results, linkages, and orders placed were tracked.

Results

A total of 19,651 HIVST kits were distributed. 18,970 (96.5%) individuals reported their HIVST results, 57 were confirmed positive and 45(79%) started ART. Through STAR's efforts, an investment of approximately 9,000 USD was stimulated through procurement of 2,920 HIVST kits by the private pharmacies within the first 3 months. An additional pooled investment of 5,000 USD and commitment of over 10,000 USD has been aggregated by the Association of Community Pharmacists of Nigeria following the intervention. Through strategic engagement, the project expanded HIVST distribution to eighty-one additional pharmacies by scaling from 4 to 17 states, driving increased uptake and significant private investments.

Conclusions

The innovative demand-side financing approach proved effective, suggesting a scalable and replicable model for enhancing health service delivery.

2092

Using a social and behavior change approach to increase COVID-19 vaccination among healthcare workers in Zambia.

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Keywords

COVID-19 vaccination among healthcare workers

Introduction

Background

In April 2021, in Zambia, health care workers (HCWs) were among the first groups prioritized for COVID-19 vaccination. However, an estimated 70% opted out due to skepticism, resulting from misinformation. HCW buy-in was essential to the success of the vaccine program. The USAID DISCOVER-Health Project, implemented by JSI, designed and implemented a social and behavior change (SBC) strategy to increase vaccine uptake among HCWs in Central, Copperbelt, and North-Western provinces.

Methods

In August and September 2021, the project engaged 1,500 HCWs in focus group discussions to identify barriers and motivators around COVID-19 vaccine uptake. Using these insights and human-centered design techniques, the project's SBC campaign included:

- Developing messaging for HCWs addressing their concerns about the vaccine and highlighting its benefits.
- Organizing vaccine information sessions for HCWs, including an open forum for discussion.
- Pairing information sessions with on-site vaccination services.
- Designing and producing promotional materials, including t-shirts, water bottles, caps, key holders, and bumper stickers.
- Creating informational materials, including fact sheets, booklets, posters, and talking points.
- Developing scripts and engaging national and local media for TV, radio, print, and social media coverage.
- Training 36 journalists to reinforce consistent and accurate COVID-19 messaging and dispel misinformation.

Results

By November 2021, 92% of the project-supported HCWs had been fully vaccinated. The media campaign reached 3.5 million TV viewers and 12.5 million radio listeners. The three-supported provinces were among the first nationally to reach the 70% vaccination target for eligible populations.

Conclusion

Using an SBC approach that engaged civil society and the private sector to move HCWs from COVID-19 vaccine barriers to facilitators was essential to sensitize and vaccinate the general public. Additionally, training an informed and supportive media was a powerful approach that helped Zambia reach its 70% national vaccination target in October 2022.

2094

Characteristics of Women Seeking Cervical Cancer Cytology Screening in A Private Health Facility

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Keywords

Cervical cancer screening; self-initiation; private health sector; Ethiopia;

Introduction

Public health facilities in Ethiopia offer free cervical cancer screening for eligible women. Besides the public health facilities, private providers also offer a variety of screening services at the patients' expense. As the overall cervical cancer screening uptake in Ethiopia is still far below the 90% WHO target, coordination between all actors of the health system is key. To gain insights into the utilization of cervical cancer screening in the private health sector, we conducted an institution-based cross-sectional study at Arsho Medical Laboratories in Addis Ababa.

Methods

A cross-sectional study was conducted among women who came for cervical cancer screening between May 1 to June 30, 2020, at Arsho Medical Laboratories in Addis Ababa. All 274 women participated in the interviews who came during study time. Descriptive statistics was used to characterize socio-demographic and clinical variables. Based on the information, further characterized women as the "self-initiated" group and the "non-self-initiated" group for those who received a recommendation for screening by a health professional.

Results

Among women interviewed 37.6% reported as self-initiating the screening. Near half (43%) of the women discussed screening with their partners all had full support. More than three-quarters (80% in self-initiated vs. 75% recommended by professionals) of women reported mostly using the private

healthcare sector for all kinds of health services and 56% of self-identified women stated the recent screening was in the last two years during the interview.

Conclusions

While the Ethiopian government's efforts to scale up cervical cancer screening focus mainly on public health facilities, the private sector often does not get as much attention from policy directions. Efforts should be made to expand more cervical screening services to the private healthcare sector to meet the 2030 elimination targets

2100

Successful Budget Advocacy by Zambia's FLAME (Faith Leader Advocacy for Malaria Elimination) Coalition

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Keywords

FLAME EMC Civic Leaders Budget Change

Introduction

In 2017, Zambia rebranded its malaria control program to a malaria elimination program. In 2019, Zambia established an End Malaria Council (EMC) comprised of political, business and civic leaders, including faith leaders. Faith Leaders formed a coalition to speak truth to power in order to help the government understand the challenges affecting the communities and the country at large regarding malaria elimination, including the need to have a budget allocation for malaria programmes.

Zambia's malaria budget allocation was the same in 2019, 2020, and 2021. This prevented bold action towards accelerating the country to a malaria-free future. The strategic plan had a gap of USD 100 million to reach its goal. COVID-19 further diverted attention and funding.

Methods

The FLAME – Faith Leader Advocacy for Malaria Elimination – secretariat facilitated the establishment of 1 national and 10 provincial FLAME coalitions. At least four faith leaders were trained in malaria in each of Zambia's 116 districts.

FLAME leaders shape the national dialogue around malaria elimination by popularizing the effort to end the disease. This is done through hosting weekly national radio programs with the EMC, social media, training media malaria advocates, engaging MPs, and bringing the topic of malaria into provincial and national fora.

Results

The Zambian government budget allocation for malaria doubled, from 97 million kwacha (USD 5.6 million) annually in 2021 to 194 million kwacha (USD 11.3 million) in 2022.

The annual allocation for each Constituency Development Fund increased from 1.6 million kwacha in 2021 to 25.7 million kwacha in 2022. This fund, allocated locally, can be used for malaria. Faith leaders trained by FLAME are influencing its allocation.

Conclusions

FLAME Zambia demonstrated that faith leaders can play a meaningful role as advocates.

2116

Leveraging local leaders for successful COVID-19 vaccination uptake in Central Province, Zambia: A multisectoral approach

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Keywords

COVID-19 vaccine, local leadership, vaccine hesitancy, multisectoral approach

Introduction

In April 2021, Zambia received its first batch of COVID-19 vaccines, following months of growing COVID-19 vaccination misinformation and resultant vaccine hesitancy. In Central Province, only 15% (164,200) of the 1,060,213 people eligible for vaccination were fully vaccinated by the end of April. In March 2022 in Central Province, as part of a national campaign, USAID DISCOVER-Health, implemented by JSI, employed a multisectoral response to engage leaders and help the Zambian government achieve its target of vaccinating 70% of the eligible population.

Methods

Over 10 days, the project engaged leaders across political, traditional, religious, civic, and professional spheres to champion COVID-19 vaccination. As part of the effort, members

of the Provincial Administration Leadership went to all 10 districts in the province and spoke with members of District Development Coordination Committees to get their buy-in to support vaccine promotion. A total of 275 leaders in the province were involved in the effort. Collaborating with these respected leaders, the project trained them and empowered them with specially-developed information materials. These leaders were then able to share the benefits of vaccination, dispel misinformation, and cultivate vaccine acceptance in their extensive networks.

Results

By July 2022, Central Province achieved 76% vaccination coverage, with 808,529 individuals in the province fully vaccinated, increasing uptake by 61% in 3 months. This multisectoral model harnessed local leaders' credibility, reach, and influence, fundamentally altering the vaccination landscape.

Conclusions

The increase in COVID-19 vaccination coverage underscores the impact of strategic and collaborative engagement with influential leaders. It highlights the value of engaging leadership from multiple sectors to help move people from vaccine barriers to vaccine facilitators. Central Province's success was replicated nationwide, and Zambia achieved the goal of fully vaccinating 70% of the eligible population by October 2022.

2156

Shifting power dynamics in global health through equitable partnerships

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Keywords

Global Health, Power shifting, Partnerships

Introduction

This study centers on the imperative to address historical colonial influences on modern day global health systems, characterised by inequality, exploitation, and racism. Public health practitioners need to to pursue actions to create equitable partnerships and reshape power dynamics.

Methods

The Power Shifting Subcommittee from the International Conference on Family Planning (ICFP) has convened four interactive dialogues since November 2022. Every conversation was customised to our audience made up of international, regional, and local civil society; multilaterals; donors; government; and academia. All explored the question: what can we do to shift power and advance equity now? These discussions were facilitated to identify resources, strategies, and actions for promoting equity and shifting power in global public health.

Results

Through these conversations, the subcommittee has engaged with more than 1,200 individuals from 111 countries across the globe as of August 2023. Before the conversation, we asked about their long term hopes for power shifting. During the event we asked what actions participants would prioritise for themselves and their community .

Preliminary results have revealed that 42% (130) of respondents wanted to learn about emerging practices in shifting power, and many were also interested in creating equitable partnerships. Key questions focused on how to implement power shifts (32%, 41) and what long term structural changes will dismantle existing systems. Long term hopes focused on moving priority setting and decision-making closer to communities while improving partnerships.

Next steps identified included learning and unlearning individual behaviours and biases and doing partnership better. Concrete actions identified followed a similar pattern with an emphasis on learning and unlearning, continuing the conversation, and challenging current partnership dynamics.

Conclusions

This study underscores the necessity of addressing colonial legacies in global health. By sharing insights and practical steps, the initiative aims to foster change and advance equity within the global health landscape.

2202

Collaborative partnerships in promoting coordinated response to COVID-19: A case of Eastern Africa Region Saving Lives and Livelihood (SLL) Program 2022-2023

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Keywords

Partnerships, Implementing Partners, COVID 19

Introduction

The Eastern Africa region constitutes 14 Member States (MS) of the African Union (AU) with a population of 385 million. The Saving Lives and Livelihood (SLL) a 1.5 billion program, funded by MasterCard Foundation in partnership with the Africa Centre for Disease Control and Prevention (Africa CDC) engaged implementing partners (IPs) to vaccinate 65 million people in Africa by 2025. The program anchored its implementation on a well-coordinated multi-actor partnerships approach, advancing Africa CDC's New Public Health Order that advocates for respectful and action-oriented partnerships.

Methods

The program adopted a collaborative partnership model, building on existing relationship between Africa CDC, MS and IPs. African-based IPs i.e. AMREF and Kenya Red Cross Societies were selected through a competitive bidding process to implement the SLL program in Eastern Region. These IPs sub-contracted 18 locally based organizations to increase access to COVID-19 vaccination, address vaccine hesitancy and facilitate in-country logistics. Over 60 weekly meetings with IPs and MS were conducted providing avenues for regular feedback and identifying bottlenecks hindering implementation. Cross-learning among MS and IPs was achieved through weekly regional meetings, Community of Practice (COP) and capacity-building sessions. Continuous Monitoring Assessments (CMAs) and Data Quality Assurance (DQAs) were undertaken to monitor implementation and strengthen the IPs organization capacity and MOH health systems.

Results

Approximately 20 million COVID-19 vaccines were administered across the Eastern Africa Region within the first year of implementation. 40 million people were reached through targeted health messages,1,650 vaccination centers were supported and over 10,000 HCWs were trained. Six countries that undertook perception surveys guided Risk Communication and Community Engagement (RCCE)

Conclusions

This partnership has contributed to vaccine equity and policy change in the region. The collaboration identified culturally acceptable practices contributing to increases in vaccine uptake. MS where there was strong collaboration and program ownership, favorable results were achieved.

2243

Enhancing the contribution of Private Health providers to Tuberculosis case finding in Southwest Nigeria – the USAID TB-LON 3 project experience (October 2021 to September 2022)

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Keywords

Private sector; Case findings; Private health facilities; Tuberculosis

Introduction

Private healthcare providers are critical in detecting and treating tuberculosis (TB) in countries like Nigeria with a private sector-driven healthcare system. Formal and informal private healthcare professionals have systematically engaged in providing TB services in Nigeria. The paper presents the contribution of private providers to the diagnosis and treatment of tuberculosis under the USAID TB Local Organization Network (LON-3) in Southwest Nigeria.

Methods

The intervention was implemented through a partnership with the private sector (formal and informal). October 2021 to September 2022, USAID Tuberculosis Local Organization Network 3 project developed and rolled out the implementation of a public-private mix optimization plan in Lagos State to improve Tuberculosis service coverage in already engaged private health facilities and facilitate systematic expansion into unengaged facilities. Lessons learned were adapted to impact scaleup in Ogun, Oyo, and Osun states. 492 Private Hospitals, 77 Community Pharmacies, 139 Stand Alone Labs, 378 patent and proprietary medicine vendors, and 133 traditional birth attendants/traditional medicine practitioners facilitated the screening.

Results

1,918,336 individuals were screened, 90,545 (5.0%) presumptive were identified, and among these, 85,828 (95.0%) were tested/evaluated. The private sector improved the screening rate from 32% to 69% and the presumptive yield from 2% to 4.2%. Consequentially, from October 2021 to September 2022, the private sector contributed 24% (diagnosed 6,881 Tuberculosis cases) to Tuberculosis case finding on the USAID Tuberculosis Local organization Network 3 project. In comparison, 6,431 (93.0%) Tuberculosis (TB) cases were notified through the private sector for the period of October 2021 to September 2022

Conclusions

The intervention effectively enhanced Private Health Providers' contribution to tuberculosis case finding in Southwest Nigeria. However, there is a need to design innovative approaches and rapidly scale up these providers' engagement, strengthening their capacity and monitoring their adherence to tuberculosis guidelines.

2320

Strengthening Capacity for Media Reportage of Epidemic Preparedness and Response at National and Subnational Levels (Kano and Lagos), March 2023

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Keywords

Epidemics, Preparedness, Response, Media, Communication

Introduction

Effective media engagement is pivotal in shaping public awareness and response to disease outbreaks. The role of the media in disseminating accurate information during outbreaks such as COVID-19 is undeniable. This project aimed to empower journalists to effectively communicate the significance of epidemic preparedness, steer public discourse, and advocate for robust policies and financing for epidemic preparedness and response (EPR) at national and subnational levels in Nigeria.

Methods

The project employed a learner-centred approach, utilizing active learning techniques to enhance participation and comprehension, adopting a "learning by doing" strategy in training media professionals across the national level and Lagos and Kano States. A total of 15 journalists across print, TV, online, and radio were trained in evidence-based EPR reporting and data visualization. Pre- and post-test assessments were conducted and analysed to identify knowledge gaps before and after the workshop, measuring the impact of the training.

Results

The project generated notable advancements in participants' skills, particularly in EPR reporting, evidence-based journalism, and data visualisation. EPR reporting knowledge increased by 6%, understanding of data journalism's relevance in reporting small and large-scale epidemics increased by 12%, and a 27% increase in recognition of the need to source data from official channels. Knowledge of data visualisation techniques increased by 27%, with a 7% growth in understanding their potential to highlight disparities. Post-training, sponsored stories amplified media engagement, yielding diverse publications across EPR themes.

Conclusion

Effective media engagement is a pivotal factor in enhancing the quality of EPR reportage, fostering a deeper understanding among journalists, and equipping them to effectively advocate for EPR at national and subnational levels. By sensitizing the media and improving journalists' grasp of EPR concepts, there has been a notable increase in media coverage with and public demand towards the importance of securing adequate funding for EPR.

2348

Correlational analysis of gastropathic ulcers and NSAIDs: Evaluating Community Pharmacists' Knowledge, Attitudes, and Dispensing Practices of NSAIDs in Relation to Gastropathy Risks

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Keywords

Rwanda, Gastropathy, gastrointestinal bleeding, NSAIDS, Community pharmacies

Introduction

Despite the rising prevalence of NSAID-induced gastropathy, including gastrointestinal bleeding and peptic ulcers, there is a paucity of research on pharmacies' role in patient education and safe medication use in this region. This study aims to assess the knowledge, attitudes, and dispensing practices concerning NSAIDs and related gastropathy risks among community pharmacists in Rwanda's populous Gasabo district.

Methods

In this cross-sectional study, pharmacists from 30 community pharmacies in Rwanda's Gasabo district were surveyed using stratified random sampling. A validated structured questionnaire was employed for data collection, covering topics such as demographics, knowledge, attitudes, and dispensing practices concerning NSAIDs and gastropathy risks. Data analysis was performed using R programming, encompassing descriptive statistics, Chi-square tests, logistic regression, and cluster analysis to provide a comprehensive view of pharmacists' roles and behaviors.

Results

Half of the participants updated their knowledge on NSAIDs from less than a year ago to five years ago (70%). The majority of pharmacists 70% were male and 30% female, with the majority's practice in community pharmacies below 10 years (90%). Pharmacists seem to provide other drug-related information to patients, but a great number do so occasionally (46.7%). 48% of the selection-based criteria in dispensing NSAIDs were cost and efficacy related, only 18% referred to the side effect profile of the medicine; 46% didn't know the existence of other NSAIDs risks apart from gastrointestinal, and their attitude seems positive in most cases, excluding their association of patient education as time-consuming in 46.7% of participants.

Conclusions

The study reveals significant gaps in pharmacists' knowledge and dispensing practices related to NSAIDs and their associated risks of gastropathy. Given that these drugs are available without prescription and are susceptible to abuse, interventions such as regular training and monitoring are crucial for enhancing patient awareness and reducing morbidity and mortality rates.

2349

Strengthening Civil Society Engagement for Effective COVID-19 Response in Nigeria.

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Keywords

COVID-19, Civil Society Organizations, Response Actions, Capability Strengthening, Nigeria

Introduction

In March 2020, the WHO declared COVID-19 a pandemic, emphasizing the need for resilient health systems and robust responses to diseases of public health concern. To battle the pandemic, the Nigerian Government established structures and rolled out several initiatives to control and mitigate the challenges. However, in the implementation of these response actions and initiatives, the role of Civil Society Organizations (CSOs) was not fully leveraged, and this impacted the effectiveness of the government's community engagement efforts. Nigeria's response, while comprehensive, underutilized CSOs, impacting community engagement. Our project aimed to enhance multi-sectoral CSO coordination and mobilization to mitigate COVID-19's impact at subnational and community levels.

Methods

The project focused on four pillars: coordination, capability, communication, and accountability. Coordination improved linkages between state and federal CSOs, amplifying community voices. Communication enhanced transparency and stakeholder information sharing. Capability was strengthened through gap assessments, training and monitoring, while accountability evaluated response effectiveness and resource mobilization. Through virtual engagements, co-creation workshops were organized to map multisectoral CSOs and co-define key indicators across the four pillars.

Results

The forty-three (43) empowered CSOs contributed to awareness creation activities, training, projects, and advocacies. Simplified multi-sectoral guidance documents were developed, including guidelines for reopening of schools and worship centres, advisories for vulnerable groups, safe management of dead bodies, and self-isolation. Contextual information on government and community responses to COVID-19 was generated. This resulted in seven states incorporating CSOs into their COVID-19 task forces.

Conclusions

CSOs have played a vital role in improving the COVID-19 response. This was achieved through capacity building, effective risk communication, peer learning, policy dialogues, and accountability activities. CSOs led discussions with stakeholders advocating for necessary response enhancements. To ensure sustainability, we boosted CSOs' capacity and established a policy engagement framework, ensuring ongoing engagement in our quest for an effective COVID-19 response.

2405

SIGNIFICANCE OF ONE HEALTH APPROACH AND PRIVATE SECTOR ENGAGEMENT IN DISEASE DETECTION, PREVENTION, AND CONTROL IN KENYA; BOMET, NAROK, WEST POKOT AND THARAKANITHI COUNTIES.

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Keywords

Multisectoral approach, Community engagement, digital technology, partnerships, community-based surveillance.

Introduction

Kenya Red Cross with USAID/IFRC funding showcases disease prevention via a multi-sector, whole-of-society strategy. The collaboration spans civil society, the private sector, media, education, the Ministry of Health, and more, resulting in better health and global acknowledgment of Africa's role in global health. The intervention seeks to demonstrate the holistic approach of involving various stakeholders in epidemic and pandemic response.

Methods

To expedite the dissemination of actionable health information within communities, 16 local media personnel from 4 stations were trained by BBC Media on lifeline communication. Collaborating closely with relevant ministries via the One Health Approach, these stations broadcast health messages in local dialects before, during, and after epidemics. This effort addresses various epidemics of both human and animal origin, enhancing disease detection and response. Through coordinated efforts, 730,274 animals were vaccinated in collaboration with 1000 trained private veterinarians. Communities were empowered for community-based surveillance, resulting in early detection and reporting through approved government structures. Leveraging Kenya's Community Health Strategy, the project trained 1,105 Community Health Promoters to use simple phone digital technology for timely reporting of unusual health events.

Results

Over 4 years (2020-2023), this effort reached 1,072,491 people across 4 counties. Real-time health info was provided via local media, alongside training for Community Health Promoters, Animal Health Assistants, and Agents. Schools formed health clubs led by trained teachers for peer education. Results show improved sanitation (33% to 77%), animal carcass disposal (10% to 60%), vaccination (40% to 80%), and health-seeking behavior. Prior, target areas faced frequent preventable zoonotic epidemics. This success highlights Kenya's leadership in reshaping global health through comprehensive community-based approaches. The project is a testament to collaborative strategies' impact on public health.

Conclusions

Kenya aids global health by embracing holistic methods to disease control, as seen in the Community Epidemics and Pandemic Preparedness Project.

2487

Private Sector Engagement in Madagascar's COVID-19 Vaccine roll out: Achievements, Challenges, and Future Implications

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Keywords

Private sector, covid-19, vaccine, integration, innovation

Introduction

Madagascar has been significantly impacted by the global COVID-19 pandemic with 64,009 cases and 1,384 deaths. This study focuses on Madagascar's response to the pandemic through a comprehensive vaccination campaign. The National Vaccination and Deployment Plan aimed to inoculate 14,209,024 individuals (representing 50.5% of the population or all persons above 18 years old) by June 2023. Private sector engagement was pivotal in providing accessible vaccination services, and presented an opportunity to not only address the immediate crisis but also to shape the long-term immunization.

Methods

One hundred private health facilities (PHFs) were selected from USAID's 15 intervention regions with purposive sampling based on specific criteria defined together with the Ministry of Health: geographical location, compliance with the MOH procedures, numbers of clients, and logistical capacity. Joint missions were carried out to assess the situation at the selected PHFs to discuss their readiness to collaborate on Covid vaccination. Results including vaccination number, dose distribution and demographic characteristics of beneficiaries were recorded in DHIS2.

Results

Between October 2022 to April 2023, 100 PHFs fully vaccinated 39,911 individuals, initiated first doses for 40,388, and administered boosters to 5,374. Challenges stemmed from the profit-oriented nature of the sector, affecting free service integration, and equitable vaccine access. Key innovation included tailored performance contracts, aided by logistics and finance. PHFs adopted a strategic fixed-forward approach, aided by DHIS2 for streamlined data. These findings highlight PHFs' critical role and offer insights into addressing challenges and enhancing private sector involvement in broader immunization agendas.

Conclusions

Recognizing the pivotal role of Private Health Facilities in COVID-19 response and incorporating this strategy into rou-

tine immunization constitutes a mutually beneficial innovation. This approach heralds a win-win strategy, fostering Madagascar's vaccination program and contributing to enduring healthcare advancements.

2497

Stakeholders' awareness and perception of a Total Market Approach as a strategyfor expanding access to priority health services and products in Zambia

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Keywords

Private sector, Total Market Approach, Zambia

Introduction

Developing country governments are increasingly supporting a health system which enables the private sector to support Universal Health Coverage (UHC). This has resulted in the propagation of a Total Market Approach (TMA) by donors and cooperating partners in the health sector. A TMA mandates robust engagement of stakeholders from the public, private commercial, and private non-profit sectors, with the government leading the process. To operationalize and actualize the benefits of a TMA in Zambia, it is important to understand stakeholders' perceptions of the concept. This study explored stakeholders' awareness and perceptions of TMA as a strategy for expanding access to health products and services in Zambia.

Methods

Qualitative data were gathered between August and September 2022 from Central, Copperbelt, Lusaka and Southern provinces of Zambia. Study sites were selected based on the high concentration of private health facilities. Data were collected using interviews with key informants from the public sector (n=14), private sector (n=31), and cooperating partners (n=1) who were sampled purposively. Public sector participants included stakeholders from the Ministry of Health and regulatory agencies. Private sector participants included representatives from pharmaceutical businesses, private sector associations, private practitioners, training institutions, and insurance companies.

Results

Only 10.9% of the 46 respondents reported having heard of TMA and were able to articulate it. Twenty-three percent had heard about it but were not able to explain it. The majority of respondents (65.2%) had never heard about TMA. Irrespective of the awareness and knowledge levels, all participants supported the concept of a mixed health market (TMA) in attaining UHC but also pointed out the possible challenges and benefits of implementing TMA.

Conclusions

Study results demonstrate low levels of awareness and knowledge about TMA among public and private health sector actors. To ensure its operationalization, TMA should be incorporated in key policy documents such as National Health Policy.

2512

Applying Social Behavior Change interventions to increase uptake of PrEP through the private sector in Copperbelt Province, Zambia

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Keywords

Pre-exposure prophylaxis (PrEP);adolescents and young people; Private Hospitals

Introduction

Stigma and disclosure concerns have been barriers to the uptake of pre-exposure prophylaxis (PrEP) among the vulnerable and most at risk adolescents and young people in Zambia. To increase PrEP uptake in private health facilities, the USAID Zambia Accessible Markets for Health (ZAM-Health) Project employed several social and behavior change interventions.

Methods

Between October 2021 and June 2023, the ZAM-Health project provided training, mentorship, and supervision to adolescents and young people support groups, community health workers and healthcare providers in six private hospitals. Delivery of PrEP was integrated into routine services

to normalize its uptake. Demand for PrEP was generated through community mobilizers, social media platforms, and peer-to-peer referrals. Data on PrEP uptake was captured using paper-based registers and manually entered in project databases.

Results

A total number of 1,856 clients initiated PrEP in the six ZAM-Health supported private health facilities: 979 (53%) females and 877 (47%) males. Adolescents and young people (AYPs) constituted 36% (671) of clients. The quarterly uptake of PrEP increased from 11 clients in the fourth quarter of 2021 to 693 in the second quarter of 2023. The largest increase in the number of clients initiating PrEP was recorded among adult females (25 years and above) from 1 to 180 (9% to 26% of the quarterly total). The number of AYPs initiating PrEP increased from 8 in quarter one to 362 in quarter four.

Conclusions

Our results demonstrate the potential of using SBC interventions to increase uptake of PrEP through the private sector. The ZAM-Health Activity will scale up these interventions to private health facilities in other provinces with focus on AYPs, who constitute the highest risk population for HIV infection in Zambia.

2583

Enhancing public health through public-private partnerships: A case study of the community-health and wellbeing program to meet SDG 3 targets in Limpopo, South Africa.

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Keywords

Public-Private Partnership, innovative financing, collaboration, healthcare system strengthening, UN Sustainable Development Goals

Introduction

Public-private partnerships (PPPs) drive robust investment and impact in public health, while reducing reliance on donor funding. A synergistic partnership between Right to Care, Anglo American, and the Limpopo Department of Health leverages strengths of both sectors to implement community health interventions designed to improve the health and well-being of peri-mining communities in Limpopo, South Africa.

Methods

Anglo American's sustainable mining plan, guided by a mixed-method baseline assessment, aimed at understanding health and wellbeing priorities of its host communities. Following the assessment, gaps in the Sustainable Development Goal 3 (SDG 3) targets were identified and prioritized through community consensus building methods. Anglo American, Right to Care, and the Limpopo Department of Health collaboratively developed a community-health and wellbeing program (CHWP) tailored to the unique challenges, leveraging shared resources and expertise, which align with Anglo American's commitment to contribute to the achievement of SDG 3 by host countries.

Results

The phased CHWP was developed in 2022, and implementation commenced in twelve facilities adjacent to Anglo American's commercial footprint across six sub-districts in Limpopo in June 2023. The program aims to close gaps in primary healthcare through quality improvement interventions, technical assistance, and improved access to decentralized services.

The program further seeks to improve outcomes of key populations, including people living with HIV, men, children, adolescents, and young people, through peer-navigated treatment and adherence support aimed at improving diagnosis, initiation, retention in care, and viral load suppression. To date, 37 peer mentors have been trained, while 296 PLHIV have been reached by the intervention.

Conclusions

This work guides regions and industries seeking impactful PPPs to enhance community health. The partnership components, management structures, interventions, and initial outcomes underscore strategies for strengthening healthcare and bridging access gaps, enriching the discourse on innovative approaches to financing and implementing public health interventions in Africa.

2600

Policy and regulatory barriers to private sector entry and growth in the Zambian healthcare market: A stakeholders' perspective

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Keywords

Zambia, private, Healthcare, Market, regulatory, barriers

Introduction

While Zambia's private sector is growing, its contribution to the total health market remains marginal. Studies conducted in similar settings have cited unfavorable policies and regulations as barriers to private sector participation in the healthcare market. There is limited evidence in Zambia on barriers to entry and growth of the private sector in the health market. We explored stakeholders' perceptions on barriers to private sector entry and growth in the Zambian healthcare market, using the health policy triangle framework.

