



The guest of honour Dr. Sabin Nsanzimana, Ministry of Health Republic of Rwanda and other EAC delegates poses for a photo to symbolize the official opening of the 9th EAHSC



The Guest of honour delivering an opening speech of the 9th EAHSC



Undersecretary Ministry of Health South Sudan receiving a torch to symbolize acceptance of hosting the next EAHSC

CONFERENCE ABSTRACTS

THE 9TH EAST AFRICAN HEALTH AND SCIENTIFIC CONFERENCE:

Challenges and Strategies to
Preparedness and Response to
Communicable and
Non-Communicable Diseases:
Lessons Learnt from the COVID-19
Pandemic

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KEYNOTE SPEAKER ABSTRACTS

Main theme: Strategies and Challenges to Preparedness and Response to Communicable and Non-Communicable Diseases - Lessons Learnt from the COVID-19 Pandemic

Author: Prof. Matilu Mwau, M.B., Ch.B., MTM, PhD

Affiliation: Kenya Medical Research Institute, Kenya

Non-communicable diseases are the leading cause of death worldwide and represent an emerging global health threat. In working class people, they lead to avoidable healthcare costs, limited ability to work, and financial insecurity. Fortunately, many of the causes are known, and are preventable.

Communicable diseases are also a major global health threat. Even though pandemics have occurred throughout history, they appear to be increasing in frequency. The risk of pandemics is high, and is driven by the combined effects of spark risk and spread risk. Some geographic regions with high spark risk, including Central, West and East Africa, lag behind the rest of the globe in pandemic preparedness.

The SARS CoV-2 pandemic found a vastly unprepared and ill-equipped world. Public health systems were not prepared to combat a new pathogen that spread rapidly across the globe. Containment measures were insufficient and inadequately implemented. Healthcare infrastructure was inadequate. There was limited evidence and many scientific controversies. There were financial constraints. The workload among healthcare workers was high. Resources were inadequate and when present, improperly managed. Test reagents, medicines and vaccines were manufactured by, and prioritised for, developed economies.

There are lessons that we have learnt that can be applied to increase our preparedness for the next pandemic, and our approach to non-communicable diseases. Firstly, primary health care and essential public health functions must be strengthened. We must address pernicious strategic, leadership, human resources, infrastructure and procurement challenges within the health systems.

We have to be proactive about early warning systems, recalibrate resources to match threats, let the evidence drive action, build mass casualty surge capacity, build production capacity for vaccines, medicines and reagents, and build and test logistics networks. We must strengthen research capacity.

Finally, we ought to restore institutional trust so that the public can adhere to directives and trust our results. This is the right time to future-proof our capacity to respond to global health threats.

Sub-theme 1: Innovative approaches and interventions to strengthen health systems, leadership and governance for management of communicable and non-communicable diseases

Author: Prof. Léodégál BAZIRA, Faculty of Medicine, University of Burundi, Burundi

Abstract: This presentation attempts to provide some basis to feed the discussion around Sub-theme 1. Non-communicable diseases (NCDs)

Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally and 77% occur in low- and middle-income countries (WHO, 2022). Cardiovascular diseases account for most deaths, with 17.9 million people annually, followed by cancers (9.3 million), respiratory diseases (4.0 million), and diabetes (2 million).

Communicable diseases: Almost two centuries after Jenner first inoculation, Smallpox was declared eradicated in 1980. Polio is the next to be eradicated, Measles elimination is already certified in most developed countries and Rubella could be eliminated quickly. The main challenges on the agenda to tackle infectious

diseases remain the growing risk from antibiotic resistant infections, the extensive movement of people and climate change and health inequalities

The growing threat of emerging or re-emerging infectious diseases: The emerging infectious diseases are caused by (i) a new infectious agent (HIV, Legionella, rotavirus, Ebola virus, Campylobacter, virus of bovine spongiform encephalitis, H1N1, H5N1 flu, COVID-19); (ii) a newly identified infectious agent (hepatitis C virus) or (iii) a known infectious agent spreading to new geographical areas: Ebola virus, West Nile virus, Dengue and Chikungunya virus.

The causes of these emergences and re-emergences, as well as their diffusion, are increased mobility of individuals, evolution of ways of living or food habit, proximity between domestic and wild animal species, evolution of food habits and climate change with the displacement of vectors. The number of zoonotic epidemics increased by 63% in the WHO African Region during the decade 2012-2022 compared to 2001-2011.

Innovative approaches and interventions for management of communicable and NCD

The goals, innovative approaches and interventions are detailed in the 2030 Agenda for Sustainable Development, the WHO package of essential noncommunicable (PEN) disease, 16 Best buys and other recommended interventions for the prevention and control of NCD and WHO Recommended Strategies for the Prevention and Control of Communicable Diseases (2001).

Some innovative approaches learned from the covid-19 pandemic experience: Among the innovative approaches are the integrated approach, strengthening governance, adopting health system resiliency approach, leveraging existing digital health technologies, maintaining essential health services during pandemics, enhancing disease surveillance measures through digital tools, securing and protecting workforce and skills, delivering faster and more precise responses to control infectious diseases, fighting against disinformation and delivering core and new cost effective services.

Conclusion: The COVID-19 pandemic underscored the need for strengthening the global health security through improved preparedness and international solidarity, for strengthening health system resilience, for providing adequate information, for protecting the first line responders and for promoting an innovative and more integrated approach for NCD and Communicable disease.

Sub-theme 2: Is the World prepared for future pandemics? Success, opportunities, and challenges in management of COVID19 and Ebola

Author: Julius J. Lutwama, Uganda

Affiliation: Uganda Virus Research Institute

Abstract: Between 2013 and 2016 there was a big outbreak of Ebola disease in West Africa. This outbreak also spread to Europe and to the USA. More recently, since 2019, there has been a worldwide pandemic of COVID-19 which started in Wuhan, China and spread to all parts of the globe. These two large Public Health Emergencies of International Concern showed to the world, the limitations of past efforts in preparedness to pandemics. The challenges and successes at the global, continental, and regional levels in controlling these outbreaks are explored in this presentation. Many opportunities from the successes can be identified. The opportunities should be used to further enhance our preparedness to coming pandemics. We are not yet ready and we still need to do a lot to address the challenges of future pandemics.

Sub-theme 5: Manufacturing and regulation of Medicines, Vaccines, Diagnostics, and other health technologies in the context of Epidemics and Pandemics

Manufacturing and regulation of Medicines, Vaccines, Diagnostics, and other health technologies in the context of Epidemics and Pandemics

Author: Dr Eric Nyirimigabo

Affiliation: Head of the Food and Drugs Inspection and Safety Monitoring Department, Rwanda Food and Drug Authority

Abstracts: Manufacturing and regulation of Medicines, Vaccines, Diagnostics, and other health technologies during epidemics and pandemics require a coordinated effort between governments, pharmaceutical companies, regulatory agencies, and international organizations. Flexibility, rapid response, and rigorous quality control are essential to ensure that the public has access to safe and effective treatments and preventive measures during public health emergencies.

Sub-theme 6: Traditional and Herbal Medicines use, practices and believes during COVID-19 Pandemic

Author: Dr Raymond Muganga

Affiliation: Rwanda Drug Authority, Rwanda

Abstract: During the COVID-19 pandemic, traditional and herbal medicine was used around the world especially in developing countries where most of the population has limited access to conventional medicine. Those medicines gained attention not only for their accessibility, the lack of a specific treatment for COVID-19, but also because of the practices and beliefs surrounding traditional and herbal medicines during the pandemic.

Most of the time traditional and herbal medicines such as Echinacea, Ginger and Turmeric, Garlic, artemisia, fruits, were used because people believe that they can boost the immunity potentially helping in combating the virus, alleviate anxiety, and stress as well as the symptoms like cough, sore throat, fever, etc. associated with the viral infection. Sometimes people turn to traditional and herbal medicines because they believe these remedies can prevent COVID-19 infection.

Some countries reported a remarkable increase of herbal medicines consumption reaching 68% of other Complementary and Alternative Medicines used during COVID 19 period in some areas. Some herbal medicines have demonstrated their potential benefits in treating COVID 19, but for most of them scientific evidence of their effectiveness against the virus is still lacking. Traditional and herbal medicines were commonly used during COVID 19 period for their various beneficial properties. However, caution is still needed, as for most of them their effectiveness against the virus was not yet scientifically and fully proved.

CONFERENCE ABSTRACTS

Sub-theme 1: Innovative approaches and interventions to strengthen health systems, leadership and governance for management of communicable and non-communicable diseases

1. Predictors and frequency of STIs among men using PrEP among men who have sex with men in Kiambu County, Kenya

Corresponding author: Caleb Momanyi Ombati

Co-authors: Alloys Orago, Rosebella Iseme

Affiliation: Jomo Kenyatta University, Kenya

Background: Globally MSM brace a high burden of STIs, hence a target population for public health interventions. Chlamydia trachomatis, Neisseria gonorrhoeae, Hepatitis B, syphilis and herpes are the most prevalent STIs among the MSM. The convergence of pre-exposure prophylaxis (PrEP) has seen an increase in STIs. In Kenya, 35% of the MSM on PrEP have acquired an STI and this is a 21% increase at a national level. STIs contribute to 41% of morbidity among the MSM. 29% of population on PrEP in Kiambu are MSM and there is an increment of STIs by 14% in Kiambu County.

Materials and methods: A descriptive cross-sectional design was used. This was a community-based study and venue-based and snowballing sampling was adopted to identify participants. Quantitative data was collected from 129 participants, while qualitative data was collected from 4 key informants and 3 focused group discussions. Quantitative data was analyzed using SPSS and qualitative using NVIVO software.

Results: The findings indicated the prevalence rate of STIs was 37.5% in the past three months. The more prevalent STIs among MSM were Chlamydia (47.9%), Gonorrhoeae (47.9%), and genital warts (31.3%). The regression analysis indicated that, there were significant associations between STI prevalence and the type of sexual typologies [OR=25.565; 95%CI=0.144-25.328; P=0.022]. Partner notification to testing positive for an STI had a strong significance effect on STI prevalence at [OR=0.447; 95%CI=0.862-1.393; P=0.013]. On the other hand, the number of sexual acts per week had no significant relationship with STI prevalence (28.6%) [OR=0.584; 95%CI=0.000; P=1.000]. The results were in sync with key informants who indicated that having multiple sexual partners and engaging in anal sex without using protection increases STI contraction. Further, other key informants indicated that majority of MSM turning positive of STI do not inform their partners leading to increased risk of contraction.