Methods

This was a qualitative study conducted in September 2022 in four provinces (Central, Copperbelt, Lusaka and Southern) that host over 80% of private health facilities in Zambia. Conducted structured interviews with 46 purposively selected key informants from public sector (n=14), private sector (n=31), and cooperating partners (n=1). Private sector participants included representatives of pharmaceutical businesses, private sector associations, private practitioners, training institutions, and insurance companies. Recordings of interviews were transcribed and analyzed using a thematic approach.

Results

Respondents identified ministry of health as the most influential policy actor in the healthcare market. Most public sector respondents described the policy and regulatory environment in the Zambian healthcare market as facilitatory to private sector entry and growth. On the other hand, private sector respondents mentioned several barriers, most of which related to regulations: inadequate consultation during policy/regulation formulation; high licensing fees; multiplicity of licenses required to operate a private health facility; lengthy process to register a private health facility; lack of synchronization of processes among regulatory agencies; high cost of capital; and lack of tax incentives for local investors.

Conclusions

There are several barriers to entry and growth of the private sector in the Zambian healthcare market. Most of these barriers relate to regulations. Continuous stakeholder engagement is critical and required to resolve these barriers, and ensure effective private sector participation in healthcare delivery.

2736

Utilization of Local Private Transporters for Improved Lab Sample Transport

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Keywords

private sector, sample transport, specimen referral

Introduction

VillageReach is supporting the Global Polio Eradication Initiative to improve the speed and quality of polio sample transport in 15 African countries at-risk for polio outbreaks. WHO AFRO has set an ambitious target of 72 hours for polio samples to reach the national or international testing laboratory. By March 2022, the challenge intensified as wild poliovirus made a comeback on the continent.

Methods

Following national assessments in 2022, customized implementation plans for improving polio sample transportation were developed with each Ministry of Health, WHO country office and stakeholders. Although each country's interventions are tailored to address their own unique strengths and challenges, one key intervention was the use of commercial transporters in 10 countries.

Results

All country results (original data) will be shared. Illustrative results include:

Guinea - After redesigning the transport system (adding local

private transporters), average sample transport time to the national level decreased from 6.5 to 3.2 days between Jan-Dec 2022 and Jan-May 2023.

DRC - Observed a reduction in sample transport time to the national laboratory in the 7 project provinces with local transporters (from 17.3 to 12.1 days) versus no change in 7 comparison provinces (13.9 days) between Jan-Aug 2022 and Jan-Jun 2023. By June 2023, project provinces improved further to 7.5 days.

Mozambique - Before on-demand transport was introduced, samples averaged 12.1 days between collection and arrival at the national level. Between Nov 2022 and May 2023, sample transport time was reduced by half, reaching 6.4 days for samples transported on-demand.

Conclusions

Initial results from utilization of private transporters for polio lab samples shows promise. We will present outcomes and cost data, and lessons to help governments successfully secure favorable terms with commercial transporters to ensure timely and quality transport, which can help beyond polio as integration efforts across diseases become prioritized.

2754

Advancing Nutrition and Food Security in Ghana: Private Sector Engagement for Sustainable Solutions

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Keywords

Ghana
Nutrition and food security
Public-Private Partnerships
Sustainable development
SUN Business Network
SDG 2

Introduction

Ghana faces persistent food insecurity and malnutrition challenges despite progress, impacting development goals. Over five million Ghanaians lack food security due to various factors. Malnutrition spans childhood stunting to adult diet-related diseases. The National Development Planning Commission (NDPC) prioritizes nutrition through the Scaling Up Nutrition (SUN) initiative, potentially involving the private sector via the SUN Business Network (SBN). We conducted an analysis to assess policies, capabilities, and barriers for private sector engagement in nutrition interventions.

Methods

This study assesses establishing a SUN Business Network (SBN) in Ghana via private-sector engagement. It reviews policies, capabilities, and barriers, involving stakeholders from government, private sector, civil society. Data collected through policy review and consultations identify opportunities, barriers, and inform recommendations for enhancing private sector involvement, policy changes, incentives, and collaboration.

Results

The Ghanaian landscape analysis reveals opportunities for private sector impact on food security and malnutrition, including tech-driven production, public-private partnerships, and livestock investments. Private sector innovation can enhance nutritious food availability and distribution. SBN success in other countries indicates the potential for combating malnutrition in Ghana. Engagement spans MSMEs to multinationals, aiding inclusivity and scalability. Existing policies face challenges: weak regulations, resources, and stakeholder coordination. Barriers include financial access, infrastructure, and gender disparities. Addressing gaps, such as support for nutrition-sensitive practices, health services, and data use, is crucial. Strong regulations and incentives are needed for aligned private sector engagement in long-term nutrition and security goals.

Conclusions

Ghana's malnutrition and food security challenges persist despite progress. Involving the private sector through the SUN Business Network is vital. Address policy and infrastructure gaps; incentivize with tax rebates and smallholder support. Coordinated efforts, best practices, and oversight are crucial for sustainable solutions and improved nutrition outcomes.

2777

"Church Health Systems: Cultivating a Skilled Workforce Beyond the Last Mile for Health Systems Strengthening"

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Keywords

Church health-system
Capacity building

Last-mile healthcare workers
health systems strengthening

Introduction

Remote health facilities are usually characterized by staffing challenges due to high attrition rates due to challenging work environments. With 40% of healthcare in Sub-Saharan Africa run by the church health system especially areas not covered by government resources, The Ecumenical Pharmaceutical Network (EPN) has set up training strategies to capacitate them. The network has implemented a robust approach to online training in 7 countries while offering financial support to access the training and implement action plans in the form establishment and running of the Medication Therapeutic Committee, Infection Prevention Control units, and Antimicrobial stewardship Teams. This is accompanied by mentorship sessions and numerous community sensitization activities aimed at promoting rational drug use leading to improved treatment outcomes.

Methods

EPN conducted a member needs study, analyzing 114 church health facilities (including dispensaries and health centers) using qualitative and quantitative methods. Health facility administrators and pharmacy staff participated, responding to online questionnaires and one-on-one interviews on pharmacy skills, including knowledge, institutional, and infrastructure gaps.

Results

Among facilities assessed, 60% of the facilities didn't have a capacity-building plan/strategy in place, only 21% of the staff were trained, and had very limited opportunities for pre/in-service training were available to them. Through this EPN strategic intervention, there has been a 39% increase in basic pharmaceutical knowledge and a more than 90% success rate in implementing public health interventions in facilities with staff that have an unskilled/semi-skilled workforce.

Conclusions

Considering the positive impact demonstrated by this intervention in church health facilities, it's evident that capacitating these last-mile healthcare workers is an effective approach to improving the overall state of healthcare. There is a need for continued support to formulate long-term policies and structures within these facilities for sustained implementation of the activities resulting in training activities for sustained impact to the community at large.

2789

Community-based Participatory Research in the Women in Sex Work, Stigma and Psychosocial Barriers to Pre-Exposure Prophylaxis (WiSSPr) Study in Lusaka, Zambia

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Keywords

CBPR, Key Populations, Civil Society, HIV

Introduction

Issues: Community-based participatory research (CBPR) is a research paradigm focused on relationships between academic and community partners, with principles of co-learning, mutual benefit, and long-term commitment to improve health and reduce disparities. We describe lessons learned from integrating CBPR in the WiSSPr study focused on key populations (KP) in Zambia.

Methods

Description: The PEPFAR-funded Key Population Investment Fund (KPIF)/Zambia program is a partnership among KP Civil Society Organizations (KP-CSOs), CIDRZ, Zambian Ministry of Health (MoH), and U.S. CDC to improve access to HIV care for KP. A key objective of KPIF is to improve initiation, and persistence to HIV pre-exposure prophylaxis (PrEP) among HIV-negative KP. The WiSSPr study leverages existing KPIF infrastructure to understand the enablers and barriers to initiating and persisting on PrEP among women in sex work (WESW) and is currently recruiting from two Lusaka hubs.

Results

Lessons learned

The study team has been engaging in collaborative decision-making with the KP community through a six-member Community Advisory Board (CAB) prior to study launch and throughout the recruitment period. The CAB co-learned about intersectional stigmas around sex work, mental health, and substance use which led to meaningful dialogue on how to

implement the research, while sustaining community in service delivery. The CAB provided 4 recommendations on how to work with key informants at community outreach settings, minimize participant distress, maximize safety, and appropriate referral to evidence-based mental health therapy. The process is leading to mutual benefit of research to inform the program and policy.

Conclusions

The CAB will review preliminary results and advise how to disseminate findings to the wider KP community. By actively consulting the CAB, we ensure that this work values KP-CSOs as equal contributors to the knowledge production process. The study team is accountable to the CAB and this continues to nurture trust with marginalized KP communities.

2853

Activating Civil Society for Routine Immunization Programs and Strengthening the Health System for the Introduction of the HPV Vaccine

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Keywords

HPV vaccine, Community engagement, Cascade Training, Community sensitization, Information sharing, Cervical cancer,

Introduction

Cervical cancer ranks fourth among women globally and second in Nigerian women. In 2020, there were 604,000 new cases and 342,000 deaths worldwide, with Nigeria recording 12,075 cases and 7,968 deaths. Cervical HPV-16/18 infection contributes significantly to this burden, affecting around 3.5% of Nigerian women at any time, with HPV-16 and HPV-18 causing 66.9% of invasive cervical cancers. Limited access to HPV vaccination, inadequate screening and treatment facilities, low awareness, and rural healthcare challenges complicate the issue. Our study aims to activate Civil Society Organizations (CSOs) to champion HPV vaccine sensitization, demand creation, and uptake in communities.

Methods

WAVA initiated a call for CSO applications for HPV vaccine training. 227 CSO applied, and 32 were chosen based on specific criteria, including Advocacy, Capacity Building, Community Engagement, and Partnerships, along with their involvement in HPV-related areas like Adolescent Health. The CSO's were equipped with a training manual, dialogue guidelines, and an introduction letter, CSO conducted training in 32 communities. This toolkit addresses vaccine hesitancy across national, state, and local levels, collaborating with the community's HPV technical working group to enhance effectiveness.

Results

Prior to training, 41.2% of CSOs lacked awareness of the HPV vaccine's potential. The training empowered CSOs with crucial vaccine knowledge and strategies to address vaccine hesitancy. CSOs conducted sensitization, engaged stakeholders, and increased awareness. Over 903 individuals were reached within a month after we conducted the training. CSOs have been able to address questions and sensitize communities about cervical cancer causes, prevention, early detection, and socioeconomic impact.

Conclusions

Empowering CSOs offers immense potential for HPV vaccine advocacy. This approach fosters demand for HPV vaccine uptake, screening, and prevention. CSOs function as vaccine champions, crafting tailored messages and engaging community influencers. Their participation in the HPV technical working group strengthens knowledge dissemination, enhancing health systems for the September 2023 HPV vaccine introduction.

Track 8: Combating Infectious Diseases, NTDs and Antimicrobial Resistance in Africa

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Quality assessment of artemether-lumefantrine fixed-dose combination tablets and suspensions marketed in Kumasi, Ghana.

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Keywords

Quality assessment, Disintegration time, Friability, Artemether, Lumefantrine, Drug assay, Pharmacopeia

Introduction

Artemether-Lumefantrine is a highly effective and commonly used Artemisinin-based Combination Therapy (ACT) for treating uncomplicated malaria caused by Plasmodium falciparum, including drug-resistant strains. However, the ineffective regulatory systems in resource-limited settings can lead to the infiltration of poor-quality and counterfeit anti-malarial medicines into the pharmaceutical supply chain, causing treatment failures, prolonged illness, and disease progression.

The objective of the study was to assess the quality of selected brands of fixed-dose combination (FDC) artemether-lumefantrine (AL) tablets and suspensions marketed in Kumasi, Ghana.

Methods

A total of fourteen (14) brands of fixed-dose combination artemether-lumefantrine medicines, comprising eight (8) brands of tablets and six (6) brands of suspensions were purchased from various retail pharmacy outlets in Kumasi, Ghana. All samples were subjected to thorough visual inspection as a quick means of checking quality through meticulous observation of the packaging or dosage form. The quality control parameters of the tablets were determined by uniformity of weight, hardness, friability, and disintegration. Suspensions were assessed based on pH and compared with British Pharmacopeia (BP) standards. The samples were then analyzed for drug content (assay) using Reverse-Phase High Performance Liquid Chromatography (RP-HPLC).

Results

All studied AL brands passed visual inspection and were not counterfeited. Tablet samples met BP specifications for weight uniformity, hardness, friability, and disintegration time. The assay showed tablets met BP specifications (90-110%). Of the six suspension brands, 83.3% complied with pH specifications, while 16.7% failed. Drug content analysis revealed 33.3% of suspensions were substandard, with variable artemether and lumefantrine content. Artemether ranged from 81.31% to 116.76%, and lumefantrine ranged from 80.35% to 99.71%.

Conclusions

The study found that while many products met quality standards, the presence of substandard drugs highlights the need for strong pharmacovigilance and surveillance to eliminate counterfeit and substandard medications in Ghana.

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Viral suppression in the era of transition to dolutegravir , children at higher risk of virological failure.

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Keywords

HIV
Viral suppression
ART Duration
Cameroon
Dolutegravir

Introduction

Transition to Dolutegravir (DTG)-based antiretroviral therapy (ART) may improve virological response (VR) in sub-Saharan Africa. Because VR may vary by age, understanding ART response across age-range may inform interventions on ART program. Our objective was to compare VR between children, adolescents and adults in the Cameroonian context.

Methods

A comparative study was conducted from January 2021 to May 2022 amongst ART-experienced patients received at the Chantal BIYA International Reference Centre for HIV/AIDS prevention and management in Yaounde -Cameroon for plasma viral load (PVL) monitoring. PVL was measured on Abbott m2000RT-PCR . VR was defined as viral suppression (VL< 1000 copies/mL) and viral undetectability (VL< 50 copies/mL). Data were analyzed by SPSS v.20.0, with p< 0.05 considered as significant.

Results

A total of 9034 patients, 72.8% female, were enrolled (8565 adults, 227 adolescents, 222 children); 1618 were on NNRTI-based, 299 on PI-based and 7118 on DTG based ART (82 children, 198 adolescents, 6824 adults). Median (IQR) duration on ART was 36 (27-39) months. Overall, VS was 89.9% (95% CI: 89.2-90.5) and 75.8% (95% CI 74.8-76.7) had achieved viral undetectability. By ART-regimen, VS on NNRTI-based, PI/r-based, and DTG-based therapy was respectively 86.5%, 60.2% and 91.8%, p< 0.0001. By ART duration, VS was respectively 90.4% (M12), 87.8% (M24), 89.1% (M36) and 90.0% (≥ M48), p< 0.0001. By sex, VS was 91.0% for female and 87.1% for male, p< 0.0001. VS by age was significantly different, ranging from 65.2% in children, 74.4% in adolescents and 90.9% on adults, p< 0.0001.

Conclusions

In the current ART program, 9/10 Cameroonian patients achieve VS, with a superior efficacy of DTG-based ART (mainly adults). Nonetheless, male and pediatric populations have poorer rates of VS, especially for children below 10 years. Thus, scaling-up pediatric DTG-based ART, especially in children, would improve ART performance in similar African settings.

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Prevalence and Characterization of ESBL-Producing Escherichia coli in Healthy Pregnant Women and Hospital Environments in Benin: an approach based on Tricycle

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Keywords

ESBL-producing Escherichia coli, Hospital Settings, Tricycle protocol, Benin 2 ESBL-producing Escherichia coli, Benin

Introduction

Extended-spectrum –lactamase (ESBL)-producing Enterobacterales are recognized as significant pathogens due to their resistance to multiple antibiotics. This study aimed to determine the prevalence of ESBL-producing Escherichia coli (E. coli) in healthy pregnant women, the food chain, and the environment of various tertiary hospitals in Benin.

Methods

Samples were collected from healthy pregnant women (feces), foods sold in hospital canteens, and hospital effluents across four hospitals in southern Benin. Fecal samples were plated on MacConkey agar supplemented with cefotaxime (4µg/ml), while food and water samples were plated on Tryptone Bile X agar and Tryptone Bile X agar supplemented with cefotaxime (4µg/ml). Representative E. coli colonies were purified and identified using urea indole tests, followed by confirmation of ESBL production using the double disk synergy technique. The antibiotic susceptibility of ESBL-producing E. coli strains was determined using the disk diffusion method on MH agar. PCR was employed to investigate the presence of ESBL encoding genes.

Results

Among the 296 fecal samples collected from four tertiary hospitals, ESBL-producing E. coli was isolated from 22.30% (66) of the samples. All E. coli isolates from hospital effluents exhibited ESBL production, while ESBL-producing E. coli was not detected in food and drinking water samples. The analysis of variable associations showed no significant associations (p>0.05) for the studied factors. Antibiotic susceptibility testing revealed high resistance rates among ESBL-EC isolates against several tested antibiotics. However, most isolates remained susceptible to ertapenem, amoxicillin-clavulanate, and imipenem. The most prevalent ESBL encoding genes were blaTEM (37.5%), blaOXA-1 (19.44%), and blaSHV (11.11%), while a smaller proportion of isolates carried blaCTXM-1/blaCTXM-15 (5.55%) and blaCTXM-9.

Conclusions

This study provides insights into the prevalence of ESBL-producing E. coli carriage in the feces of healthy pregnant wom-

en in southern Benin and highlights hospital wastewater as a potential reservoir of ESBL-producing bacteria in the environment.

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Determinants of consistent use of Long Lasting insecticidal treated mosquito bednets in Karongi District 2022.

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Keywords

Consistency, LLINs, Determinant, Karongi

Introduction

Introduction: Malaria is a significant global concern, and use of Long Lasting Insecticides Nets(LLINs) is an essential intervention for reducing the burden of this disease. However, a study in 2020 conducted by Habimana et al. has shown a discrepancy between LLINs ownership and actual use. The study aimed to identify the factors associated with the usage of long-lasting insecticidal nets for making malaria prevention more effective in Karongi District.

Methods

Methodology:A cross-sectional methodology was used. A multistage sampling technique was used and participants were selected randomly from their villages. The study included head of household, living in Karongi District and aged 18 years and above. Descriptive statistic and logistic regression models were used in analysis, odd ratio with their corresponding 95% CI and P-values were used in results presentation. Data were analyzed using STATA software.

Results

Results: Of 806 participants recruited,605(75%) had LLINs and participated in the study. The proportion of individuals who use LLINs consistently was 53%. Being females (AOR =6.1,95% CI:3.85-9.67), being married (AOR =4.03,95% CI: 1.75 – 9.31) or widow (AOR=4.19,95%CI:1.34 – 13.13), Living in urban areas (AOR = 2.22,95%CI:1.37 – 3.6), having under 5 years child (AOR=2.92,95%CI:1.66 – 5.13), sleeping on a bed (AOR = 4.99,95%CI:2.95 – 8.45), and having a conical-shaped nets (AOR =3.51, 95%CI :1.6 – 7.69) were statistical significantly associated with consistency use of mosquito nets.

Conclusions

Conclusion: The finding provide valuable insights for designing targeted interventions to improve LLINs utilization .The consistency use of LLINs was 53% among Karongi residents. Strategies should focus on promoting LLINs usage among males, single and divorced individuals, those living in rural areas as well as, families without under 5 years children.

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Hospital and household-based support factors associated with Antiretroviral therapy adherence among Adolescents living with HIV in Western Kenya, April 2023

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Keywords

Adolescents HIV
ART adherence
Hospital support
family support

Introduction

Consistent life-long adherence to antiretroviral therapy (ART) is critical for viral load suppression and reducing the risk of opportunistic infections. However, ART adherence among adolescents living with HIV (ALHIV) remains suboptimal despite the available support systems, posing a challenge towards the achievement of UNAIDS 95-95-95 goal. Understanding the hospital and household-based support factors associated with ART adherence informs the improvement of appropriate programmatic interventions.

Methods

This was a quantitative cross-sectional study that recruited 263 (10-19 years) ALHIV who had been on ART for at least 6 months at an AMPATH based clinic in Western, Kenya. Participants were selected using systematic random sampling. Morisky Medication Adherence tool (MMAS-8) was used to assess ART adherence. A total score of 6 or more was classified as adherent while less than 6 as non-adherent. Data on support factors was collected using a structured questionnaire and analyzed descriptively. Independent predictors were determined through bivariate and robust multivariate logistic regression.

Results

Of the 263 adolescents, 76.4% (n= 201) adhered to ART. For hospital support, participants who were individually counselled (OR=2.93, 95%CI=1.15-7.46, p= 0.024) and those getting reminder messages/call (OR=2.72, 95%CI=1.21-6.09, p= 0.015) were more likely to adhere to ART. For the household-based support, participants who talked freely with caregiver/parents about HIV status (OR=3.13, 95%CI=1.56-6.29, p= 0.001); were getting reminders from their caregivers to take ART (OR=1.99, 95%CI=1.03-3.83, p= 0.039); whose family members were aware of their HIV status (OR=2.51, 95%CI=1.27-4.96, p= 0.008); and who received financial support to facilitate travel to the facility (OR= 2.37, 95%CI=1.19-4.71, p= 0.014) were more likely to adhere to ART.

Conclusions

The ART adherence was relatively high regardless of the available support intervention. Further studies should focus on validating the observed associations and integrating into support systems to improve ART adherence.

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Characterization of HIV-1 reservoirs in children and adolescents:A systematic review and meta-analysis toward paediatric HIV cure

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Keywords

HIV-1 DNA, viral reservoirs, archived drug resistance mutations, paediatrics, antiretroviral therapies, immune-virological response.

Introduction

The virostatic effect of antiretroviral therapies (ART) infers HIV persistence in sanctuaries, with a high likelihood of viral reactivation off-treatment. This systematic review and meta-analysis aimed at estimating the global burden of archived drug resistance mutations (ADRMs), the size of proviral reservoirs, and their determinants in infants, children and adolescents living with HIV.

Methods

Were included, randomized and non-randomized trials, cohorts, and cross-sectional studies of HIV reservoirs in perinatally infected participants, published in English/French between 2002-2022. As primary outcomes, we evaluated the prevalence of ADRMs and estimated the size of reservoirs (HIV-1 DNA copies/106 cells) in paediatrics. Subgroup analyses were performed to further characterize the data, and the meta-analysis was done through random effect models.

Results

Overall, 49 studies from 17 countries worldwide were included encompassing 2356 perinatally infected participants (aged 2-days to 19-years; 48.83% females). There are limited data on the quantitative characterization of viral reservoirs in sub-Saharan Africa (SSA), with sensitive methodologies such as ddPCR rarely employed. The overall prevalence of ADRMs was 37.80% [95%CI: 13.89–65.17], with 48.79% [95%CI: 0–100] in Africa, 42.08% [6.68-82.71] in America, 23.88% [95%CI: 14.34–34.90] in Asia, and 20.00% [95%CI: 10.72–31.17] in Europe, without any difference between infants and adolescents (p=0.656). Starting ART before 2 months of age limited the levels of HIV-1 DNA (p=0.054). Participants with long suppressed viraemia (>5 years) had lower levels of HIV-1 DNA (p=0.027) whereas pre-/post-ART CD4 ≤29% and pre-ART viremia ≥5Log were all found associated with higher levels of HIV-1 DNA (p=0.038, p=0.047 and p=0.041, respectively).

Conclusions

Our findings underscore high prevalence of ADRMs in paediatric worldwide and specifically in SSA, with larger proviral reservoir size driven by delayed ART initiation and immuno-virological failures. Thus, strategies for paediatric HIV functional cure should target children/adolescents with very early ART initiation, immunocompetence, and long-term viral suppression.

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Findings and Lessons Learnt from Piloting a Hub and Spoke Model to Enhance Antimicrobial Stewardship Knowledge and Practice among Healthcare Professionals at Two Tertiary Hospitals in Zambia from February to October 2022

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Keywords

Antibiotic Use, Antimicrobial Stewardship, Healthcare Professionals, Hub & Spoke Model, Knowledge, Pilot, Practice, Zambia

Introduction

To mitigate Antimicrobial Resistance (AMR), Antimicrobial Stewardship (AMS) is key. We evaluated the feasibility of using a Hub and Spoke Model (HSM) to enhance AMS knowledge and practice among healthcare professionals (HCP) at two public tertiary hospitals in Zambia.

Methods

A prospective, phased multi-method project adopting implementation science framework was conducted. Involved were multidisciplinary HCPs at two pilot sites ('Spokes'); Kitwe Central Teaching Hospital (KCTH) on the Copperbelt Province and Kabwe Central Hospital (KCH) in Central Province, respectively. The 'Hub' hospital was the University Teaching Hospitals (UTH) – Adult Hospital with established AMS capacity. Field work was conducted from February to October 2022. Metrics included in-patient Antibiotic Use Prevalence (AUP) at baseline and midline, and HCP knowledge of AMS principles before and after a 5-day educational intervention and mentorship delivered onsite by UTH staff using local modules.

Results

A total of 27 multidisciplinary HCP (15 males and 12 females) with 12 from KCTH and 15 from KCH were oriented to AMS principles and mentored to establish their hospital AMS teams. AMS knowledge scores increased from 73.0% (pre-test) to 84.5% (post-test) after a 5-day AMS module iteration. At month 1 (baseline), overall AUP in the adult wards was 41.1% at KCTH (N=158) and 43.7% at KCH (N=87). At month 5, AUP was 49.4% at KCTH (N=214) and 60.4% at KCH (N = 111). Third-generation cephalosporins were the most prescribed, with KCTH recording 61.4% at baseline and 46.9% at month 5, whereas KCH recorded 52.5% at baseline and 47.7% at month 5.

Conclusions

This pilot demonstrated proof of concept that HSM can catalyze a local, self-sustaining approach to enhancing AMS knowledge and practice in Zambian hospitals using local resources. Optimizing antibiotic use requires addressing multiple factors at the macro- (health system policy), meso- (institutional) and micro- (professional culture) levels in a coordinated manner.

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Performance of SD Bioline Malaria Ag P.f/Pan rapid diagnostic test and Plasmodium falciparum histidine-rich protein 2 gene (pfhrp2) deletion in Emana-Benyada, March 2022.

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Keywords

Malaria, RDTs, Plasmodium falciparum, pfhrp2, deletion, Emana-Benyada,

Introduction

The spread of Plasmodium falciparum parasites with the deletion of pfhp2 gene encoding the PfHRP2 protein targeted by malaria rapid diagnostic tests (RDTs) is threatening the performance of this diagnostic method. The aim of the present study was to investigate the deletion of the pfhrp2 gene in P. falciparum strains circulating in a village located in the Centre region of Cameroon, and its contribution to the occurrence of false-negative RDTs results.

Methods

A cross-sectional survey was conducted in Emana-Benyada village. Blood samples were collected for malaria detection using SD Bioline PfHRP2/ PanLDH RDT, traditional microscopy

and DBS collection. Nested PCR were performed to amplify P. falciparum pfmsp1 and pfmsp2 genes to investigate the multiplicity of infection (MOI) of the parasite, and to amplify the exon1-2 of the pfhrp2 gene to investigate deletion. Raw data were analysed with SPSS 23 and the level of signification was set at $p < 0.05$.

Results

As preliminary results, a total of 89 individuals were included in the study. The prevalence of malaria was 58.43 % (52/89), P. falciparum being the most represented specie (51/52). Sensitivity and specificity of SD Bioline PfHRP2/PanLDH RDT were 88.23% and 67.56%, respectively. This test failed to detect P. falciparum infection in 06 microscopy positive samples. No significant difference was observed between the variation in parasite density and the sensitivity of the test (X2= 9.084; p= 0.106). Of the 24 samples used to investigate the MOI, 19 (79%) of them (including five of the six false-negative samples) contained mixed infections of P. falciparum, with a mean MOI of 1.79. No case of deletion of the pfhrp2 gene was observed among false-negative RDTs samples.

Conclusions

Although the observed absence of pfhrp2 deletion in the samples screened here is encouraging, continued monitoring of the performance of RDTs for malaria detection in Cameroon is warranted.

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"They give a chance to young people": a grounded theory study of enablers and barriers to HIV and AIDS access to information-seeking and health services among the youth in N'Djamena, Chad

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Keywords

grounded theory, pediatric HIV, adolescents, mechanisms of access

Introduction

Providing school-based HIV education can improve knowledge and decision-making processes about sexual behaviors among young people (aged 15-24). Despite the increasing rate of HIV infections about the youth, pediatric HIV has become a silent epidemic in Chad. This is further exarcebated by the fact that discussing the topic of sexuality is taboo due to the country's sociocultural structure. Therefore, little is knwon about the pathway of HIV and AIDS acess to health services among the youth in Chad.

Methods

A grounded theory was used to understand the contextual factors and mechanisms that influence access to information and health services among the youth. Four focus group discussions (FGDs) were conducted with 48 participants resulting in theoretical saturation. All FGDs were transcribed and analyzed concurrently with data collection using inductive thematic content analysis and constant comparative method, which involved open, axial, and selective coding. Data were analyzed using the qualitative software ATLAS.ti version 22.

Results

The core category "mechanisms of access" emerged through the interaction of five categories, including (1) societal expectations; (2) power dynamics; (3) social networks; (4) peer-education programmes; and (5) bypassing the system. Barriers and enablers to information-seeking and access to health services were observed at individual, community and system levels. Societal expectations and power dynamics were identified as key barriers, while trust through social networks and peer-education programmes were key enablers to information and health services.

Conclusions

This study allowed for the identification of roadblocks, which call for a systemic and multisectoral intervention to allow the youth to have access to health services when needed. Our findings highlight the importance of embracing comprehensive community-led approaches that are youth-friendly and -centric to end the epidemic. Future research should assess the specific needs of vulnerable populations among young people.

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Uptake of Malaria vaccine and risk of infection among under-5 children in Western Kenya, February 2023.

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Keywords

RTS, S Malaria vaccine, malaria infection, poor uptake, association, risk factor.

Introduction

Globally, malaria is the leading cause of mortality and morbidity of under-5 children. While malaria vaccine offers a promising intervention, there's still limited data on its uptake. To provide valuable insights on effectiveness of the vaccine, this study objective was: To assess the uptake of malaria vaccine, its association with malaria infection and further assess the risk of malaria among children aged 6-36 months in Muhoroni. The research questions were: What is the uptake of malaria vaccine, what is the association of malaria vaccine uptake and malaria occurrence among children 6-36 months in Muhoroni?

Methodology

A cross-sectional study design was employed among caretakers of 319 children aged 6-36 months in Muhoroni. Stratified random sampling was used and sdata was collected using ODK collect. Data were analyzed using Chi Square test and logistic regression with STATA version 16.

Results

There's low and declining trend in the uptake of malaria vaccine doses as follows, 1st dose (72.1 %), 2nd (66.9%), 3rd dose (59.4 %), and 4th dose (31.4%). 67.6% of the children tested positive for malaria, vaccine non-compliant children were more likely to get infected with malaria compared to compliant children (Crude odds ratio, COR = 5.87; 95% Confidence interval, CI: 2.25-15.31; $p \leq 0.001$). Children who didn't receive any dose of malaria vaccine were more likely to get infected (COR = 2.72; 95% CI: 1.26-5.88; p = 0.011). Children aged 24-36 months were more likely to get infected compared to children aged 0-6 months (COR = 7.00; 95% CI: 0.09-2.73, p = 0.03).

Conclusions

Conclusion- There's a low uptake of malaria vaccine hence an increase in the risk of infection. Age was a risk factor for malaria infection. There's need for health education initiatives to promote vaccine awareness and targeted interventions to boost malaria vaccine coverage in the region.

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Improving TB Diagnostic Services Access Through Establishment of Sample Referral Networks Among Private Health Providers in Kenya

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Keywords

Tuberculosis, Diagnosis, Access, Networking

Introduction

Kenya has a high burden of TB and drug-resistant TB (ranked among 30 high burdened countries by WHO). Despite TB diagnosis test being free in Kenya accessibility still remains a challenge and this has contributed to leakage in the care cascade where about 60% of the presumptive TB cases are undergoing investigation for TB; thus, a lot still needs to be done to ensure that all presumptive cases are linked to diagnosis. By 2020, there were 2,573 AFB microscopy centres and 193 Gene expert machines distributed throughout the country majority being in public health facilities. The aim of the intervention was to Improve access to TB diagnostic services which remains an integral component of national TB strategies, to ensure that everyone with TB is detected and put on treatment early.

Methods

In response to the existing gap Population Services Kenya through the support of Global Fund, Stop TB Partnership and National TB Program supported establishment of a robust sputum sample networking using motor riders to link private health providers to TB diagnostic centre (Gene expert site). During the implementation 600 private health providers (health facilities, chemists and standalone laboratories) with limited TB diagnostic capacity were engaged and linked to 16 Gene expert centres using 15 motor riders. The implementation was between June 2019 to March 2022.

Results

Trough the initiative a of a total of 709,777 people were screened for TB by the engaged providers, and networked 19,874 for TB test using Gene expert leading to the identification of 2,019 TB cases whom 19,71 (98%) were linked and initiated on TB treatment.

Conclusions

Optimization of opportunities for early TB case detection can done through sample networking to improve access to TB diagnostic services especially for patients attending the private health facilities with limited capacity for TB diagnosis.

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EFFECTS OF ANGIOTENSIN RECEPTOR BLOCKERS (ARBs) AND ANGIOTENSIN CONVERTING ENZYME INHIBITORS (ACEIs) ON THE FUNCTIONAL ANATOMY OF THE HAMSTER TRACHEAL MUCOSA

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Keywords

MUC5AC, MUC5B, FOXA2, ARB, ACE inhibitor, Losartan, and Enalapril

Introduction

The severe cases of COVID-19 observed in patients with hypertension and diabetes have created controversy as to why this was the case and the role of ARBs, and ACE inhibitors was not ruled out as a contributing factor. This study aimed to investigate the effects of ACE inhibitors and ARBs on inflammatory mediators and how the inflammatory mediators affect the functional anatomy of the hamster tracheal mucosa

Methods

This was a posttest-only experimental study design. The study used a Syrian hamster (Mesocricetus auratus) as experimental animal model and ELISA techniques to assess the increase or decrease in Bradykinin, MUC5AC, MUC5B, and FOXA2; additionally histological techniques were used to assess goblet cell hyperplasia and inflammation of the tracheal mucosa. Further, the study challenged hamsters treated with enalapril or losartan with 0.2 ml PBS pH 7.0 containing 1.5 x 108 cfu / ml of Pseudomonas aeruginosa to assess the effects of ARBs and ACE inhibitors on the immune system. Dunnett's t-test was used to analyze the results and a p-value less than 0.05 was considered significant.

Results

Hamsters treated with enalapril, or losartan had increased bradykinin, MUC5AC, and MUC5B concentration compared to the control; however, the increase was not significant ($p > 0.05$). On the contrary, hamsters treated with enalapril, or Losartan had a decrease in FOXA2 concentration; however, the decrease was also not significant ($p > 0.05$). Two out of a total of six hamsters that were treated with enalapril had a mild inflammatory reaction and hyperplasia of goblet cells was not observed. For Pseudomonas aeruginosa challenge, no hamster developed fever after 72 hours and there was no mortality at the end of 14 days

Conclusions

Overall, the results of this study show that the administration of enalapril or losartan did not have a significant effect on the functional anatomy of the hamster tracheal mucosa.

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Burden of Respiratory syncytial virus diseases among under 5 children in Sub-Saharan Africa: A systematic review and meta-analysis

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Keywords

Respiratory syncytial virus, ALRIs, children, Naso/Oropharyngeal, sub-Saharan Africa

Introduction

Respiratory syncytial virus (RSV) is the most common cause of acute lower respiratory infections (ALRIs) in young children. To design preventive efforts in sub-Saharan Africa, a better knowledge of the true role of RSV in pediatric ALRIs is required. Therefore we conducted a systematic review and meta-analysis of case–control studies to estimate the etiological role of RSV to ALRIs in under 5 years children in sub-Saharan Africa.

Methods

This study was done according to PRISMA guidelines. PubMed, EMBASE, SCOPUS, Web of Sciences databases, and Google Scholar were used to retrieve articles. STATA software version 17 was used for data analysis. The results of all the included studies were standardized to odds ratios (ORs) with accompanying 95% confidence intervals (95% CIs) and the pooled estimates of ORs, attributable fraction among the exposed (AFE), and population attributable fraction (PAF) were reported. The heterogeneity was assessed using Cochrane chi-square (I 2) statistics.

Results

A total of 6,200 cases and 4,986 controls from 14 articles that fulfilled the inclusion criteria were included. The pooled prevalence of RSV among cases and controls was 23.52% [95% CI (20.68-26.47)] and 4.33% [95% CI (3.11-5.73)], respectively. The pooled OR is 7.04 [95% CI (4.41-11.24)], which indicated a significant association between RSV and ALRI. Among ALRIs cases positive for RSV, the proportion of disease that was not attributable to the background rate (AFE) was 85.8% [95%

CI (77.3-91.1)]. The fraction of ALRIs children that can be attributed to RSV (PAF) was 20.2% [95% CI (16-24.1)].

Conclusions

This study showed clear associations between RSV and ALRI hospitalization in young children in sub-Saharan Africa indicating the need for prophylactic measures against RSV in this age group.

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Molecular surveillance for polymorphisms associated with artemisinin-based combination therapy resistance in Plasmodium falciparum isolates collected in 2021, Republic of Congo.

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Keywords

Polymrophism ; Resistance; Plasmodium falciparum ; Republic of Congo

Introduction

Emergence and spread of P. falciparum strains resistant to artemisinin-based combination therapies (ACTs), poses a significant threat to global malaria control efforts. Therefore, the close monitoring of molecular markers is essential as an early warning system to detect the emergence and spread of resistance. This study aims to assess the prevalence of haplotypes of the Pfcrt, Pfmdr1 and PfK13 resistance markers in isolates from the Republic of Congo.

Methods

Between March and October 2021, a cross-sectional study was conducted in rural and urban areas of the south of Brazzaville and beyond in individuals aged 1-83 years with microscopic P. falciparum infection. Parasite DNA was extracted using Qiagen kit and all samples were screened to confirm P. falciparum infection by nested PCR. Restriction Fragment Length Polymorphism was used for the detection of single nucleotide mutation within the Pfcrt(76T), Pfmdr1(86-184) genes of the parasite, and detected mutations were further confirmed using Oxford nanopore sequencing platform, while PfK13 and Pfmdr1(1034-1246) genes mutations were investigated by sequencing.

Results

364 samples confirmed by nested PCR to P. falciparum were successfully analyzed for the Pfcrt(76T) and Pfmdr1(86-184 and 1034-1246) genes polymorphisms. The prevalence of the 76T, 86Y and 184F mutations were 25.5%, 6.8% and 25.5% respectively. No mutations in codons 1034C, 1042D and 1246Y detected. 331 isolates were successfully sequenced and analyzed for Pfk13, 83(25.1%) isolates had a non-synonymous mutation in the Pfk13 propeller domain of which 82(24.7%) had deletion K479 and 01(0.3%) isolate had A578S mutation.

Conclusions

The data from this study demonstrate that ACTs remain effective in the treatment of uncomplicated P. falciparum malaria in the Republic of Congo. Although a low frequency of mutations was detected in the PfK13 propeller domain, this is a further cause for concern and molecular monitoring should continue.

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The effects of selected neglected tropical diseases on economic performance at the macrolevel in 24 to 45 African countries from 2002 to 2019

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Keywords

Neglected Tropical Diseases, Economic Performance, Macrolevel, Africa

Introduction

Neglected tropical diseases (NTDs) such as leprosy, lymphatic filariasis (LF), schistosomiasis and onchocerciasis are endemic in several African countries. These diseases can lead to se-

vere pain and permanent disability, which can negatively affect the economic productivity of the affected person(s), and hence leading to low economic performance at the macrolevel. Nonetheless, empirical evidence of the effects of these NTDs on economic performance at the macrolevel is sparse. This study therefore aims to investigate the effects of the above-mentioned NTDs (i.e. their prevalence) on economic performance at the macrolevel in selected African countries.

Methods

The study employs a panel design with data (from secondary sources) comprising 24 to 45 African countries, over the period, 2002 to 2019. The countries and study period are largely dictated by data availability. Gross domestic product (GDP) is used as a proxy for economic performance. The random effects (RE), fixed effects (FE) and the instrumental variable fixed effects (IVFE) panel data regressions are used as estimation techniques.

Results

From the IVFE estimates, we find that a percentage increase in the prevalence of leprosy, LF, schistosomiasis and onchocerciasis is associated with a reduction in economic performance by 0.43%, 0.24%, 0.28% and 0.36% respectively. Employing the average economic performance figures for the sampled countries used for each NTD over the study period, these percentages translate into respective economic losses of $180 million, $98.4 million, $132 million and $132 million per a percentage increase in the prevalence of these diseases. The findings are not qualitatively different using the RE and FE regressions.

Conclusions

The findings highlight the need to increase attention and bolster integrated efforts towards tackling these diseases in order to curb their deleterious effects on economic performance. Such measures can include effective mass drug administration (MDA), enhancing access to basic drinking water and sanitation among others.

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PHENOTYPIC CHARACTERIZATION AND EPIDEMIOLOGY OF EXTENDED-SPECTRUM –LACTAMASE-PRODUCING ENTEROBACTERIACEAE STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN GAROUA, CAMEROON

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Keywords

Urinary tract infections; Extended-spectrum beta-lactam, Antibiotics; Double synergy test; Drug resistance; ESBL;

Introduction

The emergence of extended-spectrum beta-lactamase-producing Enterobacteriaceae (ESBL-E) is causing increased morbidity and mortality around the world as a result of therapeutic failures. ESBL-E are priority pathogens due to their multidrug resistance (MDR). In Northern Cameroon, ESBL-producing bacteria, particularly in urinary tract infections (UTIs), are being increasingly isolated. This study aimed to retrospectively determine the prevalence of multi-drug resistant ESBL strains isolated from UTIs in Northern Cameroon and to evaluate the effectiveness of the ATB UR Gallery of BioMérieux in diagnosing ESBL-E in clinical settings.

Methods

Standard microbiology protocols and statistical tools were utilized to identify ESBL-producing bacteria and characterize their phenotypic susceptibility and resistance profiles in the study population.

Results

These insights emphasizes the importance of implementing appropriate treatment guidelines and antimicrobial stewardship measures to mitigate the spread and impact of MDR ESBL-producing strains on public health.Out of the 144 enterobacteria isolates successfully cultured, 59 (41%) were identified as MDR strains. The ATB UR EU gallery identified 33 (23%) multi-drug resistant ESBL-producing strains, while the double synergy test identified 35 strains without disc reconciliation and 38 strains after reconciliation. The most prevalent ESBL-E isolate was Escherichia coli, accounting for 77.1% of the isolates, followed by Klebsiella pneumoniae (20%) and Enterobacter aerogenes (2.9%). Additionally, the study revealed the emergence of Imipenem resistance (5.7%), a critical last-resort antibiotic. However, all ESBL strains were sensitive to Fosfomycin (FSF/FOS), demonstrating its potential as an effective therapeutic option. Moreover, 37% of the ESBL producers exhibited co-resistance to over 20 different antibiotics.

Conclusions

This study provides valuable insights into the prevalence and susceptibility patterns of ESBL-E associated with UTIs in Northern Cameroon. These insights emphasizes the impor-

tance of implementing appropriate treatment guidelines and antimicrobial stewardship measures to mitigate the spread and impact of MDR ESBL-producing strains on public health.

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Genomic surveillance of SARS-COV-2 and other pathogens in the Republic of Congo

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Keywords

SARS-COV-2, Republic of the Congo, Genomic

Introduction

Deadly emerging infectious pathogens pose an unprecedented challenge to health systems worldwide, especially in the Republic of Congo, where health care infrastructure is limited. Until 2020 in the country, among molecular biology techniques, PCR based tools were the most used. Thus the COVID-19 pandemic has been an opportunity to improve the national genomic platform that could be expanded to all circulating pathogens serving surveillance, prevention and response actions. This work aimed to establish the genomic platform for the effective control of infectious pathogens in the Republic of Congo.

Methods

By 2021, we established the Oxford Nanopore Technology platform for the first time in the Republic of Congo to respond firstly to the COVID-19 pandemic and secondly to other pathogens like Plasmodium falciparum, Mycobacterium tuberculosis, HIV and others. Between April 2020 and August 2022, 1200 oropharyngeal samples tested positive for SARS-CoV-2 by RT-PCR. Of these samples, 589 with Ct- 28 were selected for sequencing by ONT next generation sequencing (NGS). All the complete sequenced genomes were submitted on GISAID for publication, and different viral variants were identified using Pangolin and Nextclade nomenclature.

Results

From 589 oropharyngeal samples selected for sequencing, 381 SARS-CoV-2 whole genomes were successfully sequenced and submitted on GISAID. Our results revealed that a total of 21 SARS-CoV-2 variants circulated in the Republic of Congo during the study period, with the presence of variants of concern such as alpha (B.1.1.7), delta (B.1.617.2) and Omicron (B.1.1.519). Four waves of the virus epidemics were observed during this study period. The B.1.640.1 variant was reported for the first time in the Republic of Congo through this study, and was observed to be spreading locally and regionally

Conclusions

This work contributed to monitor in a daily basis the spread of SARS-CoV-2 in the country to support the national containment strategies of the pandemic.

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Descriptive epidemiology and response to diphtheria re-emergence in Nigeria, 2022 – 2023

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Keywords

Diphtheria, Outbreak, Re-emergence, Surveillance, Laboratory, Response

Introduction

Diphtheria is an acute highly contagious life-threatening vaccine preventable disease caused by the toxigenic Corynebacterium species. On 1st December 2022, the Nigeria Centre for Disease Control and Prevention was notified of suspected diphtheria outbreaks in the country. We investigated to confirm the outbreaks, describe the epidemiology, and institute control measures.

Methods

Using the WHO case definition for diphtheria, we reviewed surveillance data and conducted active case search in health facilities and communities across affected states. Nasopharyngeal and oropharyngeal swabs were collected from suspected cases for laboratory confirmation using culture, Elek test and PCR. Antimicrobial sensitivity test was conducted on culture isolates. Descriptive analysis was done to describe the outbreak in terms of person, place, and time.

Results

Toxigenic Corynebacterium diphtheriae were isolated from samples tested. From epi-week 19 2022 to epi-week 34 2023, a total of 7,231 suspected cases were reported across 27 states out of which 3,846 (53.2%) were confirmed cases. Kano (3,217), Yobe (402), Katsina (88) and Borno (86) States accounted for 98.6% of all confirmed cases. Of the confirmed cases reported, 2,740 (71.2%) were aged 1-14 years, 2,984 (77.6%) were not fully vaccinated against diphtheria and 2,140 (55.6%) were female. The case fatality rate among confirmed cases was 6.9%. Of the 162 Toxigenic Corynebacterium diphtheriae isolated, 95.2% were susceptible to Erythromycin while none was susceptible to Benzylpenicillin.

Conclusions

For the first time in over two decades, diphtheria outbreak was confirmed and responded to in Nigeria. The main driver of the outbreak was sub-optimal vaccination coverage. In response to the outbreak, the country activated the National Diphtheria Emergency Operation Centre to coordinate response activities across the country, strengthened laboratory capacity for confirmation, improved access to diphtheria anti-toxin, conducted reactive vaccination and sensitized clinicians and community members. We recommend strengthening routine immunization, and implementation of diphtheria booster dose policies in Nigeria.

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Entomological longitudinal surveys in two contrasted eco-climatic settings in Cameroon reveal a high malaria transmission from Anopheles funestus associated with GSTe2 metabolic resistance

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Keywords

An. funestus, sporozoite infection, malaria transmission, Entomological Inoculation Rate, L119F-GSTe2, Cameroon

Introduction

The impact of metabolic resistance to insecticides on malaria transmission remains poorly characterised notably through application of entomological parameters. The lack of resistance markers has been one of the limiting factors preventing a robust assessment of such impact. To this end, the present study sought to investigate how the L119F-Gste2 metabolic gene influences entomological parameters underpinning mosquitos' propensity to transmit Plasmodium spp.

Methods

Longitudinal studies were carried out in Mibellon and Elende, two different eco-climatic settings in Cameroon and mosquitoes were collected using Human Landing Catch (HLC), Centre for Disease Control Light Trap (CDC-LT) and Pyrethrum Spray Catch (PSC) technics. Plasmodium sporozoite parasites were detected by TaqMan and Nested PCR, and blood meal origin by ELISA. The allele-specific PCR (AS-PCR) method was used to genotype the L119F-GSTe2 marker and association with malaria transmission was established by comparing key transmission parameters such as the Entomological Inoculation Rate (EIR) between individuals with different L119F-GSTe2 genotypes.

Results

An. funestus s.l was the predominant malaria vector collected during the entomological survey in both sites (86.6 and 96.4% in Elende and Mibellon respectively) followed by An. gambiae s.l (7.5 and 2.4%, respectively). Sporozoite infection rates were very high in both collection sites (8.7 and 11%, respectively). An. funestus s.s exhibited a very high entomological inoculation rate (EIR) (66 ib/h/month and 792 ib/h/year) and was responsible for 98.6% of all malaria transmission events occurring in both sites. The Human Blood Index was also high in both locations (HBI=94%). An. funestus s.s. mosquitoes with both 119F/F (RR) and L119F (RS) genotypes had a significantly higher transmission intensity than their susceptible L/L119 (SS) counterparts (IRR=2.2, 95%CI (1.1-5.2), p=0.03; IRR=2.5, 95% CI (1.2-5.8), p=0.01 respectively).

Conclusions

This study highlights the major role that An. funestus s.s plays in malaria transmission in Cameroon with an aggravation from GSTe2-based metabolic resistance.

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Bacterial contaminants in stored blood and blood products at the Zomba Central Hospital Blood Bank: Assessing the risk of post-transfusion sepsis.

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Keywords

Blood transfusion, Bacterial contamination, Sepsis, Transfusion-transmitted infections, Incubation

Introduction

National Blood Transfusion Services have done a commendable job in reducing transfusion-related viral, Syphilis, and Malaria infections through the vigilant screening of blood donors and the donated blood. The silent and yet serious risk of post-transfusion bacterial sepsis is rarely addressed in most low-income countries. Transfusion of bacterially contaminated blood and blood components remains the commonest cause of transfusion-associated fatalities. Hence, up-to-date knowledge on the prevalence and causes of bacterial contamination of blood products is necessary for safe blood transfusion services. This study was conducted to investigate the rate and spectrum of bacterial contaminants in stored blood and blood products at Zomba Central Hospital.

Methods

The cross-sectional study was conducted at the Zomba Central Hospital Laboratory from October to November 2022. 115 blood products (57 Whole Blood, 52 Packed Red Blood Cells, and 6 Platelets) were randomly and aseptically collected into Tryptic Soy Broth then incubated for 7 days. After overnight incubation, all samples were sub-cultured onto Blood Agar, Chocolate Agar, and MacConkey Agar. Colony morphology, gram staining reactivity and biochemical tests were used for identification of the isolated organisms. Correlation and regression statistics were used for analysis and results with $p \leq 0.05$ was regarded significant.

Results

Of the 115 samples, 21 (18.3%) were contaminated with various gram-positive bacteria. The contaminants were Bacillus spp (33.33%), Listeria spp (33.33%), Coagulase-negative Staphylococcus (19.05%), Staphylococcus aureus (9.52%), and Enterococcus spp (4.76%). Packed Red Blood Cell (n=11) and Whole Blood units (n=8) were the most contaminated and 90.5% of contaminated products had exceeded 2 storage weeks.

Conclusions

Bacterial contamination of stored blood and blood products is common at the study site. There is a need to intensify trainings, bacterial contaminants surveillance, implementation of various preventive measures and the establishment of a Hemovigilance programme to improve safety in blood transfusion.

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Exploring HIV Testing Service Models for Enhanced Positivity Yield in Southern Africa: A Systematic Review

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Keywords

Targeted testing, HIV testing services, positivity yield, southern Africa, systematic review

Introduction

Targeting HIV testing services, as recommended by the World Health Organization (WHO) in 2015, fast-tracks the identification of individuals living with HIV and addresses the persisting HIV testing gap threatening to delay epidemic control. Different models of targeted testing have been implemented, exposing varied interpretations of the recommendation. This study identified, aggregated and synthesized HIV testing models to develop a concise targeted testing package that can enhance the identification of people living with HIV.

Methods

A systematic literature search of PubMed, Scopus and Web of Science databases identified cross-sectional studies of clients (18+ years) from Southern Africa published between 2016 and 2021. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were applied and the quality of studies was evaluated using the Joanna Brigs Institute tool. Data were extracted using a guided matrix to identify the target population, testing models, description and positivity ratio. Conclusions and methodological suggestions were narratively synthesised

Results

We identified 574 records, from which 42 full-text articles were screened to yield 29 studies of moderate quality (71%)

which met the eligibility criteria. Of these, 25 studies (86.2%) were quantitative. Similar models were synthesized and 12 targeted testing models emerged. Priority models were Index testing, described in 3 (10.3%) studies, scoring the highest positivity yield of >30%. Six studies (20.7%) described male-targeted models with yields influenced by age, economic status and educational level, with a positivity yield of 10% among first-time-testers, whilst four (13.8%) described Key Populations (KP) focused models(positivity yield of 37.5%) and recency-informed targeted testing (13.1% positivity yield).

Conclusions

This review provided a critical overview and insights into the targeted testing models implemented in Southern Africa. Synthesizing the models enhanced their edifice to meet the varied needs of unique populations to enhance positivity yield and can benefit programs to improve efficiency in targeting HIV testing services.

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Development and evaluation of a continuous quality improvement programme for antimicrobial stewardship in six hospitals in Uganda

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Keywords

antibiotic management, continuous quality improvement, global health, antimicrobial stewardship

Introduction

Appropriate antimicrobial use is essential for antimicrobial stewardship (AMS). Ugandan hospitals are making efforts to improve antibiotic use, but improvements have not been sufficiently documented and evaluated.

Methods

Six Ugandan hospitals implemented AMS interventions between June 2019 and July 2022. We used the WHO AMS toolkit to set-up hospital AMS programmes and implemented interventions using continuous quality improvement (CQI) techniques and targeting conditions commonly associated with antibiotic misuse, that is, urinary tract infections (UTIs), upper respiratory tract infections (URTIs) and surgical antibiotic prophylaxis (SAP). The interventions included training, mentorship and provision of clinical guidelines to support clinical decision-making. Quarterly antibiotic use surveys were conducted.

Results

Data were collected for 7037 patients diagnosed with UTIs. There was an increase in the proportion of patients receiving one antibiotic for the treatment of UTI from 48% during the pre-intervention to 73.2%, $p<0.01$. There was a 19.2% reduction in the number of antimicrobials per patient treated for UTI $p<0.01$. There was an increase in use of nitrofurantoin, the first-line drug for the management of UTI. There was an increase in the use of Access antibiotics for managing UTIs from 50.4% to 53.8%. The proportion of patients receiving no antimicrobials for URTI increased from 26.3% at pre-intervention compared with 53.4% at intervention phase, $p<0.01$. There was a 20.7% reduction in the mean number of antimicrobials per patient for URTI from the pre-intervention to the intervention phase, from 0.8 to 0.6, respectively, $p<0.001$ and reduction in the number of treatment days, $p=0.0163$. Among patients undergoing surgery, 49.5% (2212) received SAP during the pre-intervention versus 50.5% (2169) during the intervention.

Conclusions

Using CQI approaches to focus on specific causes of inappropriate antibiotic use led to desirable overall reductions in antibiotic use for URTI and UTI.

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Excess mortality during the COVID-19 pandemic in Tunisia, 2020 – 2021

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Keywords

Excess mortality, COVID-19, Tunisia

Introduction

Excess mortality is a more comprehensive and objective measure of the total impact of the COVID-19 pandemic than the number of COVID-19 deaths alone.

Objective: To estimate the excess mortality during the COVID-19 pandemic in Tunisia.

Methods

We calculated excess mortality rates per 100,000 inhabitants as the number of excess deaths (reported deaths –expected deaths) / population. We used the Vital Strategies excess mortality calculator for monthly analysis «to estimate the expected deaths for 2020 and for 2021 and it's 95% confidence interval (CI) using average historical data from 2015 to 2019. We defined the P-score as follow: [(Reported deaths – Expected deaths)/Expected deaths] *100. We reported results according to the circulation of SARS-CoV-2 Variants of Concern (VOC).

Results

The reported deaths for 2015 -2019 was 342,667 with an average of 68,533 deaths per year. The estimated expected deaths per year was 67,727 ;95%CI [63,666-71,789]. Reported deaths was 75,365 for 2020 and 100,460 for 2021. The excess mortality was 8,124 (68.8 excess deaths per 100,000 inhabitants) in 2020 and 32,733 deaths (277.3 excess deaths per 100,000 inhabitants) in 2021.During the first period in 2020 (wild variant circulation), no excess mortality was registered until August. Highest excess mortality rate was observed in October (20.7 per 100,000 inhabitants, with a P-score of+47%). During the third period (Delta VOC), we registered the highest excess mortality rate (75.4 per 100,000 inhabitants, P-score= +167%) in July 2021

Conclusions

Highest excess mortality rates were reported during the circulation of the Delta SARS-CoV-2 VOC and lifting of COVID-19 restrictive measures.

We recommend to implement the early warning, alert and response system for rapid mortality surveillance and epidemic response in order to prevent severe outcomes.

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The duplicated pyrethroid resistance genes CY6P9a/b are negatively associated with chlorfenapyr resistance supporting the high efficacy of interceptor G2 in controlling pyrethroid-resistant mosquitoes

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Keywords

Malaria, Anopheles, Insecticide resistance, bed nets, Interceptor G2, chlorfenapyr

Introduction

Recent reductions in malaria transmission in Africa are predominantly due to the increased use of pyrethroid-impregnated bednets. Alarmingly, pyrethroid-resistance is threatening their continued effectiveness. To mitigate this risk, novel insecticides such as chlorfenapyr (CFP) are recommended for vector control. Chlorfenapyr-based net interceptor G2 for example has shown great promise at controlling pyrethroid-resistant malaria vectors, but its sustained use could be threatened by the evolution of CFP resistance. understanding how CFP interacts with other insecticides used in vector control and the molecular basis of CFP resistance is needed to achieve successful malaria control.

Methods

In this study, we assessed the resistance status of the major malaria vectors Anopheles gambiae and Anopheles funestus to CFP across Africa then used RNA-seq and Whole genome sequencing followed by functional validation to decipher the molecular basis of CFP resistance.