Conclusion: MSM on PrEP are afflicted with STI prevalence and based on the findings, this is majorly associated with sexual behavioural patterns such as lack of use of condoms especially with paying clients, not using condoms during anal sex, and engaging in different sexual typologies. The study therefore, recommends that the Ministry of Health through National and County governments, development and implementation partners strive to reach as many MSM as possible on PrEP with health services geared to lower the STI transmission rates, with persistent messaging encouraging condom use continuously.

2. Building Capacity for Surgical Research to Improve Outcome of Surgical Patients: A COSECSA global surgery mentorship program

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Co-author: Stella Itungu

Affiliation: The College of Surgeons of East Central and Southern Africa (COSECSA)

Introduction: More than 90% of the 5 billion people lacking access to surgical care are from Africa where there is less than 1% of global research output [1,2]. With surgically treatable conditions comprising 1/3rd of the global burden of disease, investing in surgical research for surgical systems strengthening is urgently needed.

Aim: To develop Surgical Research Capacity to improve patient outcomes in the East, Central and Southern Africa (ECSA) region.

Methodology: This is an Implementation Science Program using mixed methods, enrolling a cohort of 10 COSECSA fellows and trainees and provide them with; prospective mentorship, small research grants and research training for a duration of 1 year. We incorporate a 1-week attachment program to selected COSECSA Surgical Training Sites to give understanding of the region gaps for generation of context-relevant research question. Outcomes are evaluated using the Implementation Research Logic Model at individual level (skills acquisition) and program level (regional impact).

Preliminary results: A 20 credit point online Research Methodology Course (RMC) and a Research Mentorship Program (RMP) have been developed. We noted a high interest among surgical teams on the two programs with a total of 105 and 206 applicants with acceptance rates of only 6.7% and 24.3% for the RMP and RMC respectively. The 7 ongoing projects are

covering various research topics aiming at feeding data to the national strategies to improve surgical care. Training and mentorship outcomes will be done at the end of the program.

Conclusion: A strong surgical system is an indicator of a strong overall health system. COVID-19 pandemic has shown us that many of the necessary components of a strong surgical system parallel the needs required for a timely, robust response to pandemics. This program will create a network of surgical providers who able to produce evidence that will not only improve access and quality of surgical care but also the resilience of the larger health system in the ECSA region.

3. Unseen Passengers: Revealing Bacterial Contamination on Public Buses Through Metagenomic Analysis

Corresponding author: Davis Kuchaka

Co-authors: Mariana Shayo, Judith Njau, Boaz Wadugu, Happiness Kumburu, Tolbert Sonda

Affiliation: Kilimanjaro Clinical Research Institute, Tanzania

Background: Public transportation, including buses, is a critical mode of travel for millions of people, facilitating urban connectivity and economic activities. However, frequent usage and high passenger volume expose various surfaces within buses to bacterial contamination, raising concerns about potential health risks. Bacteria, being ubiquitous microorganisms, can persist on surfaces and turn public buses into potential reservoirs for pathogenic organisms, thereby necessitating an understanding of the extent and nature of bacterial contamination for effective mitigation strategies. In this study, we investigated bacterial contamination on public buses leaving Moshi, Tanzania, for various destinations.

Methods: A total of 60 samples were collected from various hand-touch surfaces, including bus door handles, overhead carriers, seat armrests, and drivers' wheels. Swabs were taken using Amies/stuart Media swabs and transported to the Kilimanjaro Clinical Research Institute Biotechnology Laboratory for analysis. All swab samples were plated on blood agar and incubated at 37°C overnight for bacterial isolation. The isolated bacterial growth was used for DNA extraction. Microbial DNA extraction was performed using the Quick-DNA Fungal/Bacterial Miniprep Kit protocol. Metagenomic sequencing was carried out using the Illumina MiSeq platform, with taxonomic profiling done through GOTCHA.

Results: Out of 60 specimens, 59 grew cultures suitable for DNA isolation and sequencing. High bacterial relative abundance was observed in samples from bus door handles, overhead bus carriers, and the driver's wheels. Abundant bacterial genera in bus door handles included *Acinetobacter*, *Bacillus*, *Escherichia*, *Klebsiella*, *Pseudomonas*, *Salmonella*, and *Staphylococcus*, among others. Some bacterial genera were common across various sample types.

Conclusion: This study provides a snapshot of bacterial contamination in public buses in Tanzania. The results underscore the need for improved sanitation practices in public transportation to protect passengers' health.

4. Evaluating the Efficiency of the DHIS2 system in COVID-19 Surveillance, Case Study: Nairobi Cosmopolitan County

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Co-authors: James Mutisya, Owaka Arach, Francis Musili, Samson Limbaso, Samoel Khamadi

Affiliation: Centre for virus research, Kenya Medical Research Institute, Kenya

Background: DHIS2 is an open-source software designed for collecting, verifying, analysing, and presenting individual (tracker) and summarized health-related data, customized for integrated health information management tasks. It was created by the Health Information Systems Programme (HISP) in partnership with the University of Oslo and is a web-based modular software package constructed using open-source technologies. The DHIS2 in the Ministry of health Kenya database does not incorporate Covid-19 data. This has necessitated innovative ways of integrating data from pandemic records and general patient day-book into the national DHIS2 database to aid surveillance activities and reporting.

Methods: DHIS2 is a standalone system that operates on Tomcat, a java application servlet container, linked to a PostgreSQL database. The Covid-19 surveillance program was customized within the system, and visualizations created utilizing program data indicators. Individual data elements are collected when a patient is registered in the system. Data indicators are used to aggregate the data and generate reports. The system can display data visualizations and reports on the system dashboard, which can be utilized for data presentation.

Results: By piloting DHIS2, we have established a system that utilizes pre-programmed indicators to aggregate data, allowing us to generate reports based on the data collected. The user has the ability to choose the format of the report, including pivot tables, charts, graphs, and GIS mapped data.

Conclusion: The DHIS2 system is open source and can be adapted and expanded to include comprehensive individual surveillance data that can be shared through reports. This data is valuable in monitoring the incidence of various diseases including Covid-19. Data can be managed in various ways, including offline data synchronization, remote data collection via mobile devices, data aggregation and organization, and data visualization and presentation using charts, graphs, and pivot tables.

5. Results of Noncommunicable Disease-Focused Community Health Screening in Rural Rwanda

Corresponding author: Gedeon Ngoga

Co-Authors: Lillian Zerihun, Evariste Ntaganda, Josue Ukuri Sincere, Wellars Dusingizimana, Symaque Dusabeyezu, Innocent Kamali, Mutabazi Francis, Sheila Klassen

Affiliation: Partners in Health

Abstract: Non-communicable diseases (NCDs) such as hypertension (HTN), diabetes, and heart diseases cause an increasing burden of global morbidity and mortality, particularly in high poverty settings. This study aims to determine the prevalence of NCDs in rural Rwanda using targeted screening after training of NCD providers as part of the PEN-Plus strategy. The study was conducted following a one-week training on echocardiography and heart failure management for physicians and nurses from rural Rwandan district hospitals. Trainees then organized and conducted a one-week screening at local health centers in collaboration with local community leaders, Partners In Health – Rwanda, and the Rwandan Ministry of Health. A community messaging strategy invited individuals with shortness of breath, leg swelling, history of sore throat, pregnancy, and any other symptoms identified by community health workers to benefit from further screening to attend. All patients received a blood pressure (BP) to screen for HTN, a random blood glucose check to screen for diabetes, and a screening echocardiogram for cardiovascular disease. A total of 593 individuals attended the screening event, with 500 adults (84.5%, mean age 50 years), and 93 children (15.7%). 457 were women (77%). Among adults, 110 (22%) had known hypertension, 10 were pregnant, and 9 with known chronic lung disease. The mean systolic BP among adults was 133mmHg. There were 245 adult patients with BP >130 (49% of adults), 169 patients with BP >140 (34% of adults), and 22 patients with severe HTN >180 (4% of adults). Among echo findings, 30 of 593 patients had abnormalities, including 20 Left Ventricular (LV) hypertrophy, 3 LV systolic dysfunction, 2 mitral stenosis, 2 right ventricular dilation, 1 pericardial effusion. Forty-eight patients received referrals to the NCD clinic for follow up, and 9 patients were referred to the district hospital or emergency room due to more urgent concerns. Although this study highlights a high prevalence of hypertension in this rural Rwandan cohort, it also shows a non-negligible burden of heart failure which may represent a significant burden of undiagnosed and untreated cardiac disease in the Rwandan population. Due to the long term and fatal complications of both hypertension and heart failure, there is a strong need to prioritize training to improve early detection for chronic severe NCDs in resource-limited settings and strengthen infrastructure for decentralized care in rural high poverty settings using strategies such as PEN-Plus.

6. Integrating Survivorship in Cancer Control Work: The 2023 National Cancer Survivors Day Commemoration in Uganda

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Co-authors: Julian Nakiranda, Nandutu Brenda, Gloria Kitur, Hattie Maina, Chite Asirwa

Affiliation: Uganda Cancer Society, Uganda

Background: In 2013, the World Health Assembly passed a resolution on cancer. The resolution focuses on major reductions in premature deaths from cancer, improvements in quality of life and cancer survival rates by 2025 as affirmed under target 05 – stigma associated with cancer will be reduced, and damaging myths and misconceptions about the disease will be dispelled. It is against this background that UCS led the commemoration of National Cancer Survivors Day (NCS) on 22nd June 2023. This was to create an inclusive process where all stakeholders are engaged on issues around cancer.

Objectives: To create awareness about cancer and its risk factors and promote the importance of early detection and treatment adherence so as to increase survivorship; to increase knowledge among the population and dispel common myths and misconceptions about cancer; to take stock of the progress made in the implementation of cancer control plans (at global and national) and strengthen the commitments towards ensuring a cancer free Uganda.

Methods: Mobilization for the event was done through partnership with the districts, civil society and media campaigns. Activities of the event included a march-past with a brass band, survivor testimonies as well as cake-cutting.

Outcomes: A total of over 200 participants attended the event—cancer survivors, local government, civil society, media, policy makers, and security agencies etc. The event was posted on social media pages of Uganda Cancer Society (UCS), International Cancer Institute and Uganda NCD Alliance, among others. The Chief Guest, who is a renowned anti-cancer advocate in Uganda's parliament pledged to support UCS advocacy efforts. Deliberations at the event reechoed the need for the population to be sensitive to risk factors including tobacco usage, body activity, proper diet with emphasis on vegetables and fibre.

Conclusion: the community engagement activities - survivor testimonies, health talk sessions and screening, contributed to fostering hope, creating awareness, empowering the community, and improved stakeholder collaboration. Since information about cancer is still lacking on the countryside, it is recommended that the scope of the event be expanded across Uganda.