Results

Resistance to CFP was detected in An. gambiae populations from Democratic Republic of Congo (Kinshasa) (mortality rate: 64.3 ± 7.1%), Ghana (Obuasi) (65.9 ± 7.4%), and Cameroon (Mangoum ;75.2±7.7% and Nkolondom; 86.1 ± 7.4) whereas all An. funestus populations were fully susceptible. After RNA-seq, all metabolic genes commonly associated with pyrethroid resistance (e.g: CYP6P3, CYP9K1, CYP4G16, GSTS1…) were down-regulated in CFP-resistant An gambiae compared to the susceptible lab-strain. In An funestus, we found a negative association between the duplicated P450 genes CY6P9a/b and CFP resistance justifying the full susceptibility of An funestus to this new product.

Conclusions

This study shows that CFP-based control interventions such as Interceptor G2 which is currently largely distributed across Africa for malaria control could be very efficient against An funestus but less against An gambiae, the major African malaria vector. Therefore, detecting molecular markers of CRP-resistance in An gambiae and designing a DNA-based diagnostic tool for the rapid detection and monitoring of resistance in the field will help preserve the efficacy of these tools

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Epidemiological study of Rotavirus diarrhea in hospitalized under 5 years children after the Rotavirus vaccine introduction in Brazzaville, Republic of Congo, July 2023

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Keywords

Epidemiological study, diarrhea, children, Rotarus vaccine, Republic of Congo

Introduction

In Republic of Congo (RoC), Rotavirus (RoV) is responsible for more than 700 deaths in under 5 years children yearly, and about one third of overall hostalizations are caused by RoV in this age group. RoV vaccine (Rotarix) was introduced in the expanded programme of immunization in 2014 in the RoC. In 2020, this first vaccine was replaced by another one (Rotavac). To date, no study was carried out in the RoC after the introduction of the Rotavarus vaccine. This study aims to provide useful epidemiological data on the diarrhea associated with RoV among hospitalized under 5 years children at Brazzaville.

Methods

This cross sectional study was carried out from April 2022 to July 2023, using 229 fecal specimens collected from children under 5 years who were admitted for acute diarrhea in two hospital centres located in the southern part of Brazzaville. These stools were tested for RoV and positive samples were genotyped using RT-PCR

Results

The prevalence of RoV was 49,3%. Most of the children with rotavirus infection received at least one dose of vaccine. Children under 24 months were most infected age group by RoV. The mean frequency of diarrhea was higher in infected compared to non-infected participants and the RoV infection was associated to vomiting (oR = 1,88 ; p = 0,047). The genotypes combination identified were G2P[4] and G4P[11] at 13,8% followed by G4P[8], G4P[9], GIP[10] at 10,3% each. G9P[9] was detected at 6,9% while G1P[4], G2P[8], G3P[4], G3P[6], G3P[9], G3P[10], G4P[4], G8P[8], G9P[4], and G12P[11] were found at 3,4% each

Conclusions

This study showed that rotavirus is still an important pathogen in children under five years old in the southern part of Brazzaville with a great genetic diversity of strains after vaccine introduction.

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Dry season malaria and schistosomiasis transmission amongst children 3–15years of age in Northern Cameroon

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Keywords

Malaria, schistosomiasis, children, dry season, Northern Cameroon

Introduction

The double burden of malaria and helminthiasis in children poses an obvious public health

challenge, particularly in terms of anemia morbidity. While both diseases frequently overlap geographically, most studies focus on mono-infections and general prevalence surveys

without molecular analysis. The current study investigated the epidemiological determinants

of malaria and schistosomiasis transmission among children in the North Region of Cameroon

Methods

School and pre-school children aged 3–15 years of age were enrolled in three communities in March 2022 using a community cross-sectional design. Capillary blood samples were obtained, and each was examined for malaria parasites using the rapid diagnostic test, microscopy, and PCR, while hemoglobin levels were measured using a hemoglobinometer. Stool samples were analyzed for Schistosoma mansoni and S. guineensis infections using the Kato Katz method, and urine samples were assessed for the presence of S. haematobium eggs using the standard urine filtration technique

Results

A malaria prevalence of 56% (277/495) was recorded by PCR, as opposed to 31.5% (156/495) by microscopy. Schistosomiasis was observed at prevalence levels of up to 13.3% (66/495). Both infections were higher in males and the 3–9-year-old age groups. A high frequency of PCR reported P. falciparum monoinfections of 81.9% (227/277) and mixed P. falciparum/P. malariae infections of 17.3% (48/277) was observed. Malaria-helminth co-infections were observed at 13.1% (65/495), with marked variation between P. falciparum/S. haematobium (50.8%, 33/65) and P. falciparum/S. mansoni (16.9%, 11/65). Anemia prevalence was 32.9% (163/495), categorically associated with P. falciparum (45.8%, 104/227), Pf/Sh (11.5%, 26/227), and Pf/Sm (3.9%, 9/227) polyparasitism

Conclusions

Polyparasitism with malaria and helminth infections is common in school-aged children despite control measures. The co-existence of Plasmodium parasites and Schistosoma species among children may lead to an increase in malaria and an enhanced risk of anemia, highlighting the necessity of an integrated approach for disease control interventions.

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The role of migratory wild birds in the epidemiology of highly pathogenic avian influenza H5N1 subtype in Hadejia-Nguru Wetlands, Northeastern Nigeria, 2022

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Keywords

Hadejia-Nguru, AIV, H5N1, HPAI, and wild birds

Introduction

Since 2006, multiple avian influenza virus (AIV) subtypes have been introduced into Nigeria. This has resulted in several AIV poultry outbreaks, purportedly linked to trade and/or wild birds. To elucidate the role of wild birds in the perpetuation of AIV in Nigeria, swab samples were collected from wild aquatic bird species

Methods

A cross-sectional study was conducted among apparently healthy wild aquatic bird species at the Hadejia-Nguru wetlands in Northeastern Nigeria between March and April 2022. A total of 452 swabs (226 cloacae and 226 oropharyngeal swabs) were collected using a mist net to capture the birds. These samples were tested by RT-qPCR, followed by sequencing.

Results

AIV was detected in African jacana, Ruff, Spur-winged goose, Squared-tailed night jar, White-faced whistling ducks, and White storks. A prevalence of 11.1% (25/226) was recorded. Complete genome sequencing of seven of these virus isolates reveals they belong to the H5N1 subtype and possess haemagglutinin (HA) cleavage site motifs (KRRKR*GLF) typical of highly pathogenic avian influenza (HPAI) viruses. Phylogenetic analysis of the complete HA segment shows that HPAI H5N1 from wild birds belongs to clade 2.3.4.4b, but clusters separately from the H5N1 viruses circulating in Nigerian poultry since early 2021. Specifically, the viruses form two distinct genetic groups. One group showed the highest similarity (86%) and clustered with viruses identified in wild and domestic birds in Senegal in December 2020-January 2021, suggesting that these viruses were introduced into West African countries during the winter season of 2020–2021. The second group showed the highest identity (14%) with the H5N1 viruses currently circulating in Europe (2021-2022 epidemic wave), suggesting a novel and recent introduction into Nigeria

Conclusions

This finding highlights the key role of surveillance in wild birds to monitor the diversity of viruses in this area for early detection, risk analysis, disease mitigation, and control.

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SURVEILLANCE OF ADVERSE EVENTS FOLLOWING IMMUNIZATION DURING MASS VACCINATION CAMPAIGNS IN THE DEMOCRATIC REPUBLIC OF CONGO

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Keywords

Covid-19 vaccines; Safety surveillance; The Democratic Republic of Congo; Africa CDC; Mass Vaccination Campaign; AEFI

Introduction

Post-market safety surveys of COVID–19 vaccines are indispensable for ensuring the safety and public trust of vaccines where evidence of COVID–19 vaccines safety is less documented. We aimed to identify the types of AEFIs experienced, and the overall incidence and factors associated with adverse events following immunization (AEFIs) during the vaccination mass campaign in the Democratic Republic of Congo.

Methods

From December 2 to 29, 2022, safety surveillance was conducted on 4766 individuals representing 5% of the total vaccinated population through phone calls from day 1 to 28. We calculated AEFI incidence rates by type of vaccine, sex and age group. We employed the Chi2 test to determine the relationship between the outcome variables and independent variables.

Results

During the follow-up period, a total of 4766 participants were included in the study. The median age of the participants was 36 years, with an interquartile range of 27 to 48 years. Among those contacted for the follow-up calls, 1131(23.7%) reported experiencing AEFIs. The most common AEFIs reported by the participants were fever 458(9.61%), injection site pain 429(9.00%), headache 196(4.11%), stiffness 72(1.51%), and myalgia 55(1.15%). The incidence of AEFIs was higher for Pfizer at 34.4% compared to 23.1% for J&J. The occurrence of AEs was found to be associated with the type of vaccine and age. Participants aged 36 years and above were significantly associated with increased odds of reporting any adverse event (OR=1.17; p=0.022), injection site pain (OR=1.36; p=0.003), and two or more signs (OR=1.46; p=0.008), compared to those below 36 years of age.

Conclusions

Vaccine type (Pfizer) and older age were linked to adverse events following immunization (AEFIs). Further comprehensive safety surveys are required to gather evidence on COVID-19 vaccine safety, aiding the development of tailored vaccination strategies for susceptible individuals.

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Antibiotics prescription practices among physicians in Ibadan North, Ibadan North-East and Ogbomosho North Local Government Areas in Oyo State – Nigeria, January-April 2021

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Keywords

Antibiotics, Antimicrobial resistance, Antimicrobial stewardship, Prescription practices

Introduction

Emergence of bacteria species resistant to the full range of antibiotics available have been attributed to antibiotics misuse and overuse. Previous audits in many low-income countries including Nigeria identified irrational or inappropriate antibiotics prescription practices. To improve rational use of medicines and quality of healthcare, prescription audit is vital in assessing appropriate prescribing of antibiotics. We assessed antibiotics prescription practices among physicians in Oyo state and identified factors influencing prescription practices

Methods

We employed a mixed-methods approach using quantitative and qualitative methods. A cross sectional survey of physicians, review of prescription records and in-depth interview (IDI) sessions with selected physicians was done in 3 LGA in Oyo State. Content analysis of IDI was done and results of survey presented as percentages.

Results

Our findings revealed prescription practices vary between facilities, and is largely dependent on level of experience, attendance of antimicrobial stewardship programmes, clinical specialties, adherence to facility guidelines, and supervision in clinical setting. Penicillins and cephalosporins were mostly prescribed, with oral route most common for administration for an average of 5-day period. Generic and branded drugs are prescribed interchangeably (75.4%), significant number prescribed branded drugs exclusively (16%). While antibiotics prescription is highest in public facilities, prescription of branded drugs is relatively higher in private tertiary and private secondary facilities. Factors influencing prescription practices include affordability and accessibility of drugs, clinical presentation of patients, availability of drugs in clinic, access to laboratory diagnostics tests, and trend of diseases in local environment. Prescribing guidelines were unavailable in private facilities, and non-adherence to available guidelines in many public facilities.

Conclusions

Nigeria is tending towards an era where microbes will be resistant to the full range of available antibiotics. We recommend building capacity of physicians to address gap in antibiotics prescribing and antimicrobial stewardship to reduce practices that can cause antimicrobial resistance and undermine treatment outcomes.

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Acute and Sub-chronic toxicity profile of methanol leaf extract of Cassia sieberiana: assessing therapeutics options in combating antimicrobial resistance

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Keywords

Antimicrobial resistance, cassia sieberiana, Africa, Plants, toxicity

Introduction

The emergence and spread of drug-resistant pathogens threatens the ability to successfully treat diseases, and have become an important public health concern. Medicinal plants such as Cassia sieberiana DC, drumstick has shown to have favorable antimicrobial activity. However, high toxicity levels associated with plants extracts still pose as a major setback in maintaining steady pharmacopeia in the African context. This study aimed at evaluating the acute and sub chronic toxicity profile of methanol leaf extract of C. sieberiana using animal model.

Methods

Methanol Leaf extracts of C. sieberiana were prepared and subjected to qualitative analysis for secondary metabolites. Oral acute and sub-chronic toxicity was evaluated using a limit test dose of 5000 mg/kg. The animals were divided into four groups including negative control and tested groups which received the extract orally at dose of 1500mg/kg, 3500mg/kg and 5000mg/kg, and a lower dose of 250mg/kg, 500mg/kg an 750mg/kg for sub-chronic toxicity. Animals were observed individually for behavioral, neurologic, autonomic profiles, physical states within a duration of 28 days. Their body weights, hematological, biochemical and histopathological parameters were examined. Statistical analysis was performed using SPSS 20.0. $P<0.05$ was considered statistically significant

Results

The acute toxic effect of C. sieberiana leaf extract indicated no toxic symptoms or drug related changes and no mortality at highest dose of 5000mg/kg. Sub chronic toxicity showed considerable body weight gain in tested groups. $P<0.05$ was significant between normal group and plant extract treated rats. There was a dose dependent mean decrease in hematological, biochemical and histopathological parameters among treated groups compared to controls.

Conclusions

The prospects of medicinal plants of African origin with less toxicity levels paves a way forward in the fight against drug-resistant pathogens, and reducing the public health burden of. antimicrobial resistance.

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HIV risk perception and behavior among adolescent girls and young women in selected districts of Zimbabwe, 2022.

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Keywords

HIV, Infection, Risk, AGYW, Zimbabwe.

Introduction

Adolescent girls and young women (AGYW) in Zimbabwe are disproportionately affected by HIV, with HIV prevalence among AGYW aged 15-24 (5%) being nearly twice that of their male counterparts (2.4%). Zimbabwe Health Interventions (ZHI) is implementing the Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) program to reduce HIV incidence among AGYW. We assessed HIV risk perception and behavior among AGYW enrolled in DREAMS program.

Methods

An analytic cross-sectional study was conducted where data were collected from randomly selected AGYW aged 9-19 years across 9 ZHI-supported DREAMS districts using struc-

tured interviews within KOBO toolbox. Data were analysed using SPSS and study received ethics approval from Medical Research Council of Zimbabwe (MRCZ/A/2933).

Results

2,143 AGYW were interviewed of which 67.7% were aged 9-14 and 8.6% perceived themselves at risk of HIV. About 13.2% (282/2,143) AGYW were sexually active and of these, 76% had sex in past 6 months. About 58.4% of those who had sex used condoms, 46.3% knew HIV status of their partner and 8.4% had transactional sex. AGYW currently in school were less likely to be sexually active [AOR=0.02, 95% CI (0.01; 0.04), p=0.00], whereas those who took alcohol [AOR=2.63, 95% CI (1.23; 5.63), p=0.01] and experienced gender-based violence [AOR=4.64, 95% CI (1.95; 11.02) p=0.00] were more likely to be sexually active. Having tested for HIV [AOR=8.82, 95% CI (4.59-16.96), p=0.00)], and knowing HIV status of sexual partner [AOR=7.42, 95% CI (4.14-13.32), p=0.00] were independently associated with condom use; those in school [AOR=0.05, 95% CI (0.02-0.150), p=0.00] and those married [AOR=0.25, 95% CI (0.11-0.6), p=0.01] were less likely to use condoms.

Conclusions

A significant proportion of AGYW did not perceive themselves at risk of contracting HIV and engaged in risky sexual behaviour. We recommend active tracking of AGYW to ensure completion of DREAMS package of services to reduce HIV incidence.

1448

ASSESSING ANTIMICROBIAL RESISTANCE PROGRAM CAPACITIES FOR DATA MANAGEMENT, MONITORINGAND EVALUATION IN SELECTED AFRICAN COUNTRIES.

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Keywords

Data management, capacity, antimicrobial resistance, programs

Introduction

Countries in the WHO AFRO Region developed and are implementing National Action Plans (NAPs) on Antimicrobial Resistance guided by the Global Action Plan. Thirty-six countries published their NAPs on the WHO database for AMR NAPs. A critical gap NAPs intended to close, was lack of local data for decision making. Priority was placed on generation of data from antimicrobial resistance surveillance to strengthen the local evidence base. This rapid assessment was conducted to assess data management considerations of AMR programs within National Action Plans on AMR to support effective management and use of data for action.

Methods

Desk reviews of 15 NAPs, published in English, from the WHO Regional office for Africa database was conducted to ascertain considerations for data management, monitoring and evaluation plans. A simple checklist was applied among selected National AMR focal points to understand the perceptions of AMR national coordination committees on data management, monitoring and evaluation.

Results

All but one of the 15 countries (93%) had an M&E plan embedded within the NAPs. Critical support functions like data management, monitoring and evaluation for effective management and use of data generated had limited consideration.

From the checklist the five selected countries indicated having databases for electronically capturing and storing data generated for and by the AMR program. A national Information Communication and Technology Plan supporting AMR surveillance exists in one of five countries, none has a plan on data management or dedicated staff supporting data management and monitoring and evaluation.

Conclusions

Findings indicate an urgent need for deliberate building of country capacities for data management, monitoring and evaluation for AMR programs. Investment in data management and M&E plans will ensure surveillance systems have integrity, quality, accessible data and interoperable systems to enhance effective analysis, reporting and data use for decision making.

1522

Final results from a phase 2b randomized controlled trial assessing the efficacy and impact of full- and fractional-dose regimens of the RTS,S/AS01E malaria vaccine in Ashanti Region, Ghana and Siaya County, Kenya, September 2017-November 2022

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Keywords

RTS,S/AS01E
vaccine efficacy over 50 months
vaccine impact
fractional-dose regimen

Introduction

WHO has recommended the RTS,S/AS01E (RTS,S) malaria vaccine in areas with moderate-to-high Plasmodium falciparum transmission. Malaria challenge studies in naïve adults suggested that fractional (Fx)-dose (1/5th of the full dose) regimens may increase vaccine efficacy (VE).

Methods

We report VE and impact of RTS,S from a phase 2b trial (NCT03276962) using different immunization regimens with or without Fx doses over 50 months (M) of follow-up since first vaccination. 1500 Ghanaian and Kenyan children aged 5-17M were randomized (1:1:1:1:1) to receive RTS,S or rabies control vaccine. Children in the RTS,S groups received 2 full doses at M0, M1 followed by either full doses at M2, M20 (group R012-20/standard regimen) or M2, M14, M26, M38 (R012-14-26-38), or Fx doses at M2, M14, M26, M38 (Fx012-14-26-38) or M7, M20, M32 (Fx017-20-32).

Results

All RTS,S regimens were immunogenic and well tolerated, without any safety signals. Over 50M, all vaccine regimens showed significant VE against clinical malaria versus control group , ranging from 36% (R012-20; 95% confidence interval [CI]: 19-50) to 51% (R012-14-26-38; 95% CI: 37-61). The results show the benefits of yearly boosters with either full or Fx doses in maintaining VE in moderate-to-high malaria transmission settings. Over 50M, cumulative malaria cases averted/1000 children vaccinated ranged from 1311 (R012-20) to 3054 (Fx012-14-26-38). Vaccine impact accounting for the different RTS,S volumes administered across groups was expressed as cumulative malaria cases averted/1000 full-dose equivalents and ranged from 353 (R012-20) to 1151 (Fx012-14-26-38). Higher impact was seen for the Fx-dose regimens.

Conclusions

All Fx- and full-dose RTS,S regimens were efficacious. Vaccine impact accounting for full-dose equivalence suggests that using Fx-dose regimens could be a viable dose-sparing strategy. The results indicate that RTS,S dosing frequency may be more important than the amount of vaccine antigen administered in maintaining VE over time.

1645

Improvement of HAI surveillance system in Tanzania.

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Keywords

IPC capacity, Hospital-acquired infections, Surveillance, WHO-Infection Prevention and Control Assessment Tool (IPCAT)

Introduction

Tanzania is implementing infection prevention and control (IPC) core components as recommended by the World Health Organization (WHO). In 2020, the USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) program in collaboration with the Ministry of Health (MoH) conducted an IPC program assessment using the WHO-Infection Prevention and Control Assessment Tool (IPCAT). The country scored 2% on the hospital-acquired infections (HAI) surveillance component, indicating no system for HAI surveillance and the country's inability to monitor its IPC program impact. As a result, MTaPS has been assisting the MoH to develop and implement a national HAI surveillance system.

Methods

MTaPS developed a HAI surveillance protocol prioritizing HAIs with high morbidity and mortality—surgical site infection (SSI), catheter-associated urinary tract infection, ventilator associated pneumonia, and central line-associated bloodstream infection. The program began implementing SSI surveillance by developing surveillance forms, daily registers, and monthly reporting forms to ten MTaPS-supported hospitals, and training and mentoring the staff on using the SSI tools for documentation and reporting. Staff also received training and mentoring on using the data to improve HAI prevention practices. MTaPS followed up with IPCAT assessments in 2022 and 2023 to monitor the HAI surveillance component

Results

The HAI surveillance component's score increased from 2% in 2020 to 58% in 2022 and 65% in 2023, indicating steady im-

provement and a well-established national HAI surveillance system. Compliance with IPC standards for prevention of HAI have improved and the ten hospitals are using the data to evaluate the impact of IPC interventions. As a result of the progress, the MoH has scaled up the intervention to 37 referral hospitals

Conclusions

The results demonstrate a feasible and scalable approach for improving HAI surveillance nationally. Staff capacity to conduct HAI surveillance and prevention is a critical factor for improving IPC practices and improving patient outcomes

1663

Impact of Emergency Operations Centre Coordination on Polio Outbreak Response Activities and the Implication on Population Immunity Against Polioviruses 2022-2023

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Keywords

Polio, Outbreak, Coordination, Emergency Operation Centre, Immunization

Introduction

The Southern African region recorded a resurgence of wild polioviruses type 1 (WPV1) and type-2 circulating vaccine-derived polioviruses (cVDPV2) cases. Zambia reported three outbreaks of cVDPV2 with genetic lineage to cases in Democratic Republic of Congo. This necessitated implementation of outbreak response supplementary immunization activities (SIA). The polio emergency operations centre (EOC) was activated to coordinate the SIAs to enhance population immunity.

Methods

The Polio EOC, led by the Ministry of Health and Global Polio Eradication Initiative Partners coordinated activities within six thematic areas. These included Planning and Coordination; Service Delivery; Advocacy Communication and Social Mobilization; Vaccine Management and Cold Chain Logistics; Surveillance; and Strategic Information. SIAs were conducted using bivalent oral polio vaccines (bOPV) and novel oral polio vaccine type 2 (nOPV2) in response to WPV1 and cVDPV2, respectively. Vaccinators were deployed nationwide to support preparation and implementation of SIAs. Microplanning, vaccines distribution, engagement and sensitization of stakeholders, active case search, including monitoring of preparedness and quality of campaigns, were implemented nationwide. A detailed review and analysis of the outcomes were conducted at the end of each SIA.

Results

Five bOPV and two nOPV2 SIAs were implemented from March 2022 to June 2023 across 116 districts. Over 6.1 million children were vaccinated using bOPV, and approximately 2.3 million children using nOPV2 representing a cumulative coverage of 107% and 111% of the target populations, respectively. Progressive improvements in SIA quality were reported using lot quality assurance sampling with 9 of 28 lots passing (32%) in the initial SIA, versus 98 of 116 lots passing (85%) in the fifth bOPV SIA. Similar improvements were reported with nOPV2 SIAs, as 86% and 91% lots passed in both campaigns.

Conclusions

With the increasing cases of cVDPV2 across Africa, the role of a well-coordinated EOC is pivotal in implementing quality outbreak response activities and improving population immunity.

1674

Increasing trends of antibiotic resistance, Uganda: an analysis of National antimicrobial resistance surveillance data, 2018-2021.

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Keywords

Antibiotic resistance, Pathogenic, Surveillance, Drug susceptibility testing, Gram-positive organisms, Gram-negative organisms

Introduction

Continuous monitoring of antimicrobial resistance (AMR) among isolates from clinical samples can inform effective drug selection for patients. In Uganda, human AMR surveillance occurs at national and regional referral hospitals and in selected public universities. Pathogenic isolates from patient samples for routine care are sent to the National Microbiology Reference Laboratory (NMRL) for re-analysis to generate national AMR surveillance data. Despite the availability of national AMR surveillance data, there is limited analysis and utilization of this data to inform planning and policy. We evaluated trends and spatial distribution of AMR to common antibiotics used in Uganda to estimate national AMR burden over time.

Methods

We analyzed national AMR surveillance data of pathogenic bacteria isolated from sterile samples in Uganda, 2018-2021. We calculated the proportions of isolates that were resistant to common antimicrobial classes. We used the chi-square test for trends to evaluate changes in AMR resistance over time.

Results

Out of 537 isolates with 15 pathogenic bacteria, 89% were from blood, 6.3% from pleural fluid, 4% from cerebrospinal fluid, and 0.7% from peritoneal fluid. The most common pathogen was Staphylococcus aureus (20.1%), followed by Salmonella species (18.8%). Overall change in resistance over the four years was 63–84% for sulphonamides, 46–76% for fluoroquinolones, 48–71% for phenicols, 42–97% for penicillins, 17–53% for aminoglycosides, 8.3–90% for cephalosporins,5-26% for carbapenems, and 0-20% for glycopeptides. Annual resistance rates to ciprofloxacin increased from 26-45% (p=0.02) for Gram-positive organisms while among Gram-negative organisms, there were increases in resistance to: tetracycline 29-78% (p<0.001), ciprofloxacin 17-43% (p=0.004), ceftriaxone 8-72% (p=0.003), and meropenem 7-18 (p=0.03).

Conclusions

There was a significant increase in the trends of resistance of Gram-negative organisms to antibiotics such as quinolones, third-generation cephalosporins, and carbapenems in Uganda. We recommend continuous monitoring of national AMR trends to estimate the burden and inform AMR control measures.

1755

Invasive Salmonella Infections in Paediatric Population in Lusaka and Ndola Districts of Zambia, 2020-2021: Building a case for Salmonella Vaccination

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Keywords

Keywords: Salmonella Typhi; Zambia; Antimicrobial Resistance; Typhoid Conjugate Vaccine; Paediatrics.

Introduction

Salmonellae have contributed significantly to the global public health problem with an estimated 9 million people being infected with typhoid and 110 000 dying from it annually. Two typhoid conjugate vaccines have been prequalified by WHO since December 2017 and are being introduced into childhood immunization programmes in typhoid endemic countries. Introduction of typhoid conjugate vaccines (TCVs) in some countries has resulted in decreased proportion of confirmed typhoid cases among children and reduced prevalence of antimicrobial resistance (AMR). The objective of this study was to determine the characteristics of Salmonella species causing bloodstream infections in the paediatric population in Zambia, with an aim of building a case for the introduction of TCV in Zambia.

Methods

A prospective study at paediatric hospitals in Lusaka and Ndola districts of Zambia, 2020-2021. Identification of Salmonella from blood cultures and determination of antimicrobial susceptibility was achieved through automated Vitek 2 compact machine. Whole-genome sequencing (WGS) was conducted, and the sequence data outputs were processed for species identification, serotype determination, multi-locus sequence typing (MLST) and identification of antimicrobial resistance genes.

Results

Eighty-three Salmonella enterica were isolated, fifty isolates underwent WGS. Salmonella Typhi (92%) was the most prevalent serotype followed by Salmonella Enteritidis (6%) and Salmonella Typhimurium (2%). Notable was theemergence of resistance to imipenem (4%), cefepime (9%), cefotaxime (11%) and ciprofloxacin (20%). The phylogenetic cluster analysis of Salmonella Typhi showed a wide range of genetic diversity.

Conclusions

The emergence of resistance to the antibiotics of choice and last resort treatment, options limits treatment alternatives for invasive Salmonella infections, thereby leading to prolonged hospital stay, increased hospital costs and high morbidity and mortality. Strengthening infection prevention and control measures by advocating for improved water, sanitation and hygiene (WASH) provision and the introduction of the TCV can reduce the incidence of Salmonella infections.

1793

Online Assessment of Infection Prevention and Control in Primary Health Care Facilities Across Africa Union Regions: Preliminary Findings

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Keywords

IPC, Assessment, PHC, Africa

Introduction

Africa faces roughly 100 public health emergencies each year, there is evidence that infection prevention and control (IPC) at the primary health care level (PHC) is a cost-effective intervention for health security. This assessment aims to evaluate existing IPC capabilities in PHCs in 5 countries in Africa.

Methods

The Africa Centres for Disease Control and Prevention (Africa CDC) developed a tailored IPC assessment tool for PHC. 957 PHC facilities across five countries (Zambia, Liberia, Kenya, D.R.Congo, Sahrawi Republic) from the Saving Lives and Livelihoods initiative were enrolled in this study. The three-day online assessment tool was deployed through REDCap and data analysis was performed using Microsoft Excel and Python.

Results

Of the 957 assessed facilities, 69% were from Kenya. The IPC performance indicated that 492 (49.3%) facilities scored high, 421 (44%) moderate, and 64 (6.7%) low. In a comparative assessment 44% of Kenyan PHC facilities scored high, in contrast to 61.2% of those from the other countries; 47.9% vs. 35.1% for moderate and 8.0% vs. 3.7% for low performance ($P<0.001$). From the 15 IPC areas evaluated, four areas — training and education, surveillance and monitoring, staffing workload/bed occupancy, and antimicrobial stewardship — fell below 50%. The use of multimodal strategies for IPC implementation had the highest score at 92.9%, while antimicrobial stewardship lagged at 41.0%. Weak positive correlations were observed between the use of multimodal strategy and most parameters. The tool's reliability had a Cronbach's alpha of 0.89.

Conclusions

Despite the limitations of online assessments, the tool had a good reliability. The preliminary results highlight the need to prioritize IPC capacity-building activities at the PHC level. Leveraging the existing technologies, African PHC facilities can provide informative IPC performance data. The next steps, Africa CDC recommends further field visits to validate the findings from the online assessment.

1855

Descriptive Assessment of the Africa CDC Urgent Support Implementation in Lesotho, December 2021 – June 2022

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Keywords

Covid-19, Vaccination, Africa CDC, Urgent Support, CVC, RCCE

Introduction

Vaccination was introduced as an intervention to reduce morbidity and mortality against COVID-19 (C-19). African Union Member States rolled out C-19 vaccination in the first quarter of 2021 and Lesotho commenced in March. Whilst uptake of vaccines in the initial stages was high, significant decreases were noted in the last quarter of 2021, placing a few vaccine doses at risk of expiring. To avert vaccine expiry, Africa CDC and Partners deployed six months urgent support to Lesotho. This assessment seeks to document urgent support strategies and their effectiveness in preventing vaccine expiry.

Methods

We conducted a document review utilizing routine program reports. Data on key performance indicators were extracted from National DHIS2 and triangulated with WHO Africa C-19

vaccination dashboard. Secondary data analysis was conducted to generate frequencies, rates, and proportions. Permission to conduct the study was sought and obtained from Africa CDC Science Office.

Results

Of the 576,460 doses of C-19 vaccines due for expiry from Dec 2021 - Aug 2022, 425709 (74%) doses were administered, with a wastage rate of 4%. Of the doses administered, 225626 (53%) were administered to males while the province with highest coverage is Mohaleshoek (12%). National vaccination coverage increased from 572287 (36%) in Nov 2021 to 867653 (55%) by June 2022 [dose 1= 916484 (58%); dose 2 = 867653 (55%); and Boosters = 47963 (3%)]. Door-to-Door, IEC distribution and TV/Radio activities accounted for 32%, 10% and 58% of the 1,926,484 people reached with Covid-19 messages respectively.

Conclusions

The Africa CDC USP resulted in a significant improvement in COVID-19 vaccination uptake, contributing 19% to the National coverage, reducing the potential of vaccines expiring in stock. The Mass Media was effective in delivering the largest proportion of vaccine messages. We recommend sustainable demand creation strategies to mitigate against vaccination fatigue.

1859

Empowering Community health workers to implement Community-Based Surveillance and Advance Global Health Security in Mali

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Keywords

Community-based surveillance, infectious disease epidemiology, community health workers, global health security, Mali

Introduction

Community-based surveillance (CBS) is the systematic detection and reporting of events of public health significance within a community, by community members. To improve real-time surveillance and harmonize disconnected approaches to CBS by various implementing partners, Mali's Ministry of Health developed a standardized guide for CBS and piloted its use between October 2020 and January 2021. The pilot expanded upon the existing community health worker (CHW) system.

Methods

USAID's Infectious Disease Detection and Surveillance (IDDS) project implemented the CBS guide in three health districts (Kadiolo, Kati, and Kangaba) from July 2020 to December 2021. IDDS supported the Ministry of Health in providing training and equipment to CHWs, heads of health centers, and district and regional surveillance officers on data collection for 16 human and animal diseases including COVID-19 and nine unusual events including maternal death, animal bites, animals/fishes death etc. Post-training supervision visits and data quality review sessions were conducted.

Results

From July 2020 to December 2021, IDDS trained 224 CHWs and healthcare workers on CBS and data reporting and analysis. The post-training supervision visits conducted made it possible to solve the problems of lack of storage, coding and sending of Short Message Service (SMS) by the CHWs, and others. As of December 2022, monthly average of SMS sent by CHWs completeness was 56% in Kadiolo, 56% in Kati, and 79% in Kangaba. A total of 1,482 SMS alerts were sent by CHWs. Of these, 193 (13%) were suspected cases of priority diseases and 1,289 (87%) were other events of public health importance.

Conclusions

CHW involvement in epidemiological surveillance allows for improved detection of public health threats, especially in remote areas with low access to health care. CHWs, when motivated and supported by government-led systems, can fulfill their role in detecting disease cases and events of public health importance.

1861

Microbiological assessment of the impact of poor management of hospital effluents on groundwater in southern Benin, September 2020

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Keywords

Hospital effluent management, resistance genes, environment, Benin

Introduction

Care facilities in their daily activities generate a lot of waste. These include liquid effluents. These hospital effluents can contribute to considerable infectious risks in case of poor management due to the presence of multi-resistant bacteria.

This study aimed to take stock of the management of hospital effluents and to assess the disseminating potential of bacteria and resistance genes present in these effluents the environment.

Methods

Questionnaires were sent to the various staff of the Seme-Krake health centre with a view to identifying the waste management process within the centre.

Samples of hospital effluents and surrounding groundwater were taken. After membrane filtration, bacterial culture and identification of bacterial species were carried out using conventional bacteriology techniques. The antibiotic susceptibility of the identified strains was carried out using the Kirby Bauer technique. Genes encoding resistance to beta-lactam, sulfonamides, glycopeptides, polymixins including colistin (MCR-1), aminoglycosides (AADA) were searched using the PCR technique.

Results

The results obtained revealed poor management of effluents from the Sèmè-Kraké Health Center according to Decree No. 2008-1007 regulating the management of biomedical waste. In addition, a similarity between the bacterial strains found in hospital effluents and those found in groundwater consumed by surrounding populations has been demonstrated. The predominant species found in hospital effluents were Aeromonas spp. (33.30%), Klebsiella pneumoniae (33.30%,), coagulase-negative staphylococci (16.70%). At groundwater level, the same species were found with respective percentages of 31.25%, 18.75% and 31.25%. The resistance genes SHV, VIM, AADA, SUL2 and MEC A have been found both in strains isolated from the Health Centre and in those of groundwater.

Conclusions

The results of the present study are a wake-up call for health authorities. The health of the population is really threatened. It is important that urgent solutions and advocacy are developed for better management of hospital effluents.

1890

A cost-effective and user-friendly Whole Genome Sequencing pipeline for Mycobacterium tuberculosis using Oxford Nanopore Technologies

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Keywords

tuberculosis, drug resistance, whole genome sequencing, MinION, diagnosis

Introduction

Drug resistant tuberculosis (TB) is a serious concern and delays in correct diagnosis can hinder an already arduous drug treatment regimen. Whole genome sequencing provides more detail than standard molecular tests (e.g. GeneXpert) and phenotypic testing, but commonly used platforms (e.g. Illumina MiSeq) can be expensive to set up. The Oxford Nanopore Technologies (ONT) MinION is a potentially more cost effective option. Our objectives were to optimise each step in a TB whole genome sequencing diagnostic pipeline using the ONT MinION, balancing operational user-friendliness, cost-effectiveness and time to results, whilst also ensuring accuracy.

Methods

Culturing times and media were tested, and precipitation-based and spin-column-based CTAB DNA extraction protocols were compared to optimise DNA yield. ONT library preparation kits were compared and bioinformatic tools for basecalling and analysis were evaluated to find the most accurate resistance SNP and lineage predictor.

Results

For the optimal pipeline, a spin-column CTAB DNA extraction method was combined with the Rapid Barcoding 96 library preparation kit, high accuracy basecalling and data analysis using TB-Profiler. Our pipeline was 76% (13/17) concordant with phenotypic antibiotic susceptibility test results and overall 88% (15/17) concordant with Illumina data. It was con-

cordant for 16/17 (94%) isolates for lineage (one isolate was mixed lineage) and for 16/17 (94%) isolates for resistance SNPs (a SNP was picked up by ONT that was missed by Illumina). The cost per sample was less than 130 USD and time to diagnosis was around four weeks (including culture).

Conclusions

The optimised TB sequencing pipeline successfully picked up both lineages and resistance SNPs, outperforming our data from Illumina sequencing. It does not require bioinformatics experience, is quicker than phenotypic drug sensitivity testing and the cost per sample is comparable with Illumina and culture. These features will make it an important tool for incorporation into routine drug-resistant TB diagnostics and larger-scale surveillance.

1912

Africa CDC urgent support for the COVID 19 vaccination campaign in Eastern Province, Zambia, February 2022

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Keywords

africa cdc, urgent support, covid-19, Zambia

Introduction

COVID19 vaccination has been shown to significantly reduce morbidity and mortality associated with COVID19. Rollout of COVID19 vaccination on the African continent commenced in Quarter 1 of 2021. However, the risk of COVID19 vaccine expiry remains a threat to vaccination programs in Africa. In February 2022 Africa CDC in collaboration with the Zambia Ministry of Health (MoH) provided urgent support to the Eastern Province to increase Covid-19 vaccine uptake and avert the expiration of 10, 361 Pfizer vaccine doses. This review seeks to document strategies implemented during the urgent support and their contribution to averting vaccine expiry.

Methods

A document review of routine activity reports from MoH and partners was conducted to identify strategies used during urgent support and their effectiveness in preventing vaccine expiration. Data were extracted from DHIS2 and exported to Microsoft Excel for analysis.

Results

A total of 22,544 doses of Pfizer vaccines were allocated to Eastern Province, of these, 10,361 (46%) doses were due to expire in 7 days. Africa CDC urgent support involved a 4-day intensive campaign strategy utilizing mobile vaccination teams and community health workers who engaged in risk communication and community engagement (RCCE). RCCE activities included interactive radio programs, announcements through public address systems, door to door mobilization, road shows, and community meetings. During this period, a total of 10,069 (97%) of doses were saved from expiry.

Conclusions

The 4-day intensive campaign rolled out in Eastern Province contributed to utilization of 10069 Pfizer vaccine doses which were due to expire. intensive campaigns are an effective tool to improve vaccine uptake thereby preventing vaccines from expiry.

2025

A single mutation G454A of P450 CYP9K1 gene is driving pyrethroid resistance in the major African malaria vector Anopheles funestus reducing bed nets efficacy

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Keywords

Malaria, CYP9K1, Anopheles funestus, Pyrethroid, insecticide resistance

Introduction

Resistance to insecticides has escalated and is now threatening the continued effectiveness of control tools such as LLINs. Lack of molecular markers of such resistance in the vectors hinder efforts to improve resistance management. In this study, we elucidated the role of CYP9K1 (P450 gene) in conferring resistance to Pyrethroid in An. funestus.

Methods

Genetic polymorphism of CYP9K1 was investigated in samples collected in 2020 across Africa compared to 2014. Transgenic Drosophila flies approach was used to assess whether this gene confers pyrethroid-resistance through overexpression and/or allelic variation. Interestingly, we designed a simple DNA-based diagnostic assay which helped to established

the impact of this gene on the efficacy of LLINs using cone test and experimental hut trials (EHT).

Results

Analysis of samples from 2014 revealed a dominant CYP9K1 haplotype (G454A) within Uganda (100%), but at very low frequency in other African regions including Cameroon (25%) and Malawi (8%). However, the same haplotype was found fixed in 2020 in Cameroon (100%) but still at very low frequency in Ghana (0%) and Malawi (8%). Drosophila transgenic flies expressing the 454A-CYP9K1 resistant allele were significantly more resistant to pyrethroid than the wild type allele G454-CYP9K1 and controls. Using the newly established diagnostic assay, we noticed a strong correlation with pyrethroid resistance and analysis of the geographical distribution revealed a fixation of the resistant allele in Eastern and some Central African countries and absence in Western and Southern Africa. Further EHT showedthat CYP9K1-mediated resistance reduces the efficacy of LLINs including new nets.

Conclusions

This study highlights the ability of CYP9K1 resistant allele to reduce efficacy of vector control tools and also offers a new DNA-based assay to monitor resistance in the field and improve resistance management strategies.

2056

Effects of HIV oral Pre-Exposure Prophylaxis on the incidence of sexually transmitted infections among Female Sex Workers in Nairobi, Kenya, August 2021.

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Keywords

Drop-In Centres (DICe), Female Sex Workers (FSWs), HIV, Pre-Exposure Prophylaxis(PrEP), Sexually Transmitted Infections (STIs)

Introduction

Pre-exposure Prophylaxis (PrEP) is effective in prevention of Human Immunodeficiency Virus (HIV) infections among populations at substantial risk. World Health Organization recommended use of PrEP for prevention of HIV; however, risk of STIs among users remains high. Increased risk of STIs reduces the prevention benefits of PrEP while increasing STI rates impact economic and health burdens. This study investigated the effects of HIV oral PrEP on the incidences of STIs; it compared the incidence rate and risk of bacterial STIs between PrEP and non-PrEP users and burden of STIs among FSWs.

Methods

Study Design: Six-month retrospective cohort study

Study Population: The study was conducted among FSWs comparing PrEP and non-PrEP users

Study Location: FSW Drop-in Centers (DICEs) in Nairobi.

Sampling: Multi-stage sampling method was used

Sample size: 168 PrEP and 168 non-PrEP users.

Data Collection: Data was collected using a structured data abstraction tool from the records of the participants.

Data Analysis: analysed in STATA. Chi-square was done to determine differences in mean, and cox-regression and Nelson-Aelen cumulative hazard estimate to determine relationships.

Results

Oral PrEP users were 1.8 times at higher risk of STIs (P=0.005, 95%CI) with higher Cumulative incidence(P=0.012, 95%CI) than non-PrEP users and RR of 1.4(P=0.012, 95%CI). STI Incidence rate was 11 and 16 per 1000-person years Non-PrEP and PrEP users, respectively, and a significant difference in the incidence of STI cases in month five (P=0.012, 95%CI). Composite STI prevalence was 35.4%, and pooled STI incidence rate was 14 per 1000-person years.

Conclusions

Oral PrEP use can increase STI risk, as demonstrated by the significant relative risk, hazard ratio, and higher cumulative incidence rate. This poses Public Health risk and may undermine the HIV PrEP benefits. STI prevention counseling and Combination prevention must be emphasized during PrEP initiation and PrEP follow-up visits while cases are treated.

2424

Assessment of the Polymorphic Levels of Plasmodium falciparum chloroquine resistance transporter gene (K76T) and Plasmodium falciparum multi-drug resistance gene 1 (N86Y) in Buea, Cameroon, and Comparison of Mutation Evolution From 2010 to 2023 Across Cameroon

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Keywords

Plasmodium falciparum, Chloroquine resistance, K76T and N86Y

Introduction

Resistance to most available antimalarial drugs has been the major challenge in managing the disease. There is therefore the need for novel antimalarial drugs to circumvent the current drug resistance and pre-empt future resistance. Another option is the reintroduction of previously abandoned antimalarial drugs to which the parasites have regain sensitivity as a result of reduced drug pressure. This susceptibility can be assessed by evaluating the polymorphic levels of the concerned biomarkers of drug resistance.

Methods

Consented participants were recruited into the study and their socio-demographic data were collected using well-structured questionnaires. About 1mL of venous blood was collected by venepuncture from each of a total of 155 participants for parasitaemia assessment by light microscopy and genetic analysis by PCR and RFLP. Parasite genomic DNA was extracted from the field isolates by the Chelex-PBS method. Single nucleotide polymorphism (SNP) genotyping was then undertaken by nested polymerase chain reaction (PCR) followed by allele-specific restriction analysis (ASRA).

Results

Results showed that 56.1 % (87) of the participants were afebrile. Parasitaemia was independent (p>0.05) of sex and age. Febrile individuals had higher parasitaemia than afebrile individuals. Plasmodium genomic DNA was successfully extracted from all the 155 samples and upon analysis, 153 (98.7%) were positive for P. falciparum mono infection and 2(1.3%) positive for Plasmodium ovale. Plasmodium malariae and P. vivax were not found. The prevalence of sensitive K76 and N86, were 37.3% and 55.6% respectively in the study area.

Conclusions

The study shows a gradual return of the chloroquine sensitive genotype due to the withdrawal of chloroquine from the treatment policies in Cameroon. However, the prevalence of mutant genotype is still higher than world Health organisation maximum threshold of 10% drug resistance.Data obtained compared with recently published data shows a near-complete reversion to sensitive parasites for markers conferring resistance to the 4-aminoquinolines.

2526

Genomic Characterization of Vibrio Cholerae Isolates from the 2023 Cholera Outbreak in Zambia

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Keywords

Vibrio Cholerae, whole-genome sequencing, bioinformatics, Zambia

Introduction

Cholera, caused by Vibrio cholerae, remains a major public health problem in Zambia. Between January 1 and August 28, 2023, nine (9) different districts reported cholera, with 811 cumulative cases and a case fatality rate of 1.12%. Whole-genome sequencing is an effective tool enabling the elucidation of genotypic characteristics useful in investigating infectious disease outbreaks. However, it is underutilized in cholera outbreak investigation and surveillance. Here we present findings on the genotypic characterization of Vibrio cholerae isolates from the 2023 outbreaks in Zambia.

Methods

Genomic DNA was extracted from pure cultures of Vibrio cholerae obtained from clinical samples. Whole-genome sequencing was performed using the ONT GridION and SQK-RBK.110.96 sequencing kits. Following quality-checks using fastQC v0.12.1 and trimming using porechop v0.2.4, reads were assembled de novo using the Dragonflye v1.1.1 pipeline. Multi-locus sequence typing was performed to identify virulence factors and other genetic elements. Antibiotic resistance genes were identified using the AMRFinder and CARD

databases. Phylogenetic analysis is ongoing to determine genetic relatedness and transmission patterns, among others.

Results

A total of 68 isolates, including 15 from Eastern Province, 6 from Luapula and 47 from Northern Province, were sequenced. Consistent with serological typing, all Eastern Province isolates were O1 Ogawa, Luapula and Northern O1 Inaba. Analysis of asd, dnaE, lap, pgm, recA and other genetic elements found all Eastern Province isolates of the El Tor biotype, with mixed biotypes circulating in Luapula (4/6 El Tor and 2/6 Classical) and Northern (38/47 El Tor and 9/47 Classical). Cholera toxin genes ace, cxtA and cxtB were present in all isolates, while zot was variably present.

Conclusions

This study provides genetic level insights that explain phenotypic observations and can guide antibiotic use and measures to mitigate the possible environmental persistence of V. cholerae, particularly in the northern regions of Zambia where repeated outbreaks are common.

2533

Optimising HIV Testing in Children (5-14 Years) in South Africa: A Cost-Effectiveness and Feasibility Analysis

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Keywords

Child HIV testing, South Africa, cost-effectiveness analysis, Incremental cost-effectiveness ratios, Screening Tool, Counsellor Intensive Training

Introduction

South Africa has an estimated 140,000 untreated children living with HIV (CLHIV), majority of whom are 5–14-years-old. Effective HIV-testing strategies are essential, especially as these children face significant challenges due to limited HIV-testing resources.

Methods

We employed a cost-effectiveness analysis from a healthcare perspective to estimate the cost of HIV-testing across policy options. Data used came from published reports and literature review. Currently, Provider-Initiated Testing and Counselling (PITC) is used. Three alternative policy options were evaluated: 1) Screening Tool (ST) that allows counsellors to better focus testing on higher risk children; 2) Counsellor-Intensive Training (CIT) involving a 5-day training course on child counsel and testing; and 3) combining ST with CIT(STC). A decision tree was adopted to model outcomes, costs and incremental cost-effectiveness ratios (ICERs) for each option. Outcomes included ICERs from healthcare system's perspective, number of undiagnosed CLHIV, and timeframe to identify all undiagnosed CLHIV.

Results

We found PITC would take about 12.5years to identify all undiagnosed CLHIV, while ST, CIT, and STC options reduce the timeframes to 4.5years, 6.25years, and 2.25years, respectively. The corresponding ICERs were $101.81, $3,486.72, and $1,187.68 per CLHIV diagnosed for ST, CIT, and STC, respectively. STC incurred 1.3times more cost than CIT (cost difference of $4.71million) and nearly tripled the cost of PITC. Although STC adoption would necessitate an additional investment of $12.43million in paediatric HIV-testing compared with PITC, it would miss the fewest undiagnosed CLHIV at healthfacility, striking a balance between cost-effectiveness and efficient case detection in improving paediatric HIV-testing.

Conclusions

The current HIV-testing approach may miss a significant portion of undiagnosed CLHIV. To bridge the testing gap, implementation of STC for child HIV-testing and counselling is recommended. By identifying and treating CLHIV earlier, these strategies could mitigate health risks, reduce the associated economic and societal burdens, and promote long-term control of HIV epidemic.

2781

The Role of Africa CDC Rapid Responders in Managing the Sudan Virus Disease Outbreak in Uganda: September 2022 - January 2023

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Keywords

Sudan Virus, Rapid responders, Deployment, Response

Introduction

Emerging diseases, including Ebola, a zoonotic disease poses global health threats. Africa CDC deployed a 17-member team to Uganda, countering Sudan virus disease with tasks on case identification, contact tracing, safe burials, healthcare training, and risk communication. This study outlines their role in the September 2022-January 2023 outbreak.

Methods

The study narrates the assembly of a diverse team, including epidemiologists, laboratory scientists, physicians, and social scientists, drawn from African Union member states through the African Volunteer Health Corps (AVoHC) database. This team was deployed based on an initial needs assessment conducted by the MOH and partners, covering a six-month period from November 2022 to April 2023 in Uganda

Results

240 laboratory staff from Mbarara, Rwenzori, Hoima, and Soroti; SVD high-risk regions in Uganda were trained and deemed competent for sample management to prerequisite biosafety and biosecurity measures for Sudan Virus Disease laboratory diagnosis. The team trained and mentored 3000 Village Health Teams on strengthening the local community in the fight against the Sudan Virus Disease (SVD) and avert a worsening of the situation. 300 health professionals were mentored on infection prevention and control in the nine affected districts of the country in collaboration with other supporting partners. The IPC team took part in the establishment of screening locations at each point of entrance of each healthcare facility they visited. IPC SOPS, and protocols were created. This resulted to the reduction of cases, deaths, and spread of the virus.

Conclusions

The study highlights Africa CDC Rapid Responders' vital role in managing disease outbreaks through a swift and community-centered approach, informing future strategies and emphasizing their crucial role in safeguarding African nations' public health.

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Epidemiological surveillance of SARS-CoV-2 in wastewater in Côte d'Ivoire: Preliminary study

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Keywords

SARS COV 2, Côte d'Ivoire, Wastewater, surveillance

Introduction

Sewage analysis has been widely adopted by scientists as a method to effectively detect and monitor the presence and spread of COVID-19, which has been recognized as one of the most serious threats to global public health today. This national monitoring of SARS-CoV-2 in domestic wastewater is part of monitoring the circulation of the disease in areas where screening is weak.

Methods

Monthly collections of domestic wastewater at different sites in the cities of Abidjan and Man have been carried out. This study presents the preliminary results of the detection of SARS-CoV-2 in the samples collected. This work takes into account samples collected from November 2021 to June 2022. Forty-three composite Sewage samples were collected. Samples were concentrated using ultrafiltration method using Amicons® Ultra-15, 10 kDa (Merck-Millipore, Ref: UFC901096).

Results

SARS-CoV-2 RNA was detected and quantified by RT-qPCR using primers and probes targeting Gene E (generic betacoronavirus group B) and ORF1ab (SARS-CoV-2 specific). The Qantstudio 5 thermal cycler (Applied Biosystems) was used as an amplification machine. SARS-CoV-2 RNA was detected in 34.9% (15/43) of samples. The sites of Abidjan which included Adjamé (16.28%), followed by the site of Abobo (9.3%) and Yopougon (7%) were the most contaminated with a strong presence of SARS-CoV-2, while Man had a positivity rate of 2.32%.

Conclusions

This study confirms the possibility of using wastewater for SARS VOC2 surveillance, especially in countries where voluntary screening is low.

Surveillance of wastewater can be a valid complement to human analyses in the monitoring and prediction of certain infectious diseases.

2883

Emerging integrase resistance in dolutegravir-treated individuals calls for more cautious use of dolutegravir-containing regimens in resource limited settings

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Keywords

HIV drug resistance; Integrase resistance, DTG-containing regimens, Cameroon.

Introduction

With rapid expansion of DTG-based regimens, surveillance of acquired drug resistance is crucial especially in resource limited settings (RLS) where suboptimal transitions and other programmatic factors may favour HIV-drug resistance (HIVDR) emergence despite the high genetic barrier of these drugs. We evaluated the threshold of acquired HIV drug resistance (HIVDR) to DTG, in treatment-experienced patients in Cameroon.

Methods

A laboratory-based sentinel surveillance was conducted at the Chantal Biya International Reference Center (CIRCB), Yaoundé, Cameroon, between January-June 2023. As per the WHO-recommendations, remnant viral load samples of antiretroviral therapy (ART) experienced individuals with unsuppressed viral loads were sequenced in the HIV-1 pol-gene using an in-house assay, targeting the integrase, protease, and reverse-transcriptase regions with sequence analysis done using Stanford HIVdb.v.9.5 and statistical analyses using epiinfo.v7.2.5.

Results

We included 54 individuals; median age [IQR]:41 [28-46] years; 51.9% female. The majority were on first-line regimens (46.3%), and 18.5% (n-10) reported exposure to DTG-containing regimens. Overall, median ART-duration was 190[123-457] weeks, with 73[34-165] weeks on DTG-containing regimens. Median CD4-count was 157[70-299] cells/mm3 and median viral-load,16255[3695-68529] copies/ml. Overall HIVDR prevalence was 94.4% (95%CI: 84.6%-98.8%), with 92.6% (95%CI: 82.1%-97.9%) for both NRTI and NNRTI resistance, 33.3% (95%CI: 21.1-47.5) PI/r resistance and 7.4% (2.1%-17.9%) for integrase resistance. Amongst those with integrase resistance, three had just one mutation (R263K), while one individual (receiving concomitant rifampicin containing tuberculosis treatment) had multiple mutations (T66I, G118R, E138K, L74I) despite doubled DTG dosing. Individuals with integrase resistance had longer median ART-median duration with DTG (164 [86.7-198.4] weeks) as compared to those without resistance (34 [11.4-59.9] weeks).

Conclusions

In this RLS, emergence of integrase resistance is substantial, especially with longer duration on DTG-based regimens. This calls for strict viral load monitoring on DTG-containing regimens and the use of genotypic resistance testing to treatment optimisation after failing on DTG.

Track 9: Unmasking the Silent Epidemics: Non-communicable Diseases (NCDs), Mental Health and Injuries

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Intersection between Intimate Partner Violence, Water and Sanitation in Kibra Slums: A Cross Sectional Study, April 2023.

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Keywords

Intimate Partner Violence, Women, Slums, Water, Sanitation

Introduction

Intimate Partner Violence (IPV) is violence orchestrated by an intimate partner which causes physical, sexual, or emotional harm. While IPV occurs in diverse settings, women residing in slums face unique challenges that exacerbate their vulnerability to IPV compared to other women. Slums are characterized by limited access to clean water and sanitation. Hence it's imperative to conduct research on IPV and its interconnection with these factors to assess opportunities for tailored made interventions. This study aimed at determining if access to water and sanitation are risk factors of IPV among women in slums of Kibra Nairobi, Kenya.

Methods

A cross-sectional study design was employed to collect data. A total of 1,068 women of reproductive age living in Kibra from seven villages were selected through systematic random sampling from every 10th household. Modified questionnaire from the Demographic Health Survey targeting measures of physical, sexual and emotional violence was used. Data were managed using Open Data Kit (V4.2) and Logistic regression analysis conducted using STATA (V15) at 95% CI and significance level set at p=0.05.

Results

Women accessing water from outside households (AOR=18.18, CI=8.62-38.33, p=<0.001) had increased odds of experiencing IPV compared to their counterparts. Women who had access to water and toilet in the past 24 hours (AOR=0.44, CI=0.31-0.64, p=<0.001; AOR=0.57, CI=0.37-0.88, p=0.01) were found to be protected against IPV.

Conclusions

Accessing clean water and sanitation facilities may decrease the economic burden on households in slums. Families may have to spend less on finances in obtaining WASH services leading to financial freedom.Stress in accessing water outside homes may exacerbate IPV due to partner's insecurities. Connecting households with clean piped water and construction of adequate sanitation facilities may reduce risk of IPV. Addressing WASH alone may not eliminate IPV, but comprehensive approaches integrating WASH interventions with and economic empowerment can reduce risk of IPV.

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Overcoming barriers to mental healthcare services for children and adolescents in conflict-affected settings: A stepped-wedge cluster randomized controlled trial of proactive community case detection conducted in Uganda

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Keywords

mental health; child and adolescents; stepped-wedge trial; low- and middle income countries; Uganda

Introduction

Worldwide, approximately one in seven 10-19-year-olds face mental health issues in any given year, yet most go unnoticed and untreated (WHO, 2021). To address this, the Community Case Detection Tool (CCDT) was developed, enabling non-experts to proactively detect cases through culturally appropriate vignettes showcasing signs of psychological distress in children. Previous CCDT studies demonstrated that nearly 70% of children were accurately detected as needing mental healthcare when compared with structured clinical interviews.

Methods

A stepped-wedge cluster randomized controlled trial (SW-CRT) was conducted to assess the effectiveness of the CCDT on mental health service utilization among children and adolescents in five refugee settlements in Uganda. The CCDT was sequentially introduced in 28 zones over nine months. Trained community gatekeepers used the tool to detect potential cases of mental health problems and promote help-seeking.