7. Content Uniformity and Invitro Dissolution of Amlodipine Half Tablets in the Kenyan Pharmaceutical Market, Conducted at Kabarak University, Kenya

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Co-author: Sarah Vugigi

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Background: Tablet splitting technique is a practice that is carried out in hospital and community pharmacies. The aim of this practice is to achieve dose flexibility, reduce tablet size, ease swallowing, and save cost. The technique is prone to variation in weight of split tablets, mass loss during splitting and a variation in content uniformity. The effectiveness of the practice is subject to the tablet characteristics, method of splitting and patient's knowledge of the skill. Tablet splitting can increase the risk of inaccurate dosing, uneven distribution of drug substance and potential loss of efficacy or adverse effects.

Aim: This study aimed at determining the effect of splitting Amlodipine tablets on weight variation, content uniformity and in vitro dissolution.

Methods: This study was conducted at Kabarak University, Pharmaceutical Chemistry and Pharmaceutics laboratories, from September 2022 to April 2023. Four brands of Amlodipine besylate tablets 10mg were acquired from Kenya pharmaceutical market. Weight variation test was conducted on 30 randomly selected tablets as per the European Pharmacopoeia. Content uniformity test was performed on ten tablets that were split into halves, with 10 split tablets selected randomly and subjected to the content uniformity analysis as per the European Pharmacopoeia. Dissolution test was carried out on 6 split tablets units, as per the British Pharmacopoeia.

Results: Weight variation test showed that the weight of the split tablets was within acceptable limits for all brands of Amlodipine tablets tested. Only one individual mass was outside the 85-115% limit of the average weight, being 83.87%. Three of the four brands complied with the content uniformity test. One brand had 2 split tablets having Amlodipine content out of the limit of 85-115%. Three brands complied with dissolution test requirement for Amlodipine tablets at S1 stage. The dissolved amount for each unit was more than Q+5%. One brand had at least 75% of the amount of Amlodipine (5mg) dissolved for the half tablets that were tested.

Conclusion: The tablet weight variation test results for the split tablets were within the pharmacopeial requirements limits, hence meeting the acceptance criteria for these parameters. The study showed significant variation in content uniformity and dissolution.

8. HIV Self-testing Uptake and Linkage to HIV Care among First-time HIV-positive Testers: Evidence from a National HIV Self-testing Program in Uganda

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Co-authors: John Baptist Bwanika, Rebecca Nuwematsiko, Dickson Kasozi, Hudson Baliddawa, Geoffrey Taasi, Rhoda K Wanyenze

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Background: HIV self-testing (HIVST) can help countries to achieve the first 95% global target if scaled-up across the country. However, while HIVST programs have been scaled-up nationally, these programs are rarely evaluated to inform further program scale-up and sustainment.

Objective: We evaluated the implementation processes and outcomes of Uganda's national HIVST program to inform future scale-up.

Methods: This cross-sectional study was conducted at 47 health facilities in 15 districts selected from five (Kampala, Central, Eastern, Northern, and Western) geographic regions between June and July 2022. Data were collected using a health facility assessment tool reinforced with structured questionnaires. The health facility assessment tool included a review of HIV self-testing records between January 2021 and May 2022 while structured questionnaires were administered to 2,006 oral HIV self-test kits recipients to document HIV self-testing uptake and linkage to HIV care following HIVST. Data were analyzed descriptively using STATA (version 16).

Results: Of the 115,304 kits delivered to the surveyed health facilities from the National Medical Stores between January 2021 and May 2022, slightly more than half (58%, 64,742) were delivered to two geographic regions (Kampala and Eastern) while 76% (85,568) were delivered to Health Center IVs and Hospitals. Of the kits delivered to health facilities, 99.7% (n=115,004) were distributed to potential end-users: 65% to those aged 25-49 years, 16% to those aged 18-24 years, and 7% to those below 18 years. Of the 2,006 kits recipients interviewed, 1,388 (69.2%) were primary recipients (i.e. picked the kits directly from the health facilities); 466 (23.2%) were sexual partners of primary recipients while 152 (7.6%) were other secondary recipients. Uptake of HIV self-testing was high (96.2%, n=1,929) and did not differ among primary recipients (96%, n=1,337), sexual partners of primary recipients (95.9%, n=447) or other secondary recipients (95.4%, n=145). Overall, 170 self-testers (8.5%) reported a reactive HIV self-test result; of these, 77% (131) went for confirmatory HIV testing, and 92.4% (121) were

confirmed as being HIV-positive. Eighty-five per cent (103) of those with confirmed HIV-positive results were first-time HIV-positive testers; of these, 98% (101) were linked to HIV care.

Conclusion: Uganda's HIVST program has achieved high HIV self-testing uptake, identified a high proportion of new HIV-positives, and high linkage to HIV care. However, the limited coverage of HIVST services limited universal access to potential users, calling for innovative strategies to scale-up the program to reach more geographic areas and population sub-groups.

9. Effectiveness of Anti-tuberculosis Treatment among Patients Receiving Highly Active Anti-Retroviral Therapy in Nairobi, Kenya

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Introduction: Tuberculosis (TB) remains the leading cause of death among HIV-infected people. HIV-infected people are 18 (15–21) times more likely to develop active TB disease than those who are HIV-non-infected. Even when on antiretroviral therapy (ART), HIV-infected are 3 times more likely to die during TB treatment. In Kenya, there is need for proper coordination of antiretroviral therapy (ART) and tuberculosis (TB) treatment as most (60%) of the TB patients are also human immunodeficiency virus (HIV) infected.

Objective: This study aims to determine the difference in response to TB treatment among HIV-infected TB patients and HIV-non-infected TB patients receiving delayed highly active antiretroviral therapy (HAART) in Nairobi-Kenya.

Materials and Methods: A total of 116 patients were diagnosed using direct smears from sputum prepared and stained using the Ziehl-Neelsen procedure. The patients were offered HIV testing and counseling and then categorized into category A (PTB with HIV n=50) and category B (PTB without HIV co-infection n=66). They were put on the same TB chemotherapy of a short course comprising of: Two months of Rifampicin-R, Isoniazid-H, Pyrazinamide-Z, and plain Ethambutol-E, followed by six months of Ethambutol and Isoniazid. The main outcome measured was the sputum conversion rate from positive sputum to negative sputum. One-way analysis of variance (ANOVA) was used to test the null hypothesis.

Results: Of the 116 patients recruited for the study, 50 patients (43%) were found to be HIV positive and were put on HAART. The other 66 patients (57%) were HIV-negative. The sputum conversion rate for HIV-positive TB patients after two months and five months of chemotherapy was 88% and 94%, respectively. The sputum conversion rate for HIV-negative TB patients at two months and after five months of chemotherapy was 92 and 97%, respectively. However, there was no significant difference in the bacteriological outcome responses to TB chemotherapy between the two groups.

Conclusion: The high sputum conversion rates in the two groups indicated good control and management of TB. Findings in this study indicated that delayed use of HAART during TB treatment leads to better outcomes in TB treatment. The study recommends more concerted efforts to provide TB treatment to HIV-positive TB patients in Kenya.

10. Evaluation of higher serological threshold prevalence for stopping mass drug administration in Onchocerciasis elimination in Tukuyu focus, Tanzania

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Description: Introduction: Globally, mass drug administration (MDA) with ivermectin is the primary strategy for elimination of onchocerciasis. MDA may be stopped if programs demonstrate meeting the criteria set by World Health Organization (WHO) of attaining serological prevalence of <0.1% in children. Since this criterion is challenging to attain after decades of MDA, higher seroprevalence need to be evaluated and validated to help decide stopping MDA. Therefore, this study evaluated whether MDA can be safely stopped at a serological threshold prevalence of <2% in the Tukuyu focus of Onchocerciasis in Tanzania.

Methods: The on-going study is being implemented for five years in three phases; in phase one baseline data were collected in 2021 to determine if the prevailing seroprevalence was $\leq 2\%$ for and < 1 fly/2000 infective flies by O-150 pool-screen PCR or $< 1/1000$ parous flies. After stopping MDA, surveillance is planned in second phase for three consecutive years (2022-2024) to confirm ensure that recrudescence of disease is not occurring. At the end of second phase in 2025, a final evaluation will be done to confirm transmission has remained lower than 2% and that entomological criteria specified are met. Therefore, we are presenting results of baseline and first year of the surveillance phase.

A total of 2000 children 5-9 years old were randomly sampled in 20 villages stratified by prevalence. Additional five first line villages associated with each vector catching site were evaluated, though the results were not included in the overall seroprevalence. Finger prick blood was collected for preparing dry blood spots (DBS). Collected DBS were analyzed for detecting IGG4

antibodies of *Onchocerca volvulus* (OV) using OV-16 rapid diagnostic test (RDT) and OV-16 ELISA method. Collection of a minimum of 6000 wild adult blackflies using human bait landing collection methods for determining vector infectivity rate through Pools screening PCR-ELISA.

Results: A total of 2,561 DBS were sampled of which 491 were from purposively selected first line villages. The seroprevalence was found to be 0.045% by RDT and 1.21% by ELISA. In year 2 of second phase, 809 children were sampled with seroprevalence of 0.12% by RDT; ELISA results are pending. A total of 13,204 blackflies were caught and analyzed. The results for baseline data are inconclusive and subject to standardization of diagnostic tools.

Discussion and conclusion: The serological data presented are consistent with the hypothesis that it is safe to stop MDA for Onchocerciasis at a higher threshold, but more follow-up data are needed to demonstrate this including confirmation with entomological indices.

11. Evaluation of Malaria Outbreak Detection Methods, Uganda, 2022

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Background: Uganda adopted the 75th percentile method for malaria 'outbreaks' detection from the three World Health Organization-recommended methods [the 75th percentile or mean+2 standard deviations (2SD) (for high-transmission areas), and cumulative sum (C-SUM) methods (for low-transmission areas)]. However, the 75th percentile and mean+2SD methods are used interchangeably by districts. We evaluated these approaches to compare their outbreak-signaling outputs in Uganda for improved malaria outbreak detection and response.

Methods: We calculated thresholds for the three recommended methods using historic data from the health management information system (HMIS) weekly reports (2017-2021). Sixteen (16) districts with reporting rates above 80% were selected from 4 malaria transmission zones. We further applied the recommended adjustments of 85th percentile and C-SUM+2SD to notice any differences from the unadjusted methods. STATA software was used to obtain statistical significance using chi-square for the difference in weeks detected between methods.

Results: The number of outbreak weeks varied by method. For all regions in the various malaria transmission levels, there was a difference in outbreak weeks detected by the 75th percentile and mean+2SD method ($p\text{-value} \leq 0.001$). Outbreak weeks detected by the very sensitive C-SUM were not statistically significant 75th percentile in 69% of the districts. Outbreaks detected by the adjusted 85th percentile had no statistically significant difference from the 75th percentile in 63% of the districts. The adjusted C-SUM+2SD detected outbreak weeks equivalent to the mean+2SD ($p=1$) for all districts in the various transmission intensities.

Conclusion: The 75th percentile and C-SUM approaches were equally sensitive in most districts evaluated. This questions the appropriateness of the 75th percentile for medium and high-malaria transmission areas. The use of mean+2SD and C-SUM+2SD method for epidemic detection in medium to high-transmission areas and the use of 75th percentile and C-SUM methods for pre-epidemic warning could provide better malaria outbreak detection in high malaria transmission countries.

12. The Effects of Project Interventions on Community Programming, Nutrition, and Health Outcomes Among women and Children under 5 Years of Age in Rural Uganda

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Introduction and objectives: Malnutrition in Uganda remains a major cause of morbidity and mortality, especially among women and children under five years. Consequently, prevention and treatment of malnutrition is a priority. However, there is lack of systematic evaluation of what does or does not work to shape interventions better. The objective of this study therefore was to evaluate the impact of Uganda Community Connector Project interventions on selected nutrition and health outcomes among women and children under 5 years.

Methodology: The study design was a panel survey done before and after community intervention to understand nutrition-health interventions and child and maternal health outcomes across 6 districts in Uganda. The study focused on the mothers of children aged 0-59 months. A sample of 600 households per district was randomly selected for each round of data collection with an attrition rate of 11.2%. Quantitative data analysis used pre/post-intervention analysis and their influencing factors on nutrition and health outcomes. The impact of the program was through estimation using general study model.

Results: The prevalence of both maternal and child malnutrition did not change. Maternal underweight moved from 9% to 8% at the endline. Maternal anemia prevalence rates increased by 4% from 28%. Child stunting did not change across

intervention and control villages. The prevalence of child underweight increased to 12% from 11% at the endline. Child anemia increased by 5% (53% in intervention vs 49% in the control sites). The multivariate regression analysis $p < 0.05$, indicates the coefficient for childbirth weight shows that in intervention villages weighed 150-170 grams more at birth compared to those born in non-intervention villages. The coefficients on the impact of agriculture interventions show that it reduced the proportion of women with anemia by 6-8% but did not reduce maternal underweight. The interventions had a limited impact on birth weight, resulting in 150g of children born suggesting much stronger weight gain for children in intervention villages.

Conclusion: Although the magnitude of this effect may seem relatively small, it is essential to note that it signifies a positive impact of the interventions on birth weight outcomes and underweight over time compared with the control households. Given that many intermediate results that affect nutritional outcomes were positive such as increased production diversity, it can be concluded that longer intervention time coupled with much higher coverage and intensity of intervention of essential packages would translate into positive nutrition outcomes.

13. COVID 19 and HIV: Sars-Cov-2 Serotesting and Co-Infections Which Way to Go?

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Background: During the SARsCOV2 outbreak and subsequent epidemic 2019 to 2023, Polymerase Chain Reaction testing has remained the mainstay of COVID-19 diagnostics due its specificity and accuracy. At the same time, many serological tests including antibody-based were developed alongside the antigen testing. Soon after, antigen testing took a center-stage in LMIC. However, debate of the role of Antibody testing continues. Proposed utility of antibody testing includes; identify past infections, immunity to SARS-CoV-2 and potential provision for convalescent plasma.

Objective: In this study, we aimed at checking the concurrence COVID-19 and HIV using antibody testing among population of individuals undergoing screening at sites in Nairobi.

Methods: COVID-19 suspected Individuals from health facilities were informed of the purpose of the study. From those who consented, qualified medical personnel collected blood samples. Testing was done in KEMRI Laboratories, Nairobi. For SARsCOV2 antibodies testing, a Combo lateral flow assay that detected IgM and IgG in the patient serum was used. Determine HIV ½ rapid test Kit was used for HIV testing.

Results: In total, 146 participants were screened. Study population consisted of 50.7% female and 49.3% males. Mean age was 33.4years [SD 12.38] and mean temperature 36.005 [SD 0.585]. Of the total participants, 3.4% were HIV positive and 9.6% were COVID-19 positive by Rapid test. Confirmed COVID-19 positive were 14.4% out of which 9.5% were positive by COVID-19 antibody test.

Conclusion and recommendations: In conclusion, 3.4% of the study population was co-infected with HIV and COVID 19 sero-testing picked 9.5% of those positive by PCR. We recommend further studies on utility of antibody testing in order to determine the impact of COVID variants on serological testing, sero-surveillance for longevity of antibody in exposed or past-infected individuals and validation testing to follow a structured/policy guideline.

14. Prevalence and Determinants of Cisplatin-induced Nephrotoxicity among Cancer Patients at Nakuru Level V Hospital

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Background: Cisplatin is one of the mainstay drugs in chemotherapy regimens in Kenya. This drug however is been associated with nephrotoxicity. However, there is limited literature on this matter from African countries. This study sought to determine the prevalence and risk factors for the development of nephrotoxicity after receiving cisplatin as well as the efficacy of preventive strategies.

Methods: A retrospective study design was applied to review records of 157 patients treated between 2018 and 2022 at Nakuru Level V Hospital's cancer centre. Therapeutic interventions were presented using descriptive statistics, and their efficacy a tested by simple proportions according to the incidence of CIN for each strategy.

Results: 61% of patients developed cisplatin-induced nephrotoxicity (CIN). Only 29% of subjects had comorbidities, which did not increase the chance of developing nephrotoxicity while undergoing treatment ($p=0.683, 95\%$). The use of normal saline (NS) only was three times more likely to cause cisplatin-induced nephrotoxicity than the combinatorial use of normal saline, mannitol, electrolytes and normal saline. Female patients were 14 times (OR: 14.3535) more likely to develop CIN (79 females versus 18 males).

Conclusion: Over half of the patients developed CIN during treatment. Comorbidities did not increase incidence of CIN. Combinatorial use of NS, mannitol, electrolytes was the best preventive strategy. Female patients had a higher risk of developing CIN.

Recommendation: We recommend that caregivers replace the use of NS-only with combinatorial use of the electrolytes, NS and mannitol. Female patients should also be monitored more closely for CIN. Other preventive strategies for CIN should be explored.

15. The Lived Experiences and Caring Needs of Women Diagnosed with Cervical Cancer: A Qualitative Study in Dar es Salaam, Tanzania

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Background: Cervical cancer continues to be a major global public health concern affecting the lives of many women with increasing costs of treatment. In 2020, cervical cancer was the seventh most commonly diagnosed cancer worldwide with Tanzania being ranked fourth among the countries with the highest incidence rates (Arbyn et al., 2021 & Levin et al., 2022). The lived experience and caring needs of patients and their families provide insights into the psychosocial aspects of caring for the affected population. This study aimed to explore the lived experiences and caring needs of cervical cancer patients at Ocean Road Cancer Institute (ORCI) in Dar es Salaam, Tanzania.

Methods: A qualitative descriptive study was carried out among cervical cancer patients at ORCI in Dar es Salaam, Tanzania. Using a purposeful sampling technique, 12 cervical cancer patients were interviewed with the principles of saturation guiding sample size determination. A semi-structured face-to-face interview guide was employed to collect the information. A conventional content analysis approach was used to analyze data after translation with the aid of NVivo 12.0 computer software.

Results: Five themes emerged after data analysis including:

Knowledge and attitude about cervical cancer

“Also, other brothers think that this disease is not healing, that is, they think why should we give our money to someone who has already been infected with this disease. They do not believe that this treatment is curative, so they don’t believe I will recover” (Participant 10).

Sufferings from a disease process

“I was very shocked when I was at home because the blood was coming out too much, I was a bedridden person and the blood was not cutting at all. Until I came here, I’m thankful, I have done the treatments and nowadays the blood comes out a little” (Participant 9).

Socio-economic disruptions

“My personal life has been affected, when I was growing up I was looking for a job to earn an income. Right now, I’m stuck because I’m sick. Also, my child’s life has been affected because my child does not have a job, he always does people’s work. Up to now, my grandchildren have not gone to school since the school opened. He is struggling to find the money for treatment and his children. The grandchildren have been suspended from school because they have no shoes, they don’t have the things needed at school” (Participant 9).

Psychological problems

“I feel bad, very bad because they don’t support me in this situation. . .that is, out of ten people in the family, only three are in contact with me. . .Now I don’t know, maybe due to the difficulty of life, that’s why they don’t give me help, I don’t know actually and I don’t understand what is behind this tragedy, because others have good financial abilities, but I don’t understand why they don’t support me” (Participant 3).

Sexual and reproductive concerns

“I stopped sharing with my husband because I was really scared. I told him that it was for the sake of my life rather than giving birth later on, so I only did a little with him. He is a colonist, he doesn’t realize that this person is sick, so sometimes I run away from him because I consider myself weak and no longer fertile” (Participant 8).

16. Strengthening the Surveillance, Early Detection of Rifampicin and Second Line Drug Resistant Tuberculosis from January 2022 to 15 April 2023, Kigali-Rwanda

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Introduction: Drug resistant tuberculosis is a growing global public health threat. By 2018, almost the half of a million were newly diagnosed as having Rifampicin resistant tuberculosis. In 2019, 3.4% with new bacteriologically confirmed pulmonary tuberculosis were rifampicin resistant tuberculosis. By June 2020, the RR tuberculosis burden in Rwanda was characterized by its prevalence of 1.4% and 4.9% respectively in new and previously treated TB cases. In the same year, the coverage of DST for bacteriologically confirmed pulmonary TB was 95.6%, but for the second-line, it was 65.8%. We aimed to monitor the timely DST performance and its comparison to Xpert result for RR Tuberculosis confirmed using Xpert technology.

Methods: Routinely collected culture and DST data were entered into the excel data set on weekly basis at National Reference Laboratory level. The timely DST performance was calculated among all RR tuberculosis notified from January 2022 to 15 April 2023 in Rwanda. DST results comparison to Xpert results was done using the Xpert results generated at National Reference Laboratory.

Results: Among received samples, 22% were from female patients and 9.5% were from 55 and more years of age, 43% and 34.3% were positive on FM and FDA respectively. For all received RR samples during the period, 14.6% were confirmed RR at NRL level after Xpert repetition. For the received samples, 8.8% became RR while Rifampicin Sensitive on Xpert. In regard to the phenotypic DST, only 23.4% were confirmed resistant on the first line but no sample was resistant on the second line. For all eligible samples, second line DST performance was at 47%.