Results

Immediately after introducing the CCDT, there was a significant 21-fold increase in utilization rate (95% CI: 12.87, 33.99). A decline in utilization over time in both the control (i.e., pre-CCDT implementation) and intervention (i.e., CCDT implementation) conditions was observed, demonstrating a time-averaged 17-fold (8.15, 34.99) increase in utilization rate.

The incidence rate, i.e., the rate of new visits, increased from 27.50 new visits per 100,000 children per month in zones without the CCDT, to 133.75 new visits per 100,000 children per month.

Conclusions

This study found that a two-day training on the CCDT enabled community members to enhance help-seeking behaviours in children and adolescents and make a valuable contribution towards reducing the mental health treatment gap. It is important to assess the scalability of this approach within Uganda's national mental health programme. Additional research is necessary to improve sustainability by selecting appropriate gatekeepers, maintaining their motivation, and to replicate these findings in other contexts.

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Intrafamilial Adverse Childhood Experiences and Suicidal Ideation: The mediating roles of impulsivity and resilience among Tunisian Youth.

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Keywords

Adverse Childhood Experiences, Impulsive Behavior, Resilience Psychological, Suicidal Ideation, Adolescent, Tunisia.

Introduction

Giving that resilience is the ability to cope with life adversities, and impulsivity is characterized with rapid reactions without foresight, we aimed to explore the pathways between intrafamilial childhood adversities, resilience, impulsivity and suicidal behaviors among adolescents in Mahdia and Gafsa cities (Tunisia).

Methods

We conducted a cross sectional study in all secondary schools of Mahdia and Gafsa cities from January to February 2020. Based on the cluster sampling, we randomly picked one class from every grade of each high school (N=2354). Exposure to intrafamilial early life experiences was evaluated by the Arabic version of the Adverse Childhood Experiences (ACE)-International Questionnaire developed by the World Health Organization. Resilience and impulsivity were assessed via the Arabic versions of the Adolescent Psychological Resilience and the Barratt Impulsivity scales. Data entry and analyses were conducted using IBM SPSS statistics.

Results

A total of 3170 students were recruited with a response rate of 74%. Adolescents mean age was 17.32 ±1.5 and females represented 65.8% of the study sample. About 81.1% reported being emotionally abused. The resilience mean score was 86.10 ± 9.85. Impulsivity was screened among 42.2% of them. About 38% of students presented suicidal thoughts, 16.4% had a suicide plan, and 10.8% have made a suicide attempt.

We found that exposure to intrafamilial childhood adversities predicts suicidal behaviors through impulsiveness (% mediated = 18% for emotional violence; %mediated = 17.4 % for physical violence) and interpersonal resilience (% mediated = 24% for emotional violence; % mediated = 20.4% for physical violence).

Conclusions

Our results emphasize the need to prevent childhood adversities, and to seek out a way to promote ACE protective factors among adolescents such as resilience.

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Arterial stiffness is associated with oxidative stress and endothelial activation among persons with treated HIV in Zambia

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Keywords

Oxidative stress; endothelial activation, endothelial dysfunction; arterial stiffness, peroxynitrite.

Introduction

BACKGROUND: Cardiovascular disease (CVD) is a major health concern for people living with HIV (PLWH) in sub-Saharan Africa. CVD can be caused by oxidative stress and endothelial activation, which affect the elasticity of blood vessels. However, there is a lack of data on how these factors impact vascular health in PLWH. This study aims to fill this gap and provide insights into CVD prevention and management in this population. This study aimed at assessing the relationships between oxidative stress and endothelial activation with vascular stiffness among PLWH. We hypothesized that higher levels of oxidative stress and endothelial activation markers will be associated with greater vascular stiffness in this population.

Methods

Fifty-four PLWH on antiretroviral therapy > 5 years and 57 HIV-negative controls, all aged 18-45 years, were enrolled from the University Teaching Hospital, Lusaka, Zambia. Oxidative stress was measured by nitrotyrosine, a peroxynitrite biomarker, and endothelial activation by soluble intercellular adhesion molecule-1 (sICAM-1) plasma levels. Vascular compliance was measured using carotid-radial pulse wave velocity (crPWV) and arterial stiffness index (crASI).

Results

PLWH had higher sICAM-1 levels (median 345 ng/mL) compared to controls (275 ng/mL, $p < 0.01$), as well as higher nitrotyrosine levels (297 versus 182 nM; $p = 0.02$). Median crPWV was similar between the groups, but PLWH had higher crASI (2.4 versus 2.2 cm/ms; $p < 0.05$). After adjusting for age, fat mass, and blood pressure, the estimated effect of a one-unit increase in nitrotyrosine on crPWV was twofold higher in the PLWH, but neither reached significance. In a model pooling all participants, there were significant differences in the relationship of nitrotyrosine with crPWV and crASI by HIV status.

Conclusions

PLWH in sub-Saharan Africa had significantly greater oxidative stress and endothelial activation compared to HIV-negative individuals. These factors may contribute to increased arterial stiffness and higher CVD prevalence in this population

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Growth and body composition 5 years after treatment for severe acute malnutrition: a 5-year prospective matched cohort study in Ethiopian children

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Keywords

Severe acute wasting, un-complicated, body composition, bio-electrical impedance analysis, growth, community-based management of acute malnutrition, long-term association

Introduction

Introduction: Short-term anthropometric outcomes are well documented for children treated for severe acute malnutrition (SAM). However, anthropometric recovery may not indicate restoration of healthy body composition. Objective of the study was to evaluate long-term associations of SAM with growth and body composition of children 5-years after discharge from community-based management of acute malnutrition (CMAM).

Methods

Method: We conducted a 5-year prospective cohort study, enrolling children aged 6-59 months discharged from CMAM (post-SAM) (n=203) and non-malnourished matched controls (n=202) in 2013, from Jimma Zone, Ethiopia. Anthropometry and body composition (bio-electrical impedance) were assessed. Multiple linear regression models tested differences in height (HAZ), weight (WAZ) and BMI (BAZ) z-scores, and height-adjusted fat-free mass (FFMI) and fat mass (FMI), between groups.

Results

Results: Post-SAM children had higher stunting prevalence than controls at discharge [82.2% compared with 36.0%; $p<0.001$], 1-year [80.2% compared with 53.7%; $p<0.001$] and 5-year post-discharge [74.2% compared with 40.8%;

p<0.001]. Post-SAM children remained 5 cm shorter throughout follow-up, indicating no HAZ catch-up. No catch-up in WAZ or BAZ was observed. Post-SAM children had lower hip (-2.05 cm; 95% CI: -2.73, -1.36), waist (-0.92 cm; CI: -1.59, -0.23) and mid-upper arm (-0.64 cm; CI: -0.90, -0.42) circumference and lower-limb length (-1.57 cm; CI: -2.21, -0.94) at 5-year post-discharge. They had larger waist-hip (0.02 cm; CI: 0.008, 0.033) and waist-height (0.013 cm; CI: 0.004, 0.021) ratios, and persistent deficits in FFMI at discharge, 6-month, and 5-year post-discharge (p<0.001 for all). No difference was detected in head circumference, sitting height or FMI.

Conclusions

Conclusions: Five years after SAM treatment, children maintained deficits in HAZ, WAZ, BAZ and FFMI, with preservation of FMI, sitting height and head circumference at the expense of lower-limb length, indicating a 'thrifty growth' pattern. Research is urgently needed to identify effective clinical and public health interventions to mitigate these consequences of malnutrition.

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Microbiologic and virulence characteristics of Moraxella catarrhalis isolates from Zambian children presenting with acute pneumonia

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Keywords

antimicrobial resistance, induced sputum, Moraxella catarrhalis, pneumonia, virulence genes

Introduction

Moraxella catarrhalis is one of the bacterial pathogens associated with childhood pneumonia, but its clinical importance is not clearly defined. Therefore, this study aimed to investigate the microbiologic and virulence characteristics of M. catarrhalis isolates obtained from children with pneumonia in Lusaka, Zambia.

Methods

This retrospective, cross-sectional study analyzed 91 M. catarrhalis isolates from induced sputum samples of children less than 5 years of age with pneumonia enrolled in the Pneumonia Etiology Research for Child Health study in Lusaka, Zambia between 2011 and 2014. Sputum quality was assessed using the Bartlett score, and only sputum specimens of high bacteriological quality were analyzed. Bacteria identification and virulence genes detection were performed by PCR and DNA sequencing, while antimicrobial susceptibility testing was determined by the Kirby–Bauer method.

Results

All the M. catarrhalis isolates were obtained from good-quality sputum samples and were the predominant bacteria. These isolates harbored virulence genes copB (100%), ompE (69.2%), ompCD (71.4%), uspA1 (92.3%), and uspA2 (69.2%) and were all –lactamase producers. They showed resistance to ampicillin (100%), amoxicillin (100%), trimethoprim-sulfamethoxazole (92.3%), ciprofloxacin (46.2%), chloramphenicol (45.1%), erythromycin (36.3%), tetracycline (25.3%), cefuroxime (11.0%), and amoxicillin-clavulanate (2.2%), with 78.0% displaying multi-drug resistant phenotype but all susceptible to imipenem (100%).

Conclusions

This study showed that M. catarrhalis isolates were the predominant or only bacterial isolates from the sputum samples analyzed. The isolates harbored genes encoding virulence factors and were all –lactamase producers. The findings provide supportive evidence for the pathogenic potential role of this bacterium in pediatric pneumonia. High multidrug resistance was also observed amongst the isolates, especially with ampicillin, amoxicillin, and trimethoprim-sulfamethoxazole. This presents very limited treatment options for children with pneumonia, which can result in the affected patients not responding to standard treatment, leading to prolonged illness, increased healthcare costs, and risk of death.

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CANCER EPIDEMIOLOGY AND HISTOPATHOLOGY PROFILE OF GYNECOLOGICAL CANCERS AT THE REGIONAL HOSPITAL OF BAFOUSSAM (WEST REGION OF CAMEROON), OCTOBER 2019 - JULY 2023.

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Keywords

Cancer, Epidemiology, Histopathology profile, Gynecological cancers, Cameroon.

Introduction

Background: Cancer is a major public health problem in sub-Saharan Africa. Because of the haphazard or absence of cancer data in the region and Cameroon in particular, cancer control programs and the provision of early detection and treatment services are limited despite this increasing burden. The aim of this study was to determining the epidemiological and the histopathological profile of gynecological cancers at the Bafoussam Regional Hospital.

Methods

Methods: A descriptive retrospective study of 690 cancer cases over a period of 46 months, from October 2019 to July 2023 at the histopathology laboratory of the Bafoussam Regional Hospital was carried out. Sampling was non-probabilistic, consecutive and exhaustive of all histologically proven in-situ or invasive cancer cases. Data was analyzed using SPSS version 22.0

Results

Results: Of the 2635 specimens received within this period, 690 cases of cancer were recorded for an overall frequency of 26.2% and an annual incidence of 172.5 cases on an average. There was a trend suggesting an increase annual frequency over time. Female cancer represented 77.1% while male cancer represented 22.9%. Female genital/breast cancers with 390 cases were most frequent with an overall frequency of 56.5% while endocrine gland cancers with 18 cases were the least frequent (2.6%). These patients were on average 51.6 ± 13.7 years old. Of the female genital/breast cancers, the cervix was the most frequent location with 210 cases (53.8%) while the vagina was the least affected with 3 cases (0.8%). Histologically, cervical, vulvar and vaginal cancers were predominantly Invasive Squamous Cell Carcinoma, breast cancers; Invasive Ductal Carcinoma, uterine body cancers; Choriocarcinoma while ovarian cancers; Cystadenocarcinoma.

Conclusions

Female genital/breast cancers are common in Bafoussam, cervical cancer being most prevalent. Histologically, cancers of epithelial origin are most frequent. Because of this high prevalence, cancer prevention and treatment services should be strengthened in Cameroon.

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Ethical issues in genomic research involving people with Intellectual Disability in Kenya

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Keywords

Intellectual disability, ethics, genomic research, ethical issues

Introduction

Neuropsychiatric disorders such as Intellectual disability (ID) affect both children and adults with implications for the caregivers and health system. Investigating the role of epigenetics in neuropsychiatric disorders is currently attracting attention in neurogenomic studies. There are ethical and social-cultural issues associated with involving people with ID in genomic research including ownership of genetic materials. Participants with ID are considered vulnerable population due to their limited decision-making capacities depending on severity of ID; therefore, raising concerns on ability to consent, and guardianship.

In this study we aimed to investigate and establish the ethical arguments for and against involving this 'vulnerable population' in genomic research, emergent social-cultural issues and how best these can be addressed.

Methods

Embedded within two Neurogenomic studies at Kilifi, the study draws on qualitative research methods and ethical principles to frame thematic analysis and interpretation of findings. We conducted 19 in-depth interviews with research staff (n=4) and caregivers (n=15) of people with ID and three focus group discussions with study staff (n=12) and community engagement team members (n=6). Data was organized in NVivo software and thematic analysis is ongoing.

Results

Participants highlighted the importance of involving people with ID in genomic research because they feel valued and represented. Whilst the current protective status of researchers and reviews systems was appreciated, there was a concern that this is making the population more vulnerable. Most ethical issues identified related to communication and consent, appropriate benefits for participants, levels of ancillary care that need to be provided to participants, their carers and the community whilst participating in research. Socio-cultural concerns included stigma faced by people with ID in the community.

Conclusions

Whilst genetic research is important in this group of participants, there's further need to ensure that challenges in communicating research are tackled while being aware of the socio-cultural concerns that arise.

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KNOWLEDGE, ATTITUDE, AND PERCEPTIONS OF MEDICAL STUDENTS TOWARDS MENTAL HEALTH AT A UNIVERSITY IN UGANDA

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Keywords

mental health, medical school, Uganda, knowledge, attitudes, Perceptions

Introduction

The global prevalence of mental illness among medical students is high. In Uganda, concerning statistics reveal 1 in 5 medical students are depressed, 54.5% burnout and 57.4% are stressed. This is attributable to inadequate mental health awareness hindering help-seeking. Information gaps persist regarding knowledge, attitude, and perceptions of medical students towards mental health in Uganda. This study aimed to determine the level of knowledge, attitude, and perceptions towards mental health illness and associated factors among medical students in Uganda.

Methods

A cross-sectional quantitative study encompassed 259 undergraduate medical students from a public university, registered for the 2020/2021 academic year, with valid university IDs. Convenience sampling was used to get study participants. Data was collected using a self-reported semi-structured online questionnaire adapted from prior analogous research capturing information on knowledge, attitude, and perceptions toward mental health. Descriptive statistics summarized numerical and categorical data. Knowledge, attitude, and perception scores were calculated based on participant responses. Linear regression analysis determined the factors associated with knowledge, attitude, and perception.

Results

In the study, 41.71% reported mental illness, 62.09% had affected peers yet 13.27% used university services. 77.72% had high mental health knowledge correlating with formal education. However, negative attitudes were prevalent at 50.71% with males being more favorable. Negative perceptions existed among 53.08%, reducing without mental illness history. Year 4 students saw significant knowledge increase (-=1.50 [CI=0.46–2.54], p=0.005), whereas perceptions worsened with mental illness history (- = -4.23 [CI = –7.44–1.03], p=0.010). There was a significant correlation between perception and attitude, but not between attitude and knowledge.

Conclusions

Medical students have knowledge but negative attitudes towards mental illness. Early mental health education and improving their school experience is important. Findings inform interventions and policies, advancing mental health awareness for their benefit and society.

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Stigma among Sudan Ebola Virus Disease survivors in Mubende and Kassanda Districts, Uganda, 2022

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Keywords

Sudan Ebola Virus Disease, Disease outbreaks, Stigma, Survivors, Uganda

Introduction

On September 20, 2022, Uganda declared a Sudan Ebola Virus Disease (SUVD) outbreak in Mubende District. The outbreak eventually spread to 8 other districts through September-November 2022. Ebola survivors often experience stigma in multiple formats, including felt stigma, enacted stigma, and structural stigma. We examined the types of stigma experienced by survivors and their household members and its effect on their well-being to inform ongoing interventions.

Methods

A qualitative study was conducted in January 2023 in Mubende and Kassanda Districts. We conducted interviews with 10 SUDV survivors, 10 household members of SUDV survivors, and 10 key informants (district officials and health workers in the affected communities). Interviews were recorded, transcribed, and analyzed thematically.

Results

Survivors reported experiencing isolation and rejection by community members, as well as loss of businesses or jobs. They reported being denied goods at shops and, when their purchases were accepted, their money was collected in a basket and disinfected. Due to this enacted stigma, survivors resorted to self-isolation. Educational institutions denied students from affected homes access to school, while some parents stopped sending children to school due to verbal abuse from students and teachers. Prolonged EVD symptoms and additional attention to survivors (home visits by health workers, public distribution of support items, and conspicuous transport from home to the survivor's clinic) aggravated both felt and enacted stigma. Despite a number of community engagement activities to reduce stigma, survivors were still considered a threat to the community.

Conclusions

Survivors experienced felt stigma, enacted stigma, and structural stigma that persisted even after implementation of control measures. Strengthening community engagement to counteract stigma, rethinking response activities that aggravate stigma, management of long-term SUDV symptoms for survivors, integrated response interventions by partners, private distribution of support items, and increasing awareness and sensitization through video messages could reduce stigma among the SUDV survivors.

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Psychometric properties of Patients' Health Questionnaire Assessed on Obstetric Fistula Patients in Northwestern, Nigeria

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Keywords

Obstetric fistula; Patients' health questionnaire; Psychometric properties; Mental health

Introduction

Nigeria is among the highest contributor to global prevalence of obstetrics fistula (OF) and weak health care policies and services have left the victims reeling in untold psycho-social and physical morbidities. This study was aimed at assessing the psychometric properties of a globally used Patients' Health Questionnaire (PHQ-9) among these patients.

Methods

A descriptive cross-sectional study design was employed to study the fertility desires, mental health and patients' quality of life among women with obstetric fistula in three selected OF centers in Northwestern region of Nigeria. Using two-stage sampling technique four hundred twenty (420) OF patients were recruited into the study. Maximum likelihood (ML) factor analysis was deployed to produce latent factors from the responses to the PHQ-9 scale, internal reliability and construct validity were determined by Cronbach alpha values while comparative mean analysis was used to validate standardized scores of the derived PHQ-9 scale factors against socio-demographic and obstetric characteristics.

Results

Mean age and standard deviation of respondents were 26.4±8.4 years as 60% aged between 20-25 years and 73.6% were polygamous. Three factors of somatic (r= 0.72-0.82; ⍺=0.86), non-somatic (r= 0.64-0.76; ⍺=0.77) and affective (r= 0.64-0.96; ⍺=0.74) constructs emerged from the ML factor analysis. Patients of ages 20-25 years, divorced/single and widows, the formally educated and farmers significantly differed with high scores of the affective construct of the PHQ-9 scale. Those who had more than four pregnancies and greater than a single stillbirths significantly differed with affective symptoms (0.29±0.90; 0.69±0.9 The 15-17 year olds at first birth and those who waited more than ten years for OF surgical repairs differed with non-somatic symptoms' construct of the PHQ-9 scale (0.21±1.04; 0.31±0.87) significantly differed with affective factors.

Conclusions

The PHQ-9 instrument exhibited possibility of being used to assess the quality of OF patients' mental health.

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Prevalence and determinants of periodontitis in subjects followed for knee osteoarthritis at the Douala General Hospital (Littoral, Cameroon)

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Keywords

Gonarthrosis, periodontitis, prevalence and determinants, Douala General Hospital.

Introduction

Knee osteoarthritis (KOA) is the location to the knee of osteoarthritis, a degenerative rheumatic disease. Periodontitis is an infection of the tissues supporting the teeth, leading to significant tooth loss. Studies suggest an association between KOA and periodontitis, with the prevalence of periodontitis increasing with the severity of KOA.

Objectives: To determine the prevalence and distribution of periodontitis and the association between the severity of KOA and periodontitis in subjects living with KOA.

Methods

This is a two-part cross-sectional study, conducted at the outpatients consultation of the Rheumatology Unit of the Douala General Hospital, from October 2022 to June 2023, including subjects over 30 years of age with KOA according to the radiological criteria of Kellgren and Lawrence (K-L). Data were collected using a questionnaire, an endo-buccal examination grid, radiological cliches and medical records. A multivariate logistic regression analysis was performed, including the relevant variables in the bivariate analysis. $p<0.05$ was considered significant.

Results

We included 253 participants (201 women) with a median age of 63 (54-70) years. The median site of pain and the mechanical schedule were the most frequently encountered. The mean Lequesne index was 12.25 ± 5.03. K-L grade 2 was predominant (61.7%), as was tri-compartmental KOA (85.4%). The quality of oral hygiene was average in 50.2% of our participants. Brushing methods were poor in more than half (59.7%) of our population. The prevalence of periodontitis was 62.5%. Periodontitis was significantly associated with radiological Kellgren and Lawrence grade 4 (OR: 5.39 [1.27-28.98]; p=0.03), poor oral hygiene (OR: 34 [7.46-277.71]; p<0.001), dental visits [in case of problems] (OR: 8.54 [3.09-28.58]; p<0.001) and brushing time (OR: 21.93 [5.66-123.24]; p<0.001).

Conclusions

Periodontitis is frequent among patients with KOA and associated with the severity of KOA and poor oral hygiene.

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PREVALENCE AND CORRELATES OF DEPRESSION AND ANXIETY DISORDERS AMONG PERSONS WITH TYPE 2 DIABETES MELLITUS AT AHMADU BELLO UNIVERSITY TEACHING HOSPITAL SHIKA, ZARIA.

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Keywords

Depression, Anxiety disorders, Medication adherence, Type 2 Diabetes Mellitus, Consultation Liaison

Introduction

Depressive and anxiety disorders frequently co-occur with Type 2 Diabetes Mellitus, leading to poor glycaemic control and quality of life through complex biopsychosocial mechanisms. A dual diagnosis of chronic medical and mental health conditions reduces the probability of early recognition and intervention for either. The study aimed at assessing the prevalence and correlates of depressive and anxiety disorders among persons with Type 2 Diabetes Mellitus in a tertiary hospital in north-west Nigeria

Methods

A hospital based cross-sectional study was conducted among 370 adult respondents with Type 2 Diabetes Mellitus at the endocrinology clinic of Ahmadu Bello University Teaching Hospital. A systematic sampling technique was employed to recruit participants. Data was collected using a sociodemographic questionnaire, the Mini International Neuropsychiatric Interview (MINI) to screen and diagnose depression and anxiety, and the Morisky Medication Adherence scale to assess medication adherence. Data were analysed with the SPSS Version 25

Results

The mean age of participants (133 males and 237 females) was 48.09±11.8 years. The prevalence of major depressive disorder was 46.5%. Of the 42.2% that had anxiety disor-

ders, 46.7% had generalized anxiety disorder, 51.9% panic disorder, 30.1% agoraphobia, 21.8% social anxiety, 39.1% posttraumatic stress disorder, and 51.9% obsessive-compulsive disorder. 31.4% had a co-existing depression and anxiety disorder. About four in ten of the respondents reported medication non-adherence. While absence of support was an independent predictor for depression and anxiety disorder, those without diabetes complications were less likely to develop depression or anxiety.

Conclusions

The study shows a high burden of depressive and anxiety disorders among patients with Type 2 Diabetes Mellitus, associated with poor medication adherence and outcome. Physicians need to pay more attention to psychological distress associated with chronic medical conditions to improve treatment outcomes and quality of life.

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Prevalence and associated factors of Chronic Obstructive Pulmonary Disease among adults in Neno District, Malawi: A cross-section analytical study

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Keywords

Chronic Obstructive Pulmonary Disease, Prevalence, Spirometry, Malawi

Introduction

Chronic obstructive pulmonary disease (COPD) continues to pose a global public health challenge. However, there is a scarcity of literature on the burden of COPD in rural Sub-Saharan Africa (SSA). Therefore, we assessed the prevalence and associated factors of COPD among adults in Neno, Malawi. .

Methods

We conducted a population-based analytical cross-sectional study in Neno District between December 2021 to November 2022. Using multi-stage sampling technique, we included 525 adults ≥ 40 years of age. We interviewed all participants using the IMPALA questionnaire and underwent spirometry according to American Thoracic Society (ATS) guidelines. We defined COPD as a post-bronchodilator FEV1/FVC <0.70. We cleaned data using Excel and analysed using R software. We used descriptive statistics and logistic regression analysis and considered a p-value of < 0.05 to be statistically significant.

Results

Out of 525 participants, 510 participants were included in the final analysis. Fifty-eight percent of participants were females (n=296), and 62.2% (n=317) were between age range 40-49 with median (IQR) age of 46 (15). Of the smokers, 15.1% (n=77) were current smokers and 4.1% (n=21) had a history of pulmonary tuberculosis (PTB). Cough was the most commonly reported respiratory symptom (n=249, 48.8%). The prevalence of COPD was 10.0% (n=51) and higher (15.0%) among males compared to females (6.4%). Factors significantly associated with COPD were age 60 years and above (adjusted odds ratio [aOR] = 3.27, 95% CI: 1.48-7.34, p= 0.004), ever smoked (aOR = 6.17, 95% CI:1.89-18.7, p= 0.002), current smoker (aOR = 17.6, 95% CI: 8.47-38.4, p <0.001) and previous PTB (aOR = 4.42, 95% CI: 1.16-15.5, p= 0.023).

Conclusions

The prevalence of COPD in rural Malawi is high especially among males. Associated factors include older age (60 years and above), cigarette smoking and previous PTB. Longitudinal studies are needed to better understand disease progression, especially in rural Africa.

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Effects of postpartum anaemia, iron deficiency and iron deficiency anaemia on maternal depression and bonding quality: a longitudinal observational study of Malawian women, July 2021

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Keywords

anaemia, iron deficiency, iron deficiency anaemia, depression, bonding

Introduction

Although a robust body of literature exists on the magnitude, causes and impact of antenatal anaemia on maternal wellbeing and neonatal outcome, little is known of the same condition during the postpartum period. Therefore, this study aims at determining the magnitude and effect of anaemia, iron deficiency (ID) and iron deficiency anaemia (IDA) on maternal depression and bonding over the first six-months postpartum.

Methods

Using a longitudinal observational quantitative study design, we recruited 745 women who were previously enrolled in a randomised control trial and an observational cohort study. Assessments on hemoglobin and ferritin levels, C-reactive proteins, depressive symptoms, bonding quality and common self-reported morbidities were done at childbirth, one-month, three-month and six-month postpartum. We examined the effect of anaemia, ID and IDA on depression and bonding difficulties over the first six-month postpartum using a mixed-effect logistic regression analysis with a random intercept at individual level adjusted for both maternal and infant characteristics.

Results

The prevalence of anaemia was 26.7% (95% CI:23.5% - 30.0%), 30.2% (95% CI:26.8% - 33.5%), 26.5% (95% CI:23.2% - 29.7%) and 22.5% (95% CI:19.4% - 25.6%) while ID was present in 154 (29.7%), 99 (20.4%), 86 (18.5%) and 100 (22.4%) women at childbirth, one-month, three-month, and six-month postpartum respectively. Women with anaemia, ID and IDA had nearly 2.4 times (aOR: 2.39, 95% CI: 1.60-3.57, p<0.001), 1.69 times (aOR: 1.69, 95% CI: 1.09-2.61, p=0.018) and 2.38 times (aOR: 2.38, 95% CI: 1.37-4.14, p=0.002) the odds of being depressed over six-months postpartum. No statistically significant effect was observed on bonding quality.

Conclusions

Anaemia, ID and IDA were more prevalent and negatively impacted on maternal psychological wellbeing but not bonding quality. We therefore encourage health practitioners to adhere to the World Health Organisation recommendation on iron supplementation to all postpartum women until three-months postpartum to alleviate negative consequences

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Glycaemic control among type 2 diabetes patients in sub-Saharan Africa from 2012 to 2022: A Systematic Review and meta-analysis

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Keywords

systematic review, meta-analysis, factors, glycaemic control, type 2 diabetes, sub-Saharan Africa

Introduction

Glycaemic control in patients with type-2 diabetes is poor in most countries in sub-Saharan Africa. Gaining an understanding of the factors influencing glycaemic control is important to develop interventions. We carried out a systematic review to determine the prevalence and factors associated with glycaemic control in sub-Saharan Africa to inform the development of a glycaemic control framework in the Democratic Republic of the Congo.

Methods

We searched five databases using the following search terms: type-2 diabetes, glycaemic control, and sub-Saharan Africa. Only peer-reviewed articles from January 2012 to May 2022 were eligible. Two reviewers, independently, selected articles, assessed their methodological quality using Joanna Briggs checklists, and extracted data. A meta-analysis was performed to estimate the prevalence of glycaemic control. Factors associated with glycaemic control were presented as a narrative synthesis due to heterogeneity as assessed by the I2.

Results

A total of 74 studies, involving 21,133 participants were included in the review. The pooled prevalence of good glycaemic control was 30% (95% CI:27.6-32.9). The glycaemic con-

trol prevalence ranged from 10-60%. Younger and older age, gender, lower income, absence of health insurance, low level of education, place of residence, family history of diabetes, longer duration of diabetes, pill burden, treatment regimen, side effects, use of statins or antihypertensives, alcohol consumption, smoking, presence of comorbidities/complications, and poor management were associated with poor glycaemic control. On the other hand, positive perceived family support, adequate coping strategies, high diabetes health literacy, dietary adherence, exercise practice, attendance to follow-up, and medication adherence were associated with good glycaemic control.