Conclusion: There is a need to improve timely DST performance and reporting as well. There is a remarkable discordance between Xpert results and testing hubs compared to the Xpert at NRL.

17. Effectiveness of Community-based Triple Assessment for Early Detection in Breast Cancer Screening Outreach Program in Uganda

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Introduction: Globally, breast cancer remains a significant public health concern, including Uganda. However, limited access to screening and diagnostic services poses a challenge to early detection and timely intervention.

Objective: To explore the feasibility and usefulness of breast cancer screening utilizing mobile mammograms breast ultrasound scans and core biopsy procedures at community level during the breast cancer outreach program in hard-to-reach areas in Uganda.

Methods: From June 2021 to May 2023, a total of 100 community-based breast cancer screening outreaches were conducted across four regions in Uganda. The target population included 10,000 women aged 18 years and older who were actively mobilized through radio announcements, radio talk shows, and social media to participate in the screening program. The screening process involved initial assessment through clinical breast examination (CBE), followed by mammograms and/or breast ultrasound scans for individuals with positive CBE findings. For women with BIRADS >3, breast core biopsies were obtained and sent for histological analysis to confirm the presence of malignancy.

Results: A total of 9,145 participants were screened, with a median age of 36 years (IQR 27-46). Among the participants, 3,389 (37.1%) were aged 30 years and younger, and 714 (8.9%) reported no education level. Only 1,198 (13.1%) had undergone clinical breast examination (CBE) within the past 12 months. Breast cancer symptoms were reported by 3,755 (41.1%) women, with the most common symptoms being breast lump (21%), nipple discharge (8.0%), and breast pain (32.8%). A total of 900 mammograms and 1,231 ultrasound scans were requested, resulting in completion rates of 99.2% and 87.1%, respectively. The mammograms were classified according to the Breast Imaging Reporting and Data System (BIRADS), with 72 cases categorized as BIRADS 4, 8 cases as BIRADS 5, and 1 case as BIRADS 6. Additionally, a total of 82 biopsies were requested and, out of which 66 were completed using Core needle biopsy procedures. Among the completed biopsies, 32 cases were identified as malignant. The prevalent histological subtypes of the malignant cases were as follows: ductal carcinoma (59.4%), lobular carcinoma (21.9%), papillary carcinoma (12.5%), and mucinous carcinoma (6.3%).

Conclusions: The results highlight the importance of community breast cancer screening programs and their impact on early detection in resource-limited settings. These findings emphasize the need for continued investment in breast cancer screening initiatives and improved access to diagnostic services in Uganda, ultimately leading to improved outcomes and reduced breast cancer-related morbidity and mortality.

18. Developing an Early Warning System for Childhood Diarrhea Outbreak in Tanzania

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Background: Diarrhea is the second leading cause of death in children under five years old worldwide, causing approximately 1.7 billion cases and 525,000 deaths annually. Tanzania being among low-middle income countries is still facing a high childhood diarrhea prevalence of about 12.10%. The diarrhea burden is associated with poor household hygiene and sanitation practices, late showing into hospitals, poor surveillance systems, and poor outbreak detection mechanisms. Currently, disease-event reporting works as a mechanism for outbreak detection in Tanzania. This method fails to detect early outbreak signs, giving a chance for an outbreak to occur without any intervention measure.

Aim: To develop a machine learning model that can timely predict diarrhea outbreaks among under-five children and integrate it into the disease surveillance system in Tanzania.

Expected Outcome: Improved detection will enable preparedness and response for prevention and control of diarrhea outbreaks and reduction of morbidity and mortality among under five children.

Materials and Methods: This will be a cross-sectional study from regional referral hospitals in Tanzania. Epidemiological data will be collected using DHIS2 tool, meteorological data will be sourced from local Tanzania Meteorological Authorities (TMA). Data pre-processing will be performed for diarrhea outbreak model development that will predict outbreak. Depending on the distribution of data Classification algorithms such as logistic regression, K-nearest neighbor, Naive Bayes, Support Vector Machine (SVM), Random Forest (RF), Artificial Neural Networks (ANN) and decision trees will be considered for model development. The highest scoring model will be selected and used for diarrhea outbreaks.

Expected findings: The developed model is expected to be more sensitive by detecting more cases of diarrhea compared to existing event-based methods.

Conclusion: In order to respond to outbreaks we believe we need to invest in robust machine learning models and analytics. Routine data should be integrated and utilized as a means for timely prevention and control of diarrhea outbreak, its morbidities and mortalities among under five children.

19. Informing National Policy to Introduce Maternal COVID-19 Vaccine in Kenya through Rapid Evidence Synthesis

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Background: Pregnant and recently pregnant women are at an increased risk of getting severe COVID-19 disease as compared to their non-pregnant peers. In 2021, The Ministry of Health via the National Vaccines and Immunisation program asked the Kenya National Immunization Technical Advisory Group (KENITAG) for guidance on introducing Maternal COVID-19 vaccination in Kenya. We report on methods in generating rapid evidence to guide national policy about vaccinating against COVID-19 in pregnant and lactating mothers.

Methods: We followed a rapid review approach recommended by the COVID-19 Evidence Network to support Decision-making (COVID-END). Guided by the hierarchy of evidence we prioritised recent systematic reviews and searched for evidence about vaccine performance (efficacy, effectiveness, safety) and programmatic considerations (acceptability, feasibility, and costs). Broad Literature searches were conducted across various databases and relevant websites. Screening and data extraction was done by four reviewers independently and evidence was synthesised narratively. We used a measurement tool to assess systematic reviews (AMSTAR-2) to judge the quality of identified systematic reviews.

Results: We identified five recent systematic reviews that focused on safety, efficacy and acceptability after screening titles, abstracts and full texts. Two included reviews were graded as high quality, one was graded as low quality and two graded as critically low quality. Most of the data from systematic reviews were from high income settings and published data on safety and efficacy of COVID-19 vaccines were on mRNA vaccines (Pfizer and Moderna) demonstrating high efficacy and safety. Only data from one African country (South Africa) was included in systematic reviews. Two systematic reviews reported on acceptability citing low acceptability of COVID-19 vaccination especially in Africa. There was paucity of data on program implementation aspects such as costs, feasibility and logistics. Relevant primary studies were not identified.

Conclusions: Rapid decision making can be informed by rapid identification and appraisal of existing systematic reviews and if necessary recent primary studies. Where there is limited evidence, recommendations for urgent situations can be made by extrapolating from indirect evidence from other settings with similar populations, from similar vaccines, by adapting global guidelines and by drawing on the expertise of the guideline group.

20. Implementation of Policies and Strategies for Control of Non communicable Disease in Tanzania: Challenges and Opportunities

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Abstract: Tanzania is among the East African country experiencing the epidemiological transition from predominantly infectious to noncommunicable diseases (NCDs) with dramatically increasing prevalence of lifestyle-related diseases such as obesity, hypertension, and diabetes. Tanzania 2021-2026 Health Sector Strategic Plan V included NCDs, and an NCD Control Program was established with subsequent development of a National Action Plan for prevention and management of NCDs launched in 2022. The current study was designed to identify gaps in implementation of NCD control program policies and action plan strategies by describing current efforts toward prevention and management of NCDs in Tanzania with emphasis on challenges and opportunities.

Methods: Semi structured questionnaires were used to collect quantitative and qualitative data from Tanzania Ministry of Health personnel and Presidents Office Regional Administration and Local Government (senior officers, service providers, health education officers, and nutritionists) in 27 district Hospitals and 9 Regional Referral Hospitals. Frequencies were generated for quantitative data. Qualitative data were used to generate themes and most common responses.

Results: Results showed that current services focus on facility-based NCD screening and clinical services rather than active screening, prevention, and community awareness and outreach, although respondents emphasized the importance of prevention, lifestyle education, and community outreach. Respondents indicated inadequate resources for NCD services including financial capital, human resources, equipment and supplies, and transportation.

Conclusion: While Tanzania has begun to address NCDs, policy and practice implications include (a) better integration of services within the existing infrastructure with emphasis on capacity building; (b) greater implementation of planned NCD activities; (c) a stronger, more comprehensive data management system; and (d) innovative funding solutions.

21. Strengthening Health Systems, Leadership, and Governance: Innovative Approaches for Managing Communicable and Non-Communicable Diseases

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Abstract: This abstract focuses on innovative approaches and interventions that aim to strengthen health systems, leadership, and governance to effectively manage communicable and non-communicable diseases (NCDs). It acknowledges the urgent need to address the dual burden of diseases and underscores the importance of resilient health systems capable of addressing both infectious diseases and the growing burden of NCDs. The abstract explores diverse innovative strategies and interventions employed to bolster health systems, including technological advancements, digital health solutions, community engagement, and multi-sectoral collaborations. Additionally, it highlights the critical role of strong leadership and governance in driving policy reforms, resource allocation, and coordination to enhance disease management efficiency. The abstract concludes by emphasizing the potential impact of these innovative approaches in enhancing health outcomes, reducing health disparities, and fostering sustainable development.

22. Cancer Patterns in Arua District, Uganda

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Introduction: Cancer is the second leading cause of mortality worldwide with over 19 million cases worldwide and 10 million deaths (Globocan, 2020). Available data on cancer patterns in Uganda is through modelling of data from two Population Based Cancer Registries (PBCRs) representing only about 10% of the cancer situation in Uganda hence warranting the need for more epidemiological studies to describe the patterns of disease in Uganda. This study sought to find out the common cancers amongst adult males, adult females and children in Arua over a five-year period (2017 to 2021).

Methods: The study employed a retrospective cohort chart review and a "catchment population approach". All newly diagnosed cancer patients from Arua between 2017 and 2021 were included in this study. Data entry was done using Redcap, management and analysis done using stata 17. Cancer patterns were computed as frequencies and percentages and interest was in finding out the common cancers among adults (above 19 years), and children (0-19 years).

Results: Over the five year study period, a total of 1118 new cancer cases were registered in Arua district, with 52.1% females. The five common cancers overall, irrespective of sex and age were Hepatocellular Carcinoma (HCC), 13.7%, Cervix (11.8%), Breast (10.7%), Esophagus (10.5%) and Burkitt's lymphoma (BL) (6.4%). In this study, 15.3% (n=171) of the study participants were children. The five common childhood cancers were BL (42%), leukemia (10.5%), other lymphomas (9.4%), Osteosarcoma (4.7%), and Nephroblastoma (3%).

Conclusion: The over representation of HCC in Arua district could be attributed to the high prevalence of Hepatitis B (HBV) in the West Nile sub region where Arua district is located. The high levels of Cervix, Breast and Esophagus were consistent with what is seen by the two PBCRs in Uganda. However, BL could be due to the presence of a BL treatment center at Kuluva hospital in Arua. Cancer control planning interventions in Arua should therefore be targeted towards HCC, by encouraging HBV vaccination, but also routine testing. There should be ongoing screening for breast and cervical cancer in the district but also, the government should plan on decentralizing Endoscopy services to the people of Arua. Further research could be carried out on the reason for the high incidence of HCC in Arua district.

23. Socio-cultural Factors for Poor Mental Health Outcome amongst Women in Garissa County, Kenya

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Background: Mental health burden is emerging to be one of the most pressing issues in health care today. According to Institute of Health Metrics and Evaluation (2019), 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders the most common. Mental health is strongly determined by diverse factors including socio-cultural practices, economic and religious beliefs among others.

Methods: This study was conducted in Garissa County, Kenya - a community that has deeply ingrained cultural and religious traditions that influence and often inadvertently impede the mental health of women. The study adopted a qualitative research approach. Guided by the socio-ecological model, this study sought to explore what key stakeholders perceive as the mental health conditions present among women and the socio-cultural factors associated with the mental health outcomes of women in Garissa County. The study participants were married and unmarried women aged 18 to 39 years. Data was collected through 3 focus group discussions (12 participants each) and 20 key informants. Data was analyzed using thematic content analysis.

Results: Results show that women who have undergone female genital mutilation/circumcision presented with low self-esteem, depressive symptoms, sex anxiety, avoidance of reminders and intrusive memories of the event. Other risk factors for poor mental health outcomes include beliefs that mental health conditions are due to supernatural forces, witchcraft and curses (evil eye), and is viewed as contagious. Consequently, individuals with mental illness are neglected, abused and stigmatized. Preferred treatment approaches include prayers and use of witchdoctors and traditional healers.

Recommendations: This study recommends culturally responsive interventions that are geared towards increasing community awareness and knowledge on mental health, reducing stigma and improving mental-health-seeking behaviors are needed. The approach can be spearheaded by trained community lay counselors.

24. Substance Use among Adolescence in Rwanda: Prevalence, Correlates and Policy Implications

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Background: Drug and substance abuse is a frequent phenomenon among adolescents and young adults worldwide. However, there is generally paucity of data on this phenomenon in low- and middle-income countries. Earlier age at drug initiation has been shown to be associated with faster transition to substance use disorder (SUD) (Volkow et al, 2021). The current study aimed to establish the prevalence and associated factors of substance use among adolescents in Rwanda.

Methods: Participants were 3301 adolescents and young adults aged between 13 and 24 years, drawn from community-based samples from 7 selected districts.

Results: Overall, the prevalence rate of substance use over the month prior to the survey was 28.5% for alcohol; 4.4% for cannabis, 2.9%; for cigarettes, opiates and cocaine was respectively 2.9%; 0.2% for opiates; 0.1% for cocaine. Current use of alcohol and other substances was significantly associated with age >18, male gender, living in urban areas, history of unintended pregnancy, family history of alcohol or drug problem, family conflict, serious physical violence in the family circle, and history of anxiety and depressive disorders. Furthermore, drug and alcohol use were found to be associated with sexual ill events.

From 2021, the ministry of health and its partners have started to implement a school-based mental health program aiming to tackle, among others, substance use among adolescents in Rwanda.

25. The prevalence of Gestational Diabetes Mellitus and Associated Risk Factors among Women Attending Antenatal Care in Health Facilities in Unguja-Zanzibar

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Introduction: The prevalence GDM has been rising worldwide, including in sub-Saharan Africa. However, limited information is available regarding GDM and its associated risk factors in Zanzibar. The contributing of factors like advanced maternal age, obesity, history of diabetes, and lifestyle to the burden of GDM in Zanzibar. The objective of this study is to determine the prevalence of GDM and associated risk factors among women attending antenatal care in Unguja, Zanzibar.

Methodology: This facility-based quantitative cross-sectional study. Participants were screened for GDM using the IADPSG 2017 criteria, and data on socio-demographics, medical and obstetric history, lifestyle, and anthropometric characteristics were collected using a structured question. Descriptive statistics were used to summarize the data, while bivariate and multivariate analyses were performed to identify factors associated with GDM. Crude and adjusted prevalence ratios were calculated using modified Poisson tests, with statistical significance set at a p-value of 0.05.

Results: Out of the 405 pregnant women were screened, the prevalence of GDM was 13.8%. The majority (43.21%) had a GA of 28 weeks, with a mean GA of 26.25 (SD: 0.08) weeks. Significant risk factors for GDM included maternal age over 40 years (aPR = 2.00, 95% CI: 1.227, 3.272), history of hypertension (aPR = 11.22, 95% CI: 6.475, 19.450), history of macrosomia (aPR = 6.417, 95% CI: 4.223, 9.752), obesity (aPR = 1.697, 95% CI: 0.987, 2.917), alcohol use (aPR = 2.208, 95% CI: 1.130, 4.315), and frequent consumption of carbohydrates (aPR = 0.257, 95% CI: 0.075, 0.879).

Conclusion: Findings of this study re-affirm that GDM is also a problem in Zanzibar; the associated risk factors being maternal age, a history of macrosomia, alcohol uses, carbohydrate consumption, obesity, and a history of hypertension. Routine screening for GDM should be included in the focused ANC.

26. Detection of Pathogens Associated with Acute Febrile Illness among Children of Under-five Years of Age from Health Facilities in Agro-pastoral Rural Manyara, North-Eastern Tanzania

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Background: Acute febrile illness (AFI)-causing pathogens are multiple and diverse while symptoms are similar and are rarely distinguishable between causative pathogens. Reports for aetiologies of AFI are limited in Tanzania due to limited diagnostic methods available. This study utilized a sensitive and specific molecular-based assay taqman array card (TAC) to detect the presence of pathogens associated with AFI in children of under-five years of age, from health facilities in agro-pastoral rural Manyara, north-eastern Tanzania., investigations of these pathogens inform appropriate interventions and possibly diagnostic development.

Methods: A retrospective cross-sectional study was conducted using archived EDTA blood samples collected from children with body temperature $\geq 38^{\circ}\text{C}$ both outpatient and inpatient at Dareda and Haydom hospitals in Manyara region of north-eastern Tanzania between November 2015, and March 2016. Total nucleic acid was extracted from the blood sample and TAC were used to detect thirty-three pathogens including 16 viruses, 14 bacteria, and 3 protozoa. Continuous variables were summarized using median and range and inter-quartile ranges while categorical variables were summarized as frequencies and percentages using R version 4.1.3.

Results: A total of 247 children's samples were included in this study. The median age was 2 years, ranges from 1-5 years. Out of the 247 children, 59 (24%) had at least one pathogen detected and 8 (3%) had more than one pathogen. Malaria cases were twelve (4.9%) while 47 (19%) were non-malaria cases. Zoonotic bacteria were detected more of which 29 (11.7%) had zoonotic bacteria such as (*Brucella* spp 18 (7.3%), *C burnetii* 4 (1.6%), *Bartonella* spp 3 (1.2%), *Rickettsia* spp 3 (1.2%) and *Leptospira* spp 1 (0.4%) whereas arbovirus (dengue virus) was detected in 14 (5.7%) cases.

Conclusion: Findings from this study suggest that, apart from malaria, dengue virus and zoonotic bacteria such as brucellosis, bartonellosis, Q fever, rickettsiosis and leptospirosis could likely be a potential predominant cause of acute febrile illness in agro-pastoral communities in Manyara north-eastern Tanzania. There is need to consider other AFI causing pathogens in routine diagnosis of febrile illnesses especially in under-five aged children.

27. Improving Maternal and Child Health Outcomes through Targeted Interventions to Enhance Early Antenatal Care Seeking and First Visit HIV Testing: Kwimba District in Mwanza Region, Tanzania (Programmatic Learning)

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Introduction: Antenatal care (ANC) is a critical component of maternal and child health programs, aiming to safeguard the well-being of pregnant mothers and their unborn children. Ensuring effective utilization of ANC services and early detection of health conditions during pregnancy are vital for enhancing health outcomes and promoting the overall well-being of mothers and children in the region. The integration of HIV/AIDS services with antenatal care is a critical aspect of the fight against HIV/AIDS transmission. This study aimed to assess the level of early attendance to ANC among pregnant women and evaluate the prevalence of HIV+ cases during the first ANC visit from 2019 to 2022 in health facilities within the Kwimba District, in Mwanza, Tanzania.

Methodology: A retrospective cross-sectional study design using a quantitative approach was conducted, involving 54 health facilities from Kwimba District in Mwanza Region, Tanzania. Secondary data were retrieved from the DHS-2 system, containing annual reports from 2019 to 2022. Data cleaning and descriptive analysis were performed using Microsoft Excel, and descriptive statistics such as proportions and average were used to interpret the data and identify yearly trends. Ethical clearance for using the secondary data was obtained from NIMR Mwanza office.

Results: The analysis revealed significant trends in ANC utilization and HIV detection among pregnant women in the Kwimba District, in Mwanza region from 2019 to 2022. The proportion of early attendance to ANC among pregnant women in health facilities kept declining from 29.64% in 2019, 29.36% in 2020 to 23.18% in 2021, but showed a slight increase to 23.21% in 2022. On the other hand, the proportion of pregnant women who attended at least 4 visits to ANC clinics exhibited a positive trend, indicating an improvement in overall ANC utilization, increasing from 71.41% in 2019, 85.72% in 2020, 94.77% in 2021, and 91.44% in 2022. Regarding early HIV detection during the first ANC visit, the proportion of HIV-positive cases among pregnant women showed a positive trend, decreasing from 0.83% in 2019, 0.68% in 2020, 0.51% in 2021, with a further decline to 0.48% in 2022.

Conclusion: The findings suggest that while there has been an improvement in overall ANC utilization, there has been a concerning decrease in early attendance to ANC clinics among pregnant women in Kwimba District, in Mwanza region. These results emphasize the importance of targeted interventions to enhance early ANC seeking and first visit HIV testing to improve maternal and child health outcomes in the region. Further research and efforts to address potential barriers to accessing ANC services and HIV testing are warranted to achieve better health outcomes for expectant mothers and their unborn children in Kwimba District, in Mwanza Region, Tanzania.