Conclusions

Suboptimal glycaemic control is pervasive among patients with type-2 diabetes in sub-Saharan Africa and poses a significant public health challenge. While urgent interventions are required to optimize glycaemic control in this region, these should consider sociodemographic, lifestyle, clinical, and treatment-related factors.

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Health-facility readiness to offer high-quality non-communicable disease care in Kenya: an assessment to inform Universal Health Coverage Reforms

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Keywords

Non-communicable diseases, universal health coverage, assessment, hypertension, diabetes

Introduction

Noncommunicable diseases (NCD) cause four in every ten deaths in Kenya; this is projected to increase to 50% of deaths by 2030. Households affected by NCDs are 30% more likely to be impoverished due to catastrophic health expenditure. Consequently, NCDs are at the center of the ongoing Universal Health Coverage reforms in Kenya. Availability, accessibility, and equity are key components of UHC. We assessed health facilities in Kenya, to determine readiness to support high-quality hypertension and diabetes care in the context of UHC.

Methods

This was a cross-sectional study conducted in 440 public health facilities of all Kenya Essential Package for Health (KEPH) levels, across the 47 counties. Using healthcare workers interviews and records review, we assessed domains across health systems strengthening pillars, including service availability (screening, diagnosis, follow-up, and referral), health products and technologies and health formation systems. Descriptive analysis was conducted on each of the domains assessed.

Results

Over 90% of facilities offered diabetes and hypertension services (432/440); majority of these services are offered at general outpatient clinics (hypertension 90%, diabetes 89%). Blood pressure is checked in 91% of the service points while blood sugar is checked in 40% (symptomatic patients only). Only 28% (123/440) of facilities had HBA1C testing available. Approximately 77% of facilities reported stock-out of diabetes medications and 69% for hypertension medications in the previous three months; on average the stock-outs lasted four months. A quarter of the facilities had the relevant data tools; reporting into the Kenya Health information system was 60%. Thirty nine percent of patients with diabetes and 57% of those with hypertension were uncontrolled on the fifth visit after diagnosis.

Conclusions

To achieve UHC in hypertension and diabetes care, we recommend optimizing opportunities for diagnosis in health facilities, improving quantification and forecasting of commodities and robust health information systems to track patients longitudinally.

862

Healthcare Workers' Acceptability and Willingness to Implement the Screening Brief Interventions and Referral to Treatment (SBIRT) in Health Facilities, Lusaka District

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Keywords

SBIRT, Alcohol abuse, Healthcare Worker, Health facility

Background

Alcohol abuse, a major public health problem worldwide, is a contributing factor in over 200 illness and injury disorders. Institutionalizing SBIRT in health facilities is key in addressing alcohol abuse. Thus, the aim of this study was to assess the acceptability and willingness of healthcare workers (HCWs)to implement the SBIRT in health facilities (HFs).

Methodology

This study, conducted in 2022, used a qualitative approach. It was conducted in 17 primary HFs within Lusaka District. In-depth interviews with 4 to 5 participants were conducted in each supported HF. The interviews were taped, transcribed, and verbatims translated. Analysis of the data collected was done using thematic analysis in NVIVO version 12.0.

Ethical approval was obtained from UNZA Biomedical Research Ethics Committee (UNZABREC Ref-3581-2022) and the NHRA.

Results

This study enrolled 84 HCWs with median age 35 (IQR: 30 – 40), mostly female (67.9%). The findings revealed a positive perspective and attitude of implementing SBIRT. Out of 84 participants, 96.4% stated that SBIRT led to a positive change in how they interacted with their clients, and 98.8% stated that it garnered a positive response from clients. The participants stated that SBIRT implementation raised confidence in addressing alcohol abuse (94.0%), and 98.8% recognized potential benefits of SBIRT. Thus, the HCWs intended to recommend SBIRT to fellow professionals dealing with alcohol abuse (92.9%).

Conclusion

The implementation of the SBIRT was highly accepted, and the participants were ready and willing to provide SBIRT services to their clients and alcohol abusers. This study underscored transformative impact that SBIRT had on HCWs' attitudes, boosting their confidence and commitment to helping individuals struggling with harmful use of alcohol seek appropriate assistance.

980

Gaps in hypertension care among hypertensive patients attending Thika Level V Hospital in Kenya: A case-control study, April 2023

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Keywords

Hypertension care, complications, control, follow-up

Introduction

Non-communicable diseases represent the largest and growing burden of diseases in Kenya. Hypertension is a common long-term disease. It causes mortality and morbidity from various complications. To prevent this, there is a need to offer appropriate evidence-based management. The purpose of this study was to assess gaps in care among hypertensive patients.

Methods

we conducted household as well as health facility surveys, focused group discussions, and interviews to identify gaps in hypertension care. In both household and health facility surveys we randomly sampled 210 patients older than 30 years, hypertensive for more than 2 months, on treatment and followed-up at Thika level Hospital. Stratified randomization was further used to assign hospital-based follow-up (control group) and home-based follow-up (interventional group). The participants completed questionnaires between February and April 2023.

Results

All the participants had hypertension with a systolic blood pressure greater than 140mmHg and a diastolic blood pressure greater than 90mmHg. Among them 132 participants (63%) also had diabetes with no other comorbidities. Due to the uncontrolled blood pressure the following gaps in management were identified; Patient-related factors included non-adherence necessitated by poor understanding of the condition and management, fear of drug dependence, cost of medication, and inaccessibility to hospitals. Healthcare providers' factors; poor choice and combinations of drugs with sub-optimal dosages, inertia, poor understanding of the clinical guidelines, lack of screening and monitoring patients for complications, and not optimizing non-pharmacological management. Healthcare factors; unavailability of medications, giving medical appointments at a time that is not convenient for patient's working time.

Conclusions

An integrated team-based primary healthcare approach for hypertension management and follow-up of patients should be developed in order to achieve blood pressure control to prevent complications.

1055

Evaluation of a school-based intervention to reduce sodium intake and blood pressure of young adolescents and their parents: a cluster-randomised controlled trial in rural and urban Malawi

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Keywords

Malawi, blood pressure, sodium intake, cluster-randomised controlled trial, school health

Introduction

Sodium intake and blood pressure are increasing in sub-Saharan Africa, but there is limited contextual evidence for public health interventions that are effective at addressing this challenge. Between 2019-2021, we assessed the effect of a novel school-based intervention on sodium intake and blood pressure amongst young adolescents (age 11-14 years) and their parents or caregivers.

Methods

In this cluster-randomised controlled trial, 26 primary schools in Malawi were randomly assigned (1:1) to maintain the routine curriculum (control) or a 10-week school-based series of lessons and participatory activities delivered to adolescents in standard 6, designed to promote the reduction of sodium intake within their household. The co-primary outcomes were change in sodium intake (assessed by 24 hour urine collection) and blood pressure of adolescents at 12 weeks. Secondary outcomes were change in sodium intake and blood pressure of parents or caregivers at 12 weeks, and change in blood pressure of all participants at 52 weeks. Household salt usage was assessed using a modified dietary questionnaire. Analysis was by intention-to-treat. This trial is registered at ISRCTN 13909759.

Results

A total of 732 randomly selected adolescents, and 1,236 adult participants were surveyed at baseline. Participation by adolescents was high, with overall attendance of 87% to intervention activities. After 12 weeks, no significant intervention effect was observed on the sodium intake of adolescents (adjusted difference= -0.17g/24h, 95% CI -0.63–0.29, p=0.44) or parents or caregivers (adjusted difference= -0.59g/24h, -0.59–0.16, p=0.26); or on the blood pressure of adolescents or adults at either 12 or 52 weeks. However, there was a significant reduction in reported household salt usage at 12 weeks (-4.7g, p<0.00).

Conclusions

School-health interventions are a popular, pragmatic and efficient approach for the delivery of health education to communities; but were not effective at reducing sodium intake and blood pressure in this setting.

1167

Demographic disparities of cumulative occurrence of Non-Communicable Diseases (NCDs) and correlates in Uganda: Implications for public health interventions

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Keywords

Non-Communicable, NCDs, Public, Health, Demographic, Occurrence

Introduction

Despite significant endeavors to ascertain the prevalence of Non-Communicable Diseases (NCDs) in Uganda, little attention has been directed towards assessing the individual burden of NCDs, delineating the extent of affliction within distinct demographic cohorts.

The objective of the study was to establish the influence of sex and age on cumulative NCD occurrence defined as the number of NCDs an individual endures.

Methods

A cross-sectional study design was used and data from the most recent Uganda National Household Survey (UNHS 2019/2020) was used. The study employed ordered logistic regression on 43,379 participants to answer the study objective at 5% significance level. In addition to sex and age,

other socio-economic and lifestyle variables were controlled for in the study, which included marital status, education level, place of residence, loan status, smoking, taking drugs and alcoholism.

Results

Notably, demographic variables significantly influenced the likelihood of higher NCD counts ($p < 0.05$). Ugandan females exhibited greater odds of having more NCDs compared to Ugandan males [OR 2.13, C.I 1.904 - 2.385]. Age also showed a positive correlation with increased NCD numbers [OR 1.06, C.1 1.052 - 1.059). All socio-economic and lifestyle variables were found to be influential ($p < 0.05$).

Conclusions

These findings hold vital implications for public health interventions. Strategies to mitigate NCD burdens should acknowledge the increased vulnerability of females and the impact of aging regardless of current age. Regular health screenings and personalized interventions are crucial for early NCD detection and management among females at all ages.

These insights offer a foundation for informed policy-making and resource allocation to counter the increasing incidence of NCDs. By customizing interventions for males and females as well age, public health initiatives can effectively reduce individual NCD burden and improve overall well-being.

1631

Challenge de la disponibilité des psychiatres en Afrique subsaharienne et faiblesse de l'offre en santé mentale : cas de la communauté économique et monétaire de l'Afrique centrale (CEMAC).

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Keywords

santé mentale, psychiatre, ressources humaines, Afrique subsaharienne, Afrique centrale

Introduction

Longtemps négligée la santé mentale connaît depuis quelques années un regain d'intérêt . De nombreux troubles mentaux sont considérées comme des problèmes de santé publique notamment la dépression , les suicides , les conduites addictives, les traumatismes psychologiques. Les problèmes de santé mentale constituent le premier motif de consultation en médecine générale. Face à ces besoins , l'offre de santé est quasi inexistante et cela principalement en raison du faible nombre de professionnels qualifiés. Ce travail s'est proposé de faire le recensement des psychiatres exerçant au niveau de la CEMAC afin d'en évaluer les effectifs, d'en connaître le profil socio-démographique et de servir de base à une meilleure politique de ressources humaines.

Methods

Il s'est agi d'une étude descriptive transversale de type qualitative par administration d'un questionnaire standardisé , pendant un mois, en 2023. Les données ont été traitées en utilisant le logiciel R studio. La moyenne, médiane et écart-type ont été calculées pour les variables quantitatives, les fréquences pour les variables qualitatives.

Results

28 psychiatres exercent au niveau de la CEMAC avec une prépondérance masculine (19 hommes et 09 femmes) et une moyenne d'âge de 42,7 ans (± 9, 1 ans). Il s'agit tous de psychiatres d'adultes Deux sont spécialisés en addictologie et un seul est spécialisé en pédopsychiatrie.

La quasi-totalité ont un mode d'exercice de type public (27 sur 28) et tous exercent en milieu urbain. le ratio moyen de psychiatre est de 0,1(± 0,1) pour 100.000 habitants en zone CEMAC.

Conclusions

Les effectifs de psychiatres en zone CEMAC sont très faibles comparativement aux besoins de santé. Les ratios retrouvés sont faibles comparativement aux normes internationales. Une politique publique hardie de formation des ressources humaines en santé mentale est urgente. Des mesures incitatives semblent indispensables. L'avenir psychique des populations en dépend.

1738

Africa Burden of Diseases from 1990 to 2019: An analysis of the Global Burden of Disease study 2019

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Keywords

Africa, Burden of Diseases, non-communicable diseases, infectious diseases

Introduction

Africa has made progress on universal health coverage but challenged with the double burden of diseases. We assessed the burden of diseases for 54 Africa Union member states in 2019 and its evolution from 1990 to 2019 and compared among the countries.

Methods

We used specific Global Burden of Diseases (GBD) metrics: life expectancy (LE), healthy life expectancy (HALE), years of life lost (YLLs), years lived with disability (YLDs), and disability-adjusted life years (DALYs) with their 95% uncertainty interval (95%UI). We compared age-standardized metrics for AU member countries for both sexes and also between 1990 and 2019. We also described the specific causes of these different metrics.

Results

Life expectancy at birth in Africa improved over time from 55·97 (95%UI: 55·09 – 56·77) years in 1990 to 65.84 (64.25 – 67.23) in 2019. Life expectancy was highest in Tunisia, Algeria, Cape Verde, Libya and Morocco while lowest in Central Africa Republic, Lesotho, Eswatini, Mozambique and Somalia. HALE at birth in Africa increased from 48.86 (46.69 – 50.87) to 57·4(54·69 – 59.92). In Africa, DALY per 100.000 population decreased from 76,576.64 (72 149.19-81,432.45) in 1990 to 48,152.2 (43,342.06–53,864.28) in 2019. Maternal and neonatal disorder, respiratory tract infection and tuberculosis, enteric infections, neglected tropical diseases and malaria, cardiovascular diseases were the five leading causes of YLLs in 2019. Mental disorders, musculoskeletal disorders, Neurological disorders and nutritional deficiencies were among the five leading causes of YLDs.

Conclusions

The results highlight a clear trend of improvement in the health status in Africa. The health policy makers need to devise interventional strategies to reduce the silent burden of non-communicable diseases and address the unfinished agenda of infectious diseases, with specific attention to causes such as maternal and neonatal disorder, respiratory tract infection and tuberculosis, enteric infections, cardiovascular diseases, mental disorders and nutritional deficiencies.

1923

DELAY PATTERNS AND ASSOCIATED FACTORS AMONG GASTRIC CANCER PATIENTS IN ETHIOPIA

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Keywords

Delay, patient delay, diagnosis delay, Treatment delay, gastric cancer

Introduction

Gastric cancer is 6th and 5th most common cancer in incidence and mortality respectively globally and 5th most common cancer in our country by incidence. In developed countries like Japan the diagnosis of gastric cancer is made early and has better prognosis but in developing countries like Ethiopia majority of patients present late in advanced state and remain undiscovered even though they have questionable long-term symptoms like gastric pain, weight loss, anaemia, dysphagia, and vomiting. This study aims to asses the delay patterns and associated factors among gastric cancer patients in Tikur Anbesa Specialized Hospital, Ethiopia.

Methods

Methods: A retrospective study conducted which included 64 patients with biopsy-confirmed gastric cancer and who received definitive treatment at Tikur Anbesa Specialized Hospital from February 20, 2021, to March 25, 2023. Data was collected through an in-person interview, a telephone interview, and a chart review. SPSS software version 26 and the Mann-Whitney statistical test were used to verify associations between the time intervals of access to treatment and socioeconomic factors, clinical variables, and patient-reported reasons, adopting a 0.05 significance level.

Results

In this study, the mean length of patient delay was 106 days, the diagnosis delay was 318 days, and the treatment delay was 43 days. The average length of the total delay between symptom onset and definitive treatment was 467.42 days.

Greater length of patient delay in this study was correlated with lack of awareness, search for traditional alternatives, rural residence, and economic hindrances, and that of diagnosis delay is correlated with misdiagnosis.

Conclusions

Conclusion and recommendation: Delays among gastric cancer patients in our setting are much greater than those seen in other low-income countries. Patient delay and diagnosis delay have a lion's share in the breakdown of the delays in our setup, so long-term community-oriented interventional approaches are highly imperative.

1982

Enhancing pediatric cancer detection by building primary health worker capacity in the Central and West regions in Cameroon, 2022

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Keywords

pediatric cancer, early detection, primary healthcare, early warning signs

Introduction

Less than 30% of children survive cancer in low- and middle-income countries, compared to an 80% survival rate in high-income countries, with no/delayed diagnosis being a significant contributor to this inequity. Optimizing patient outcomes requires effective interventions to rapidly identify and refer children in these settings. We sought to improve pediatric cancer case finding by equipping primary health workers to identify early warning signs effectively.

Methods

In 2021, Cameroon National Committee for the Fight against Cancer (NACFAC) gathered experts to develop training materials on early warning signs of common pediatric cancers, leveraging local clinical experience and global publications. In early 2022, a 2-days workshop trained 10 mentors from pediatric cancer treatment hospitals, NACFAC and Ministry of Health. These mentors subsequently organized 5 one-day training sessions in each of the Central and West regions covering technical, policy and referral pathways on early warning signs of pediatric cancers. Over 110 front-line health workers from 57 Primary Health Care (PHC) facilities, including pediatricians, general practitioners and nurses were capacitated. Participants received training materials for use in their respective hospitals.

Results

Ten months after the training sessions we observed a nearly twofold increase in the monthly number of suspect cases referred to the treatment center for management, from 13 cases in June 2022 to 23 cases in March 2023. Majority (68%) of the 179 total referrals came from PHC facilities who received the training. Amongst the referred cases, 76% (136) were confirmed with a pediatric cancer diagnosis but only 35% (48) are reported to have started chemotherapy within a week.

Conclusions

This initiative demonstrates the impact of enhancing front-line health workers suspicion index on pediatric cancer as the training led to increased pediatric cancer case finding. Further discussions are also ongoing to refine the intervention's cost-effectiveness to ensure roll out and sustainable impact.

1991

The Braveheart Project: Effects of Community-Led Psychotherapy Sessions on Severity of Depression of Young Internally Displaced Persons in Northern Nigeria

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Keywords

Mental health, Depression, Internally displaced persons, Nigeria, Psychotherapy

Introduction

There are over three million internally displaced persons (IDPs) in Nigeria. Depression, a common mental health disorder, is four times more prevalent among young IDPs. This study, therefore, assessed the impact of community-led men-

tal health intervention on the prevalence and severity of depression among young IDPs in Northern Nigeria.

Methods

This study utilized a pretest-posttest design and was conducted among young IDPs residing in Durumi and New Kuchingoro IDP camps in Abuja, Northern Nigeria. The Brave Heart mental health intervention involving delivery of 18 sessions twice a week for nine months by trained community members (Community Mental Health Therapist). Young IDPs aged 10 to 24 years, who have resided in either of the camps for at least one year, and who could communicate in either English or Hausa were eligible to participate in the study. The Patient Health Questionnaire (PHQ-9) was used to assess the prevalence and severity of Depression among participants. Descriptive statistics was done using SPSS Version and Paired T-test was used to analyze for difference in scores between the baseline and endline.

Results

Out of the eighty-three (83) respondents in this study, some (43.4%) were between the age of 20-24 years and slightly above half (51.8%) were females. There is a significant difference in the level of depression between the baseline and endline (MD= 5.95181, p-value <0.001). An estimated 69% of the young IDPs demonstrated clinical improvement in depression symptom severity. There was significance improvement in the level of depression among the age (10-14 years) between the baseline and end line (MD = 5.600, p-value < 0.001); and females (MD = 5.349 p-value < 0.001).

Conclusions

This study establishes the efficacy of community-led intervention in alleviating the severity of depression among young internally displaced persons and should be replicated in other humanitarian and underserved communities.

2005

Assessing the utility of the Renal Angina Index in predicting the development of severe acute kidney injury in children admitted to the paediatric intensive care unit at the University Teaching Hospitals – Children's Hospital in Lusaka Zambia from October 2020 to January 2022

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Keywords

Acute kidney injury; Severe acute kidney injury; Renal angina index; KDIGO; Paediatric intensive care unit

Introduction

Acute kidney injury (AKI) is a sudden deterioration in renal function. AKI is common in critically ill children admitted to paediatric intensive care unit (PICU) and is associated with increased mortality, use of mechanical ventilation, and longer PICU stay. The burden of severe AKI (sAKI) in PICU has been poorly documented in sub-Saharan Africa, Zambia included. The concept of renal angina (RA) was proposed to assist in early detection of AKI. Renal angina index (RAI) combines risk factors for AKI and early signs of loss of function to identify patients at risk for subsequent sAKI.

Methods

This was an observational study conducted at University Teaching Hospitals-Children's Hospital. The study included all patients aged one month to 16 years admitted to PICU who did not have pre-existing sAKI. The calculated sample size was 118. Serum creatinine on admission was used to calculate RA for each patient, and a score of eight or greater wasconsidered positive. Patients were assessed for sAKI on day three using serum creatinine levels based on the Kidney Disease: Improving Global Outcome (KDIGO) 2012 criteria. Data was analyzed using SPSS and, p-value less than 0.05 was considered statistically significant.

Results

Median age of enrolment was 5.5 years (1.5–11.2) and prevalence of sAKI was 14.8% (n = 18). Development of sAKI was associated with longer duration of mechanical ventilation (3.17±3.59 days, p = 0.001) and higher mortality (38.9% vs 12.5%, p = 0.011). Positive RAI on day zero predicted day three sAKI with sensitivity 55.6%, specificity 85.6%, positive predictive value 40.0%, negative predictive value 91.8%, and area under the curve 0.77.

Conclusions

Severe AKI is prevalent in PICU and is associated with poor outcomes. RAI can be used to effectively rule out AKI in patients and, can lead to a change in the initial targets of fluid resuscitation.

2012

Integrating mental health services into HIV care using the Common Elements Treatment Approach in Western Uganda, June 2023.

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Keywords

HIV, mental disorders, integration, psychotherapy, mental health services, viral suppression,

Introduction

In Uganda, approximately 1.4 million people live with HIV, and those with HIV are three times more prone to mental disorders compared to those without HIV. Despite reaching the second HIV 95 target, Uganda faces challenges in viral suppression due to prevalent mental disorders with depression existing in 9 to 30% cases causing suboptimal ART adherence. 85% of mental illnesses remain untreated due to resource limitations and fragmented services. Jhpiego supported the Ministry of Health to integrate mental health services in three HIV care clinics in Western Uganda using the Common Elements Treatment Approach (CETA). CETA-trained providers screen, plan treatment and deliver psychotherapeutic care for mental illnesses.

Methods

35 multi-cadre health workers received an 11-day hybrid training plus mentorship, to deliver integrated mental health services for depression, anxiety, alcohol, and substance use. They were trained to provide group services including psychoeducation, wellness, screening, and referral, plus provision of 6-12 individualized psychotherapy sessions using cognitive-behavioral therapy techniques for moderate and acute cases. Data on HIV outcomes and mental illness symptoms was collected using HIV client cards and Client Monitoring Forms.

Results

Between August 2022 and June 2023, CETA services reached 1238 clients, including 61% (755) female, and 59% (735) HIV-positive, 85% (627) of whom received group services, while 15% (108) received individualized psychotherapy. Group services provided wellness skills and referred 17% (109) positively screened to individual psychotherapy. In individual psychotherapy, mental health outcomes included 52% recovery, 24% ongoing care, and 24% lost to follow-up. Within that period, individualized psychotherapy improved appointment keeping (65% to 94%) treatment continuity by 88% and attained 81.2% viral suppression among non-suppressing HIV-positive clients.

Conclusions

The integration of mental health into HIV care contributed to improvement in HIV treatment continuation, appointment keeping and viral load suppression. CETA is a workable model for integrating mental health into primary health care services.

2017

Adverse Event Following Immunization in children ≤5 years in Govan Mbeki Sub-District, Mpumalanga Province, August 2022

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Keywords

Vaccine, Adverse Event Following Immunisation, Mpumalanga Province

Introduction

Childhood immunization is estimated to prevent over 2.5 million childhood deaths each year. In South Africa, it is recommended that all hospitalization, deaths, and other severe unusual medical incidents occurring within a month of immunization must be reported. Two deaths of children after receiving immunization were reported on 14 August 2022 to the provincial surveillance officer. We report on Adverse Event Following Immunisation (AEFI) with rotavirus vaccine.

Methods

We reviewed tick registers, Road to Health Booklet and completed a case investigation form (CIF). A case of AEFI was defined as any child who died within 24 hours of receiving a childhood vaccine. Vaccine refrigerators in both facilities were assessed for cold chain compliance. An autopsy for one corpse was conducted by the sub-district surgeon on 14 July 2022.

Results

On 11 July 2022, 59 children received rotavirus vaccine from clinic A and clinic B. Two children aged 6 weeks old from clinic

A and 3 months old from clinic B in Govan Mbeki Sub-District died within 24 hours after receiving rotavirus vaccine. The administered vaccines had the same batch number wherein clinic B requested vaccines from clinic A as they were out of stock. Refrigerated vaccines were properly stored, and continuous temperature monitoring devices were used in both facilities, however, nothing was recorded in the temperature chart for July and August in both facilities. Both children had no comorbidities. Postmortem results for one child are still pending, the other child was buried before an autopsy could be conducted.

Conclusions

There was a delay in reporting the AEFIs to the next level for investigation. Daily temperature monitoring in health facilities was not consistently done and this may directly affect vaccine potency. We recommend continued training and support among healthcare professionals on EPI and cold chain guidelines.

2028

ASSESSING COMMUNITY KNOWLEDGE AND PERCEPTIONS TOWARDS GENDER-BASED VIOLENCE IN CROSS RIVER STATE, NIGERIA, MAY- JULY 2023

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Keywords

Gender-based violence, Youth-led violence, Culture, Social perception, GBV intervention

Introduction

Gender Based Violence (GBV) is increasingly prevalent in Cross River State, with spousal violence being the highest at 47.4%. This study aimed to determine community perceptions towards GBV amongst adults in Cross River State.

Methods

Using a cross-sectional descriptive study design, both qualitative and quantitative data were collected by survey, focus group discussion, and key-informant interviews. Relationship between variables was measured using chi-square with a p-value at 0.05 level of significance while thematic analysis was used for qualitative data. Ethical clearance was obtained from the Cross River State Ministry of Health's Ethical Clearance Committee.

Results

Of the 559 surveys done, 527(92.6%) were fully completed and used for the data analysis. The majority, 315(59.8%) were females, 184(35.0%) were 24-35 years old, 246 (46.7) were single, 299 (56.8) had completed secondary education, and 376 (71.3) were employed. There was significant relationship between knowledge level and sex, (-2 = 6.161), p= 0.046, LGA, (-2 = 59.419), p= 0.0001, educational level, (-2 = 16.661), p= 0.011 and type of employment, (-2 = 7.229), p= 0.027. Generally, 173(52.3%) of respondents had negative while 158(47.7%) had positive perceptions towards GBV interventions/prevention. Specifically, Ikom had 64% positive and 36% negative perceptions while Obanliku had 66.7% negative and 33.3% positive perceptions towards GBV interventions/prevention. Qualitative themes include youth-led violence, the limited scope of GBV knowledge, safe spaces, culture as a proponent of GBV, and cultural roles in GBV interventions and prevention.

Conclusions

Ikom and Obanliku had the highest discrepancy between positive and negative perceptions in comparison to all participating LGAs. The limited scope of GBV knowledge seems to affect respondents' perceptions towards interventions/prevention. There is a need to design youth-led community-participatory, culturally sensitive programmes to improve knowledge and perceptions towards addressing gender-based violence in Cross River State, Nigeria.

2048

Prevalence of diabetes mellitus and associated factors among HIV-positive patients at primary health care facilities in Harare, Zimbabwe

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Keywords

Keywords: Diabetes Mellitus; T2DM prevalence; HIV; non-communicable diseases; primary health care; Sub-Saharan Africa; Zimbabwe.

Introduction

Highly active antiretroviral therapy (HAART) has improved the life expectancy of people living with HIV (PLWH) but also increased the risk of chronic non-communicable diseases. Comorbid HIV and diabetes mellitus (DM) significantly increase cardiovascular disease and mortality risk.

This study aimed to determine the prevalence of diabetes mellitus (DM) among HIV-infected patients receiving primary health care services at Harare council clinics in Zimbabwe and to describe the characteristics and associated factors among patients with HIV-DM comorbidity in both rural and urban settings.

Methods

This cross-sectional observational study was conducted across eight primary care health facilities in Harare, Zimbabwe. Non-probability convenience sampling was applied to recruit 450 adult HIV-positive patients who can give consent, attending the facilities for ART between January 2022 and March 2023. Mixed methods were used to collect data and the data was analyzed using Stata version 17.

Results

Of the 450 participants recruited, 76.2% resided in urban communities and 23.8% in rural communities. The prevalence of DM was 14.9% among participants. The majority of participants were older than 35 years old (89.2%), employed (68.9%) and married (73.8%). A significantly greater number of individuals who were obese (BMI>30kg/m2) had DM comorbidity. Furthermore, PLWH with DM comorbidity were significantly more likely to have a history of smoking or alcohol consumption. Those participants that exercised had statistically lower DM comorbidity.

Conclusions

Health providers should be vigilant for the increased risk of DM among PLWH. An integrated primary care approach is advocated to screen for and address diabetes. Health providers should proactively identify and address sedentary lifestyle, alcohol use and smoking history in all adult patients on HAART.