28. Cardiovascular Profile of Patients Undergoing Hemodialysis in Bujumbura: Findings from a Cross-sectional Survey Nested into a Cohort Study

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Background: In Burundi, there is a dearth of data on the cardiovascular profile of patients undertaking hemodialysis.

Objective: This study unpacked the cardiovascular profile and associated risk factors of patients enrolled in the hemodialysis program using a sample of hospitals in Bujumbura, Burundi.

Methods: We collected demographic, clinical, and laboratory data from 51 adults' patients undergoing regular hemodialysis for chronic renal failure across four nephrology centers in Bujumbura using patients records and direct interviews. We performed descriptive analyses and implemented discrete models to understand factors associated with cardiovascular complications.

Results: The average age was 49.98 ± 13.39 years, and male predominated (sex ratio: 2,64). In total, 68,63% of patients had cardiovascular complications namely left ventricular hypertrophy (43,14%), heart valve disease (19,61%), and pericarditis and systolic and diastolic dysfunction (17,65%). Arrhythmia and conduction disturbances were founded in 47% of patients. The multivariate adjusted analysis revealed that cardiovascular complications were associated with diabetes ($p = 0.041$), hypertension ($p = 0.035$) and alcohol use ($p=0.021$).

Conclusion: Cardiovascular complications are highly prevalent in patients undergoing hemodialysis in Bujumbura and diabetes, hypertension, and alcohol use are key determinants of these complications.

29. Monitoring of delays to Maternal and Neonatal Emergency care on Mfangano Island, Kenya

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Background: In rural Sub-Saharan Africa, preventable delays in accessing healthcare have been leading to high maternal and neonatal mortality rates. The study focuses on examining the impact of the “Three Delays” - recognizing the need for care, reaching care, and receiving care - within the communities living on Mfangano Island, Kenya. In 2019, an initial 12-month cohort study was conducted to quantitatively assess the interval of time for each delay. This initial study also identified factors influencing the delays, which was further investigated through a qualitative study in 2021.

Objectives: To understand the major factors impacting the “Three Delays”; To examine how the COVID-19 pandemic further influenced the factors.

Methods: Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were conducted to collect information on lack of information, healthcare staff unavailability, poor advice and mismanagement, and lack of finances. Through purposive sampling, we recruited 59 people who have experienced or were involved in a maternal or neonatal emergency on Mfangano Island. Detailed interview guides were developed for FGDs and KIIs. Participants' responses were recorded in Luo and translated into English for transcripts. For data analysis, responses on the transcripts were coded and categorized collectively by the research team according to the major factors categories and condensed into a qualitative table (Attached). The independent variables included: proximity to the nearest health facility, education, and monthly household income, the use of the Health Navigation Emergency Boat and other modes of transportation to reach a health facility, impact of COVID-19: the curfews, lockdowns, and staff and resource shortages. Dependent Variables included: Emergency Delay Intervals in (Recognizing Need for Emergency Care, Reaching Health Facility and Receiving Definitive Treatment at Health Facility, and Health Outcomes and factors contributing to maternal deaths, neonatal deaths, stillbirths, and the types of maternal and neonatal emergencies encountered.

Results: Participants most frequently reported shortages of healthcare staff due to strikes and “go slows”, delays in recognizing health emergencies, information shortages, incorrect advice from community providers, and lack of funds for transportation and treatments as the largest factors impacting access to care. The COVID-19 pandemic was found to exacerbate all these factors.

Conclusion: The study has been critically important for assessing factors impacting the “Three Delays” in accessing timely maternal and neonatal healthcare. This study has allowed us to identify areas in which we can improve our Health Navigation intervention program to address health disparities.

30. Stakeholder’s perspectives of a self-injectable contraception method; views: from two counties in Kenya

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Introduction: Self-injectable DMPA-SC (SI) is currently approved for use in a number of sub-Saharan Africa countries but remains a relatively new product in Kenya. We investigated the perspectives of key stakeholders in policy formulation, provision, regulation and implementation of Family Planning services in Kenya to find out their personal views of SI and the biggest barriers they foresee to roll-out such that regulators are able to anticipate and address these as they support the government in rolling this out

Methods: Data were collected as part of the Innovations for Choice and Autonomy (ICAN) study. Data were drawn from 18 key informant interviews conducted in two counties: Nairobi and Kisumu in Kenya between December 2020 and March 2021. Participants were purposively sampled based on the key roles they play in the family planning landscape space. Interview guides included questions about the participant’s role in family planning provision, implementation or regulation, their perspectives on facilitations and barriers to family planning access in general, as well as DMPA-SC specifically. Data analysis was iterative.

Findings: Stakeholders, especially those in regulatory roles had knowledge of the self-injectable DMPA-SC. A unique benefit of SI DMPA-SC cited is its convenience, which would save both time and other costs. Women who would benefit most from this method include covert users, adolescents and young women. Barriers to roll out foreseen included lack of information/awareness and supply of the product, perceived pain and fear associated with SI as well as the side effects and community

myths/perceptions associated with injectables in general. To facilitate the roll out of the self-injectable, the following were recommended: information sharing for public awareness, training of healthcare providers to facilitate learning of self-injection, and accessibility and availability of SI in both public and private facilities.

Conclusion: While the self-injectable DMPA-SC is a new relatively new method in Kenya, key stakeholders indicated there is willingness to adopt this method as part of the contraception methods mix. There is need to share information and create awareness in advance of roll out of DMPA SC.

31. Assessment of Non-communicable Diseases Community's Knowledge to Inform the Pilot of WHO PEN PLUS Initiatives in Selected Two Districts in Tanzania

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Background: Non communicable diseases (NCDs) have increased significantly in Tanzania, accounting for an estimated 33% of mortality. Having adequate knowledge translated into practice has a significant effect on the health of individuals in terms of taking precautions against disease risks and adopting preventive measures and for the NCDs diseased it promotes secondary and tertiary prevention by helping them effectively cope with the disease. This baseline assessment was conducted to determine the level and determinants of NCDs knowledge in the community to inform the implementation of WHO PEP PLUS initiatives.

Methods: This cross-sectional study was conducted from May to June 2023 involving 588 adults aged 25-64 years from two purposively selected districts and 11, 22 and 588 randomly selected wards, villages and households respectively. Information on socio-economic, demographic, NCDs knowledge on sign and symptoms, risk factors, prevention measures, complications and treatment were collected from each participant. Chi-square test and Modified Poisson Logistic Regression were applied to assess the association and determinants of NCDs knowledge.

Results: The median age of study participants was 40.5-years. More than three quarters of the respondents had low knowledge on Type1 Diabetes (90.3%), Sickle Cell (84.1%), Rheumatic fever (81.3%), NCDs (80.5%) and Heart failure (76.1%). Less than three fifth (56.4%) and about three fifth (62.9%) of respondents had low knowledge for type2 diabetes and sore throat respectively. Adjusted analysis indicated that, for all NCDs condition except Sickle Cell, low knowledge was significantly associated with district of residence. Low knowledge for NCDs, Type2 Diabetes and Sickle Cell was significantly associated with education level. Marital status was the only significant factor associated with low for Sore throat while Socio-economic status was significantly associated with low knowledge for NCDs, type2 diabetes and sickle cell disease.

Conclusion: Except type2 diabetes, low knowledge was observed to all NCDs conditions and socio-economic and demographic characteristics were associated with low knowledge. Intervention to increase NCDs knowledge should consider the socio-economic determinants.

32. The Effectiveness of Interventions to Reduce Cardio-metabolic Risk Factors among Regular Street Food Consumers in Dar es Salaam, Tanzania: the Pre-post Findings from a Cluster Randomized Trial

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Introduction: The healthy plate model (HPM) is a practical guide to modulate the portion of staple food in main meals, subsequently affecting the risks associated with Non-communicable Diseases include type2 diabetes mellitus (T2DM).

Objective: This study investigated the effectiveness of health information and the healthy plate model on cardio-metabolic risk factors, knowledge and attitude towards T2DM prevention measures.

Methods: A pre-post analysis, as part of a cluster randomized trial with street food vendors and their customers, was implemented in three randomly selected districts in Dar es Salaam, Tanzania. Two vendor-customer clusters each with 15 and more vendors from each district were randomly assigned to receive either T2DM health information only (Intervention package1 [IP1]) or IP1 plus a subsidized meal with vegetables and fruits, following the principles of the HPM (Intervention package2 [IP2]). Within the clusters the participants were informed on the importance of the intervention they received. We applied Generalized Linear Mixed Models and Bayesian Modelling to assess the effectiveness of the interventions.

Results: Overall, 336 (IP2=175 and IP1=161) out of 560 (280/arm) previous study participants participated in evaluation. Diastolic BP was lower among IP2 participants in the evaluation than baseline $\Delta\beta C = -4.1\text{mmHg}$ (95% CI: -5.42 to -2.76).

After adjusting for the interaction between IP2 and age of the consumers, the BMI was significantly lower among IP2 in the evaluation than baseline $A\beta C = -0.7\text{kg/m}^2$ (95% CI: -1.17 to -0.23). With interaction between IP2 and income, BMI was higher in the IP2 in the evaluation than baseline $A\beta C = 0.73\text{kg/m}^2$ (95% CI: 0.08 to 1.38). Systolic and diastolic BP were significantly lower among IP1 in the evaluation than baseline $A\beta C = -3.5\text{mmHg}$ (95% CI: -5.78 to -1.24) and $A\beta C = -5.9\text{mmHg}$ (95% CI: -7.34 to -4.44) respectively. Both the knowledge scores and positive attitudes towards T2DM prevention measures were higher in the evaluation than baseline in both arms.

Conclusion: The positive effects on cardio-metabolic risk factors, knowledge and attitude were observed in both intervention arms. Due to interactions between IP2, age and income; designing interventions relating to food and cardio-metabolic risk factors, should consider combining socio-economic factors.

33. Knowledge, Practices, and Therapeutic Education on High Blood Pressure in Hospitalized Hypertensive Patients in Bujumbura City

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Introduction: High blood pressure affects more than one billion people worldwide. In 2008, the African region had the highest prevalence of hypertension among all WHO regions. This study aims to contribute to the improvement of arterial hypertension management in Burundi.

Methods: This descriptive and analytic cross-sectional study was conducted on hypertensive patients hospitalized in five hospitals in Bujumbura over a three-month period (November to January). Data were collected through face-to-face administration of a questionnaire. All hypertensive patients known for at least six months and hospitalized in the study hospitals during the three-month period were included in the study after providing informed consent. Measures were taken to minimize measurement and selection bias, including careful participant selection and knowledge scoring. Mendeley was used for referencing, SPSS for data analysis, and the bloom cut-off (>80%) to assess patients' knowledge levels.