2077

The perspectives of HIV Program Managers on the extent of integration of HIV, non-communicable disease and mental illness care for people living with HIV in Southern Africa – a qualitative study, February 2022 - August 2022

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Keywords

Integration; Noncommunicable Diseases; People Living with HIV/AIDS; Southern African Development Community; Qualitative

Introduction

Background: The Southern African Development Community (SADC) region has a high burden of both human immunodeficiency virus infection (HIV), non-communicable diseases (NCDs), such as cardiovascular diseases, diabetes, cancers and mental illnesses. The integration of HIV/NCD care is crucial to effectively manage the health needs of individuals living with these co-morbidities, while optimizing health care resources. However, there is a paucity of data on the progress and extent of this integration in the region.

Methods

Methods: We conducted a qualitative study to determine the extent of integrated HIV/NCD care from the perspectives of national HIV program managers in four Southern African countries (Eswatini, Mozambique, Zambia and Zimbabwe) using semi-structured interviews and a checklist, from February 2022 to August 2022. We defined complete integration if all five conditions are screened at primary health care (PHC) facilities. We employed thematic analysis to analyse the data.

Results

Results: The four countries were fully integrated based on our simplified definition, however the extent of integration varied widely and there remains a need for improvement in all four countries. Six themes emerged from the semi-structured interviews: the importance of integrating NCD care into HIV care, mental illnesses not receiving sufficient attention as other medical conditions, the challenge of drug stockouts and availability of laboratory tests, scarcity of funding for NCDs, and the impact of corona virus disease of 2019 (COVID-19) on PHC services.

Conclusions

Conclusion: While all the four SADC countries have made notable efforts to integrate HIV/NCD services, some are still in early stages of implementation.

2157

The prevalence and correlates of alcohol use and alcohol use disorders among young people (15 – 24 years) and adults in Eswatini, Malawi and Zambia

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Keywords

alcohol use
alcohol use disorder
adults
Eswatini
Malawi
Zambia

Introduction

Excessive alcohol use is a significant public health problem worldwide. It is escalating in Sub-Saharan Africa due to marketing aggressively and lack of individual and policy level interventions. Study objectives are to determine the prevalence and correlates of alcohol use (AU) and alcohol use disorders (AUD) in young people and adults in Eswatini, Malawi and Zambia.

Methods

A cross sectional study analyzed PHIA surveys 2015–2017 data for Eswatini, Malawi and Zambia. A multistage sampling was used to recruit young people (15 – 24 years) and adults (25+ years) at household level. The sample size were as follows Eswatini(n=9885) Malawi(n=19405), and Zambia(n=27,382). A multivariable logistic regression was used to identify the correlates. Analysis was adjusted for weights, stratification, and clustering using the survey platform analysis in Stata.

Results

AU prevalence in young people and adults was 17.9% and 23.3% in Eswatini, 10.9% and 22.1% in Malawi, and 14.6% and 32.4% in Zambia. The prevalence of AUD in young people and adults was 9.1% and 14.2% in Eswatini, 3.5% and 11.2% in Malawi, and 7.6% and 20.6% in Zambia. The correlates of AU and AUD encompass male (aOR: 4.62 (95% CI: 3.35 -5.79), age group, higher education level (aOR: 1.70, 95% CI: 1.16 -2.48), divorced/separated/widowed in all countries (aOR: 1.96, 95% CI: 1.55 -2.48), HIV positive status in Zambia (aOR: 1.49, 95% CI: 1.12 -1.99), multiple sexual partners in Malawi (aOR: 11.90, 95% CI: 6.76 -20.93), employed class in Zambia (aOR: 2.06, 95% CI: 1.64 -2.59) and transactional sex in Malawi.

Conclusions

AU and AUD are common in both groups. It is associated with male, age 20–24 years, educational level, HIV status, transactional sex and multiple sexual partners, widowed/separated and risky sexual behaviours. There is an urgent need for targeted alcohol interventions integrated with sexual reproductive health programs.

2211

Evaluation of cancer screening services for people living with HIV in Botswana, 2020-2022

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Keywords

Cancer, Screening, Human immunodeficiency virus (HIV), Cervical cancer, Antiretroviral therapy (ART)

Introduction

People living with HIV (PLHIV) have an increased risk of cancers. Botswana, a country with high HIV prevalence has no screening guidelines for common cancers except cervical cancer. It is currently unknown what proportion of PLHIV are being screened for cancer. This study therefore sought to evaluate cancer screening services in the HIV clinics.

Methods

We assessed the resources for cancer screening and reviewed the medical records of adults initiating antiretroviral therapy (ART) from 2020-2021 in 20 high volume HIV clinics (>1000 patients) clinics in Gaborone and Francistown. Questionnaires assessing knowledge and practices of cancer screening were administered to healthcare workers. Descriptive statistics and chi-square tests for differences in screening practice among health workers were performed

Results

Of the 37 nurses and 25 doctors working in the HIV clinics, only 13 (35%) nurses and 16 (64%) doctors were trained in cervical cancer screening. Cervical cancer screening guidelines were available in only 7 consultation rooms assessed. A total of 1000 records of PLHIV were reviewed and 57.3% were females. Majority of the patients (97.8%) were not screened for any cancer at ART initiation; only 38% of female patients were screened for cervical cancer. Fifty-seven healthcare workers completed the questionnaire: 35(62.5%) nurses and 22(37.5%) doctors. Similar proportions of nurses and doctors reported to ever practice cancer screening (p=0.008). Doctors were more likely to report practicing routine screening of other cancers (e.g., breast) (p=0.007) and referred patients to oncology care (p<0.001) while more nurses reported assessing patients for cancer history during follow-up visits (p=0.001). More than 60% of all doctors and nurses did not perform physical examinations to assess for cancer at initial or follow-up visits.

Conclusions

The findings highlight the need to improve cancer screening services of PLHIV through the training of healthcare workers, and the development and/or use of screening guidelines.

2218

Combating Antimicrobial Resistance in the management of Urinary Tract Infections through innovative community engagement approaches among women in 3 districts of Zambia, January 2022-April 2023

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Keywords

Community Engagement, Antimicrobial Resistance, Urinary Tract Infections, Responsive Dialogues

Introduction

In Zambia, antibiotics continue to be inappropriately used among women with Urinary Tract Infections (UTIs) contributing to the rise in Antimicrobial Resistance (AMR). Despite a situation analysis highlighting supply side factors such as easy access to antibiotics without prescription being key drivers of AMR, knowledge gaps on the demand side factors still exist. This research aimed to use an innovative community engagement approach to understand community drivers of AMR as well as engage community members to co-create AMR solutions.

Methods

A qualitative approach was used, and data was collected using a case study design with the 'case' being an innovative community engagement approach called Responsive Dialogues developed by Wellcome. The study conducted in 3 districts (Lusaka, Ndola, and Livingstone) had 125(88 F, 37M) participants conveniently sampled comprising men and women aged between 16 and 45 years. An average of 4 community dialogues per site were held. Inductive thematic analysis was used to analyze the data.

Results

There was low awareness and knowledge of AMR with participants stating to have used antibiotics indiscriminately to manage UTIs. The study unmasked different demand side behaviours as the key drivers of AMR such as: sharing of antibiotics, misuse of antibiotics, lack of proper diagnosis of UTIs in clinics and lack of spouse support to buy antibiotics. Co-created community solutions to address AMR included community engagement and sensitization for changing health seeking behaviour for UTIs, community awareness on AMR and integration of gender-sensitive approaches in antenatal clinics specifically targeting men (who accompany pregnant women).

Conclusions

Employing innovative community engagement approaches such as the responsive dialogue approach is key for empowering communities as valuable stakeholders to provide solutions to reduce AMR in Zambia, which is a public health threat especially among women suffering from UTIs.

2240

Patterns of road traffic injuries among patients attending Naguru Regional Referral Hospital, Uganda, July 2022 - June 2023

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Keywords

Road traffic crash, injury patterns, motorcyclists, Kampala, Uganda

Introduction

Road traffic injuries (RTI) are a global public health concern claiming 1.3 million lives annually. In 2022, the incidence of RTIs in Uganda was 43.2 cases per 100,000. We described incidence, injury patterns, and outcomes of RTI among patients during July 2022–June 2023 at the emergency department of Naguru Regional Referral Hospital (NRRH), which in 2024 shall be elevated to a major trauma centre in the country.

Methods

An RTI case was a patient involved in a road traffic crash who was taken to the emergency department at NRRH during July

2022–June 2023. Data on age, sex, injury site, mechanism of the crash, road user type, injury characteristics, date of hospital visit, arrival time, and patient outcome were abstracted from emergency department registers. We determined frequencies and proportions for categorical variables, and measures of dispersion and central tendency for continuous variables. We computed incidence of road traffic injuries as new cases per population.

Results

Of 1,005 cases, 49% were motorcyclists, 26% passengers, 15% pedestrians, 5% bicyclists and 3.4% drivers. The median age of cases was 30 years (range: 5 months–89 years). The majority (74%) of cases did not require admission. Lower extremity injuries were most common (43%). Among 2 (0.2%) cases who died on arrival, all sustained severe head injuries. Cases peaked during the 9 o'clock hour in the morning and 8 o'clock hour in the evening. Incidence of traffic injuries was 51 cases per 100,000 population. Males were more affected than females (86 vs 19 per 100,000).

Conclusions

The incidence of RTI at NRRH remained as high as the previous year. Peak hours for RTIs corresponded to the daily "rush hours". We recommend RTI prevention strategies targeting peak hours and motorcyclists.

2261

Factors Associated with Depressive Disorders Among Medical Students in Bangui in 2021-2022

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Keywords

Factors, Depressive Disorders, Students, Bangui

Introduction

Depression is a common mental disorder. Numerous studies have shown that rates of depression among college students are higher than those found in the general population. Our study proposes to determine the proportion of students of the Faculty of Health Sciences (FACSS) of the University of Bangui who presented symptoms of depression and to analyze the determinants.

Methods

This was an analytical cross-sectional survey. The study population consisted of all FACSS students regularly registered for the 2021-2022 academic year. Two questionnaires were used; BECK's abstract to assess the level of depression and another questionnaire to study its determinants. The variable of interest is the presence of depression rated at 1 if the person presents with a depressive syndrome whatever the form. Variables were introduced into a multivariate model using logistic regression with successive iterations of the stepwise descending type. Measures of association were estimated by the odds ratio (OR) and their 95% confidence interval (CI). Data were analyzed using Epi info software.

Results

The average age of the students was 21 (± 2.5 years). The majority of students were from urban areas (81.8%) and lived with parents/guardians (70.5%). The prevalence of depression among college students was 52.6%. The main subjective depressive symptoms were fatigue (63.5%), the need for extra physical effort to work (61.4%) and sadness (52.6%). Housing difficulties, lack of a scholarship and pressure from parents/guardians were the main factors associated with the onset of depression with ORa = 3.47 (2.11 – 5.99), $p < 10\text{-}3$; ORa = 0.19 (0.15 – 0.28), $p < 10\text{-}3$; ORa = 2.02 (1.13 – 4.17), $p = 0.003$, respectively.

Conclusions

The high prevalence of depression among students at the FACSS should challenge academic officials to set up a device for detecting students showing signs of depression in order to offer them psychosocial support.

2311

Limited Public Knowledge of Chronic Kidney Disease in a Resource-Limited Setting: A Cross-Sectional Study

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Keywords

limited chronic kidney disease, public knowledge, Ethiopia

Introduction

Background: The general public's awareness and knowledge of chronic kidney disease (CKD) and its risk factors remains low, which may contribute to the development of CKD and undiagnosed disease. Therefore, the current study aimed to assess public knowledge of CKD in the Ethiopian community using a validated tool.

Methods

Methods: A community-based cross-sectional study was conducted in Ethiopia's capital, Addis Ababa. For administrative purposes, the city is divided into ten sub-cities; proportional numbers of study participants were drawn from each sub-city based on their total population size. This study's target population was the general public, and health professionals were excluded. SPSS version 26 was used to analyze the data, and frequencies, tables, percentages, mean, and standard deviation were used to describe the responses of the participants. To identify factors associated with public knowledge of CKD, an independent T-test and one-way ANOVA statistics were used.

Results

Results: A total of 350 people were approached, with 301 of them completing and returning the questionnaire, yielding an 86% response rate. The mean (S.D.) knowledge score of participants in this study was 11.12 (± 4.21), with a minimum of 0 and a maximum of 22. In terms of the distribution of the CKD knowledge score, half of the respondents have a score of 11 or less. One-way ANOVA revealed that respondents with a degree educational background and family history of CKD had higher knowledge scores. An independent t-test was also performed, but it found no link between socio-demographic characteristics and knowledge score.

Conclusions

Conclusion: The Ethiopian population has a low level of general knowledge about CKD and its risk factors. Non-communicable diseases, such as diabetes and hypertension, are currently a public health concern and one of the major risk factors for CKD.

2331

"Completely by accident": A qualitative analysis of palliative care professionals' motivations to practice palliative care

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Keywords

Palliative care; Non-communicable diseases; Motivation; Qualitative research; Health services research

Introduction

The lack of clarity about the factors that motivate service providers to take a career in palliative care presents a significant knowledge gap that must be filled. This is because gaining knowledge about the motivations for taking a career in palliative care would provide valuable insights that can potentially increase buy-in and interest among prospective healthcare professionals. By elucidating the motivations of service providers, the study aims to contribute to the broader field of palliative care research and inform the development of tailored interventions and training programmes to increase the pool of specialised palliative care providers. This study sought to explore palliative care service providers' motivations to practice palliative care.

Methods

This study utilised an exploratory descriptive qualitative research design. The study was conducted at the Korle Bu Teaching Hospital (KBTH), Ghana. Using purposive sampling, palliative care providers were interviewed. The selection criteria for recruitment included two key factors: (a) being a member of the palliative care team at KBTH and (b) having a minimum of two years of experience in the field of palliative care. Inductive thematic analysis was carried out in NVivo-12 following Colaizzi's method for qualitative research analysis.

Results

Two main factors motivated service providers to take a career in palliative care. The first was the influence of professional training while the second motivation was from their personal experiences regarding providing care to a family member with palliative care needs.

Conclusions

The study concludes that personal experiences with caring for a loved one with palliative care needs play a pivotal role in shaping the decision of service providers to pursue a career in palliative care. Also, investment in palliative care education and training is crucial to ensure a skilled workforce capable of meeting the growing needs of patients and families facing serious illnesses.

2367

Salt-sensitivity of blood pressure: highlights from multiple studies conducted in Zambia

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Keywords

Salt-sensitivity of blood pressure, hypertension, salt, HIV, blood pressure

Introduction

Salt-sensitivity of blood pressure (SSBP) is when changes in blood pressure (BP) mirror changes in salt intake. SSBP is a risk factor for hypertension, stroke, heart attack and death. However, SSBP studies are scarce and the mechanisms are unclear. The main goal of these studies was to determine the correlates of SSBP.

Methods

We conducted a cross-sectional study (SPADISH study) and three clinical trials (immediate pressor response to oral salt (IPROS) study I and II and salt-sensitivity study) between 2020 and June 2023, in adults with HIV (PWH) and HIV-negative who were living with and without hypertension at Livingstone University Teaching hospital and Kanyama General hospital. Descriptive and inferential statistics were employed to analyze the data in SPSS.

Results

In the IPROS clinical trials, we found that the majority (62%, n=79/127 and 75%, n=79/139) were salt-sensitive. Participants who reported consuming more salt than is required were 2.4 times (95% CI 1.08-5.30) more likely to be salt-sensitive. Erythrocyte glycocalyx sensitivity to sodium (eGCSS) correlated negatively with SSBP (AOR 0.98, 95% CI 0.97-0.99) and this relationship was driven by female-sex. In the SPADISH study involving 242 adults with median (interquartile range, IQR) age of 27 (22, 42) years, the majority had elevated eGCSS correlating positively with self-reported salt intake and estimated salt intake. The average (IQR) estimated salt intake in the population was 7.6 (5.5, 10.0) g/day. In the salt-sensitivity study of 85 adult participants (43 PWH and 42 HIV-negative) matched for age, sex and hypertension, PWH who had hypertension (n-22/23) were more salt-sensitive (95%) compared to the HIV negative (n=15/22, 71%). SSBP was associated with non-dipping BP and hypertension (< 0.001).

Conclusions

The burden of SSBP is substantially high, especially in PWH and hypertension. Salt intake and SSBP should be included in the prevention and management of hypertension.

2374

Variation in the Human TAS1R Taste Receptor Gene and sweet-taste sensitivity in persons with and without diabetes mellitus, 2023

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Keywords

Polymorphisms; TAS1R3 genes; taste sensitivity; Diabetes

Introduction

Taste perception, particularly sweet taste, is important in dietary choices and nutritional preferences. Changes in taste sensitivity in the context of diabetes can have major implications for disease treatment and overall well-being. Diabetes has been associated with altered sweet taste perception associated with polymorphisms in the TAS1R3 taste receptor gene. The aim of this study was to determine taste sensitivity and genetic variation among diabetics.

Methods

We enrolled 89 participants (42 healthy and 47 with diabetes mellitus) from Livingstone University Teaching Hospital. Saliva samples were collected for genotyping of the TAS1R3 gene. Six serially diluted concentrations were made using sucrose in spring water to determine taste sensitivity. The taste threshold i.e, the concentration at which the respondent can distinguish the taste from water, and the preferred taste were recorded.

Results

Median age (interquartile range) of participants was 46 (28.59) years and 59.6% were females. The median sweet taste threshold of diabetic participants was not different from that of healthy participants (5g/L vs 5g/L p=0.158). The preferred sucrose concentration for diabetics was high than that of healthy participants (240g/L vs 60g/L, p=0.010). When diabetics and healthy subjects were compared, the allele with the most sensitive sweet taste threshold on the rs307335 variant of the TAS1R3 gene was TC.

Conclusions

This was likely the first study to determine the sweet taste sensitivity and genetic variant in diabetes in Zambia. These findings support the hypothesis of decreased sweet taste sensitivity in diabetics. Genetic studies should be recommended to determine risk scores in efforts to prevent and manage diabetes.

2421

Productivity burden of hypertension and non-adherence to antihypertensive medication in Livingstone district, June 2023

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Keywords

Hypertension, Productivity-adjusted life-years, antihypertensive medication, nonadherence, Gross Domestic Product, uncontrolled hypertension

Introduction

Uncontrolled hypertension is a risk factor for stroke, heart attack and even death. Although the adverse outcomes have an impact on productivity and quality of life of individuals, data is limited in this area. The main goal of this study was to determine the burden and factors associated with nonadherence to antihypertensive medication and also determine the loss of Productivity-Adjusted Life-Years (PALYs) due to hypertension.

Methods

This cross-sectional study was conducted between April and June of 2023 at Livingstone University Teaching Hospital and Maramba Clinic in Livingstone, Zambia. A total of 198 adults aged ≥18 years, living with hypertension and involved in economic activities were recruited using simple random and purposeful sampling methods. Data were collected using a structured questionnaire designed in REDCap and analyzed using SPSS. Descriptive and inferential statistics were used. Productivity index was employed in calculating PALYs.

Results

The study had a female preponderance of 60.1% (n=119) and the median age (interquartile range) of participants was 49 (41.0, 59.0) years. Almost half (48%) of the participants were nonadherent to antihypertensive medication. The factors associated with nonadherence to antihypertensive medication were younger age (OR 0.94; 95%CI 0.90, 0.98), female sex (OR 2.52; 95%CI 1.18, 5.40), self-employment (OR 2.57; 95%CI 1.02, 6.45) and absenteeism at work (OR 3.60; 95%CI 1.16, 11.22). Estimated PALYs lost per person due to hypertension and cumulative PALYs lost were 0.2 (0.0, 2.7) and 766, respectively. Cumulative PALYs' value lost due to hypertension was estimated at $ 871,239.58 in gross domestic product.

Conclusions

The prevalence of nonadherence to antihypertensive medication was substantially high. Intensifying counselling, sensitization and close monitoring are therefore recommended in primary routine care. Our findings also highlight the significant economic impact and burden of hypertension-related productivity losses that should be considered in future studies.

2428

NEEDS AND OPPORTUNITIES FOR CERVICAL CANCER PREVENTION AND TREATMENT IN ZAMBIA

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Keywords

Cervical cancer; Opportunities; Needs; Zambia

Introduction

Cervical cancer is the most common cause of cancer morbidity and mortality in Zambia. As Zambia is implementing an updated cervical cancer control strategy, it was important to take stock of progress and challenges in the 2016-2021 Plan. We sought to investigate the health systems needs and opportunities for prevention and treatment of cervical cancer in Zambia.

Methods

We conducted exploratory qualitative study which utilized in-depth interviews. Stakeholders who had a direct role in planning, managing, monitoring, or implementing the cervical cancer program were invited to participate. "Information-rich" individuals were purposively selected to represent different levels of the health system. A total of 23 interviews were conducted

Results

Vaccination: Expanding HPV vaccination is key and recommended to be done routinely as well as expanding eligibility to younger girls.

Screen & Treat (S&T) pre-cancerous lesions: Visual Inspection with Acetic acid (VIA) scale-up for screening is a major success and has leveraged HIV-focused funding for scale-

up, however, also seen as a "double-edged sword" as other women shun screening because of fear of HIV stigma. Further, clients who require treatment of lesions using Loop Electrosurgical Excision Procedure (LEEP) that must return to access it or referred to other facilities are often lost to follow-up.

Referral and treatment for invasive cervical cancer: The greatest challenges were with "the last mile" as a lot of patients fail to travel to the one tertiary hospital treatment

Conclusions

Scaling up implementation of the three strategies and particularly addressing the challenges around the referral require urgent attention. Preventing cervical cancer through VIA with immediate cryotherapy or thermal ablation is clearly recognized and is the basis for calls to expand screening. We found mixed views on HPV testing as the primary screening strategy due to delays in getting results and the cost

2433

Oro-facial Neurological Disorders among Dental Patients in Southwest Nigeria: a Decade Report

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Keywords

Neurological disorders, Oro-facial, Dental patients, Neuralgia

Introduction

Oro-facial neurological disorders (ONDs) encompass a wide range of conditions that affect the sensory and motor nerves innervating the oro- facial region. ONDs could present with varying disease severity which are of clinical significance in dental practice and thereby affect patient's quality of life. This study aimed to provide an epidemiological documentation of ONDs among dental patients in a tertiary dental center in Southwest Nigeria over a decade.

Methods

This was a retrospective study carried using the database of the Department of Oral Pathology, Dental Center, University College Hospital Ibadan, Nigeria. Data was collected by retrieving patients' records from the Oral Diagnosis clinic attendance register (2012-2022). The relevant information retrieved included gender, age, occupation, type and site of OND diagnosed. Data was analysed using SPSS version25.

Results

155 cases of ONDs were retrieved having more females (67.5%) compared to males (32.5%); their mean age was 50.6 (±17.8) years and most (72.3%) were above 40years old. Neuralgias (55.5%) were the most common OND, followed by facial nerve palsy (FNP) (19.4%), idiopathic facial pain (14.8%) and burning mouth syndrome (10.3%) as least. Significantly, ONDs were commoner among those above 40years except FNP which had 70% patients aged below 40years (p=0.00). Also, females were more commonly affected in all the OND categories (p=0.67). Trigeminal neuralgia (94%) was the most common neuralgia, which presented more on the right (55%) compared to the left (45%). Bell's palsy was the most common type of FNP which was found twice more on the left compared to the right.

Conclusions

This study revealed a considerable burden of ONDs most commonly neuralgias being related with increased age and female gender. Dental practitioners should be well informed about OND presentations for appropriate diagnosis and management, as well as possible co-management with relevant medical specialists for difficult cases.

2439

Assessment of Practice and Barriers to Mental Health Services for Gender-Based Violence Survivors at and Rural Isange One Stop Centers in Urban and Rural Rwanda: Perspective of Service Providers

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Keywords

Mental Health, Mental Health Service Providers, Gender-Based Violence, One Stop Center, Intersectionality

Introduction

One of the most significant public health issues affecting a substantial number of individuals worldwide is gender-based violence (GBV). To better assist GBV survivors, Rwanda began the Isange One-Stop Center (IOSC) program to provide comprehensive services to survivors inclusive of mental health services. Studies exploring the experiences and challenges of service providers during service provision and the intersectionality of services are scarce.

Methods

The study is a qualitative phenomenological study. 18 in-depth interviews were done using a semi-structured interview guide in June 2022. Participants included a multi-sectoral set of service providers providing psychosocial support to GBV survivors at IOSCs in urban and rural settings. The data was analyzed through Dedoose software.

Results

Five major themes and corresponding subthemes emerged. Findings showed that working at the IOSCs had a significant psychosocial impact on the providers with little support available. Financial constraints at IOSCs and obstacles faced by survivors such as culture, stigma, lack of transport, and information, influenced service access. The lack of mental health experts and full-time staff in rural IOSC impacted the level of mental health services provided compared to the urban IOSC. Furthermore, it was evident that providers need more regular capacity-building training to enhance their understanding of intersectionality and the needs of different social groups. on the other hand, the study acknowledges IOSC's strength in delivering comprehensive services to survivors, utilizing available resources.

Conclusions

According to the study's findings, the provision of mental health services to GBV survivors had various psychosocial effects on providers, highlighting the urgency to have proper support measures in place. Enhancing capacity building is crucial for providers to provide better and inclusive care to survivors. In addition, the variation in the level of psychosocial support across rural and urban centers warrants the need to review the operations of both IOSCs and address the specific gaps identified.

2463

Uso do Sistema de Vigilância de Mortalidade para Revelar Epidemias Silenciosas e Trauma em Moçambique, 2019-2020

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Keywords

Revelação, Mortalidade, epidemias silenciosas, trauma.

Introduction

Em África ainda é preciso esforços para obter dados com boa cobertura, confiáveis e precisos sobre a mortalidade e causas de morte, e com o aumento das doenças crônicas não transmissíveis aumenta a necessidade de informação. Desde 2018, em Moçambique está sendo implementado um sistema de vigilância que notifica dados contínuos de eventos vitais e causas de morte em Moçambique.

Methods

Sistema aplicado em 700 conglomerados distribuídos pelas 11 províncias e selecionados aleatoriamente de uma população representativa a nível nacional. Entrevistas de autopsia verbal e social são conduzidas para a determinação das causas e seus determinantes por inquiridoras treinadas usando ODK embutido no tablete e os dados são analisados para apurar resultados específicos da causa de morte e seus determinantes usando algoritmos de autopsias verbal e social codificadas por computador pela ferramenta STATA 17.0 e Excel.

Results

Entre as 5965 mortes analisadas, o grupo de doenças não transmissíveis e trauma representaram 41% (2472/5965, $p<0.001$) e 12% (700/5965, $p<0.001$) respectivamente, maior parte das causas não transmissíveis ocorreu em adultos entre os 15-49 anos de idade como neoplasias 8% (148/1802) e doenças cardiovasculares com cerca de 3% (63/1802) e na idade dos 50 anos ou mais onde as neoplasias contribuem com 16% (389/2393) e as doenças cardiovasculares com 13% (316/2393), cerca de 51% (735/1455) e 53% (470/880) consumiam bebidas alcoólicas e cigarros respectivamente, maior parte dos traumas ocorreu em idades entre 5-14 anos de idade com cerca de 19% (63/330), observou-se diferenças significativas ($p<0.001$) em relação a faixa etária, quintil de riqueza e região de residência

Conclusions

As doenças crônicas não transmissíveis tem aumentado significativamente em pessoas adultas e socialmente estáveis bem como em áreas desenvolvidas, o sistema é uma oportunidade para construir uma vigilância abrangente para apoiar políticas de saúde pública.

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Breast cancer pharmacogenetics in Botswana

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Keywords

breast cancer, toxicity, genetic variability, pharmacogenetics, sub-Saharan Africa

Introduction

Breast cancer is one of the leading cancers among females globally and especially in sub-Saharan Africa, where, despite a relatively low incidence, mortality is high. In Botswana, breast cancer represents almost 20% of cancers diagnosed and accounts for more than 10% of cancer-associated deaths among women. Moreover, median age of women presenting with breast cancer is younger than those of high-income countries and patients are more likely to present with advanced stage disease. In addition, it should be noted that there is limited availability/access to treatments/drugs. Breast cancer in Botswana is also associated to a high risk of treatment failure. Possible explanation for it may be the genomic modulation of drug response. Individual's genomic profile has been shown to influence the therapeutic outcomes and to impact on compliance and toxicity, other than drug-resistance onset. To explore the interplay between pharmacogenetic profile and 5-year overall survival, a retrospective study on tamoxifen and paclitaxel pharmacogenetics has been carried out.

Methods

A cohort of 212 formalin-fixed paraffin embedded breast cancer tissues underwent DNA extraction and genotyping for single nucleotide polymorphisms in genes encoding liver enzymes that metabolize two anti-breast cancer drugs: tamoxifen (CYP2D6) and paclitaxel (CYP2C8). The genes have been analyzed for four polymorphisms associated to an aberrant metabolism of the drugs of interest

Results

Preliminary data show a prevalence of CYP2D6*4 and CYP2C8*2 alleles among breast cancer patients in Botswana being 3.8% and 10.9%, respectively. It is possible to estimate a 7.0% and a 19.7% of deviant drug metabolizers for tamoxifen and paclitaxel, respectively. Ongoing work on CYP2D6*17, *29 and gene copy number variation should refine the expected metabolic phenotypes for tamoxifen

Conclusions

Available data show a non-negligible rate of subjects showing defective drug metabolism. Almost 20% of women are predicted to not being able to metabolize properly the chemotherapeutic paclitaxel

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