Results: The age group most represented in the five hospitals was 60 to 69 years, accounting for 34.5% of the participants, with a slight male predominance (sex ratio M/F 1.14) of the respondents, 33% resided in the main city of Burundi (Bujumbura-Mairie), while 66.5% lived in rural areas. It was found that 81.1% of respondents had insufficient knowledge about hypertension. Only 42.7% were aware of the target blood pressure values for hypertension, while 83% recognized the need for lifelong treatment. The most well-known complication was stroke (43.2%).

In terms of practices, 48.1% of respondents measured their blood pressure only when they felt unwell. Adhering to a modified DASH diet with low sodium (20.6%) and low fat (12.7%) was challenging for most participants. Additionally, 27.2% reported irregular medication use, and 8.2% admitted to interrupting their medication.

Therapeutic education had a good level of effectiveness in only 15% of the participants, and this variable was significantly associated with the level of education completed by the respondents ($P = 0.03$). Patients expressed a desire for more information on complications prevention, medication side effects, risk factors, lifestyle modifications, and adherence to therapies.

Conclusion: This study highlights the low level of basic knowledge about hypertension among hypertensive individuals, which hinders effective self-management of their condition. Given the limited research on non-communicable diseases in this population, these findings contribute to the understanding of the challenges in arterial hypertension management. Efforts should be made to improve knowledge and promote better practices and therapeutic education among hypertensive patients.

34. Factors associated with exclusive breastfeeding interruption and linear growth in a comprehensive support setting in Homa Bay County

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Background: Breastfeeding, a low-cost intervention for preventing childhood undernutrition has not yet been fully adopted by lactating mothers. Comprehensive settings for support of exclusive breastfeeding are ideal for scaling uptake of the potential lifesaving intervention. We evaluated the level, factors associated with interruption of exclusive breastfeeding and compared linear growth of infants by breastfeeding interruption categories.

Methods: We conducted a retrospective cohort study of children enrolled in a probiotic and two synbiotics study (PROSYNK) in Homa Bay county. We randomly selected a sample of 366 participants with complete follow-up data up to 12 months from the PROSYNK trial. The sample was proportionally selected from the four arms of the trial. Reasons and when interruption of

exclusive breastfeeding occurred were abstracted from participant's files. Socio-demographic characteristics and anthropometric data were obtained from cleaned PROSYNK trial data. We used Chi-square and Fisher exact tests to compare categorical variables. Bivariate and multivariate analysis were used to investigate further associations. We compared change in linear growth over time (up to 12 months) by breastfeeding categories.

Results: A total of 534 (89%) of the 600 participants recruited in the PROSYNK trial had complete follow up data to 12 months. Of the 366, 201 (54.9%) practiced exclusive breastfeeding, and interruption due to perception that breast milk was not enough was the major reason for interruption (50.3%, 83/165). We observed a significant association between being in a union and longer duration of breastfeeding (Odds Ratio- 4.7; 95% CI [1.1-14]) and low variability of SD for LAZ over time for infants exclusively breastfed.

Conclusion: Educational support to expectant and lactating mothers should be revamped to demystify perception that breast milk is not enough to meet child's nutritional needs and encourage longer breastfeeding durations to prevent growth faltering.

35. Hospital preparedness to Handle Motorcycle Accidents in Busia County, Kenya. An Exploratory Qualitative study

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Introduction: Motorcycles continue to be a popular mode of transport in Kenya. However, the related accidents caused by motorcycles result in significant morbidity and mortality. Despite the burden of the problem in the entire country, motorcycle injuries have not received the attention they deserve partly due to lack of local data and the public policy responses. This raised the need for hospital preparedness in terms of availability of adequate equipment/commodities/staff/infrastructure to aid in managing morbidities and reducing mortalities due to motorcycle accidents.

Objective: This paper aimed to document whether the hospitals had adequate necessities in place in handling motorcycle accidents in a Kenyan border town in Busia County.

Methods: The study was conducted in 2021. The data was obtained cross-sectional from an exploratory qualitative study. All the six referral hospitals in Busia County were purposely included in the study and 25 relevant top managers of different professional careers as key informants were considered. The managers who consented to the study were interviewed on availability and presence of the delivery of services, health infrastructure, core staff/trained staff, equipment, and commodities/supplies using structured questionnaire. Descriptive statistics analyzing frequencies were computed using SPSS version 20.

Results: All the managers in the study responded that the hospitals were not well prepared to handle motorcycle accidents. The reasons being the major challenges as follows: understaffing in critical care services 19(76%); inadequate/lack of equipment to handle motorcycle injuries 22(88%); inadequate/lack of infrastructure i.e. surgical wards, emergency rooms, inadequate space, functional theatre 21(84%); lack/inadequate supplies 15(60%); overstretched referral services due to hinge burden of motorcycle accidents in the area 13(52%); inadequate specialized personnel to provide trauma/care services 20(80%); mishandling of cases at the site of accident 10(40%); inability of victims to pay related bills 13(52%); inappropriate identification of victims at the facility 13(52%); lack/inadequate on-job training 13(52%). Some of the proposed opportunities that managers recommended include health system interventions which are not limited to employment of more professionals 16(64%); improvement of infrastructure 25(100%); provision of equipment and increase of budgetary allocation 24(96%); need for trauma care/management training 23(92%); Separate emergency department from others 25(100%).

Conclusion: The study reveals vast challenges that are faced by hospitals in managing patients involved in motorcycle accidents. This calls for the government to step in and capitalize on the proposed opportunities by the health managers to be able to manage morbidities and bring down mortality due to motorcycle accidents.

36. Factors Associated with Recent Intimate Partner Violence in Kibra Slums: A Cross Sectional Study 2023

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Background: Intimate Partner Violence (IPV) is a pervasive type of violence of public health significance. Research shows that prevalence of IPV is high among women in slums settings due to social, environmental, and individual factors. Conjecturing this vital target population within slums allows for a nuanced exploration of unique factors that contribute to the perpetration of IPV. This study aimed at determining the factors associated with IPV in slums of Kibra, Nairobi, Kenya.

Methodology: A cross-sectional study design was employed to collect data. A total of 1,068 women 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 collected using Open Data Kit (v4.2) and Logistic regression analysis conducted using STATA(v15) at 95% CI and significance level set at $p = .05$.

Results: Women who had primary level of education (AOR = 1.95, CI=1.05-3.62 $p=0.035$), resided in KambiMburu (AOR = 2.40, CI=1.09-5.3 $p=0.03$), Accessed water from outside (AOR=18.18, CI=8.62-38.33 $p\leq 0.001$), had Intergenerational Violence Transmission (IGT) (AOR=2.27, CI=1.56-3.29 $p\leq 0.001$), alcoholic partners (AOR=5.35, CI=3.39-8.45 $p\leq 0.001$), tried seeking help (AOR=10.49, CI=5.36-20.53 $p\leq 0.001$) had increased odds of IPV compared to their counterparts. Women who resided in Lindi, Laina Saba and Mashimoni (AOR=0.20, CI=0.12-0.33 $p\leq 0.001$; AOR=0.23, CI=0.13-0.42 $p\leq 0.001$; AOR=0.29, CI=0.16-0.54 $p\leq 0.001$), had 24hour access to water and toilet (AOR=0.44, CI=0.31-0.64; AOR=0.57, CI=0.37-0.88) were protected against IPV.

Conclusion: IPV is exacerbated by locations, education level, IGT, accessibility of water and ability to seek help from outside. Targeted interventions should focus on villages with higher odds of IPV. Implementing community-based programs that address educational initiatives, access to water and sanitation, alcoholism, IGT and women seeking help should be prioritized by tailoring interventions to specific findings in IPV. Further research on unavailability to water resources due to factors such as climate change should be explored.

37. Perception of Health Care Providers on the Utility of Patient Health Questionnaire-9 Tool for Depression Screening in People with HIV at a Tertiary Hospital in Southern Highlands; Tanzania

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Background: It is estimated that about 31% of people with HIV (PHIV) are suffering from depression worldwide. Depression is among the commonest mental health disorders among PHIV that is unfortunately underdiagnosed in most of Sub-Saharan Africa. Depression in PHIV is associated with poor health status, such as; low weight gain, low CD4 progression, suicide, increased progression to AIDS and mortality, and poor adherence to Highly Active Antiretroviral Therapy. The recently locally validated Patient Health Questionnaire-9 (PHQ-9) in an outpatient primary care population provides an opportunity to test the practicability of depression screening at HIV-Care and Treatment Centers (CTCs). The current work aimed at examining the perceptions of the HCPs in a study exploring the experiences of implementing depression screening via the PHQ-9 tool for PHIV attending CTC at a tertiary hospital in the Southern highlands of Tanzania.

Methods: This study was conducted at Mbeya Zonal Referral Hospital CTC in the Southern highlands of Tanzania. Qualitative interviews were conducted to explore the perceptions of HCPs on utilization of PHQ-9 depression screening tool among PHIV by HCPs with non-specialized mental health education at the CTC setting. The interviews involved Focus Group Discussions and Key Informant Interviews.

Results: Three key themes were identified: (1) perception on the PHQ-9 tool; (2) on-job training; (3) required resources.

Conclusions: The findings from our study, suggest that to contribute to the utilization of PHQ-9 depression screening tool at CTC. It will be necessary to conduct prior engagement of the HCPs to obtain their perceptions on depression, PHQ-9 tool, resources, on-job training, their competence and willingness to screening. Unless HCPs are convinced of the potential value of screening for depression to PHIV and become aware that they will be adequately supported by the management to do the screening. They will be far less likely to optimally utilize the PHQ-9 tool.

38. Rifampicin-resistant TB Screening by GeneXpert MTB/RIF Test in Adults with Signs and Symptoms of Pulmonary TB at Bujumbura Tuberculosis Specialized Centre, a Cross-sectional Study

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Background: Tuberculosis (TB) disease due to *Mycobacterium tuberculosis* (MTB) was the leading killer infectious diseases before the COVID-19 pandemic. Multidrug-resistant tuberculosis (MDR-TB) is a public health threat and a real challenge to TB control programs in developing countries like Burundi. This study aimed to analyse the factors associated with rifampicin-resistant TB among adults with signs and symptoms of pulmonary TB at the Bujumbura Tuberculosis specialized Centre (BTSC) (Centre Anti-Tuberculeux de Bujumbura CATB).

Methods: We conducted a retrospective cross-sectional study on 424 adults with signs and symptoms of pulmonary TB who attended the BTSC (a level III on the operational TB diagnostic network) from January the first 2019 to December 31st 2020.

The targeted population was the adults with signs and symptoms of pulmonary TB, tested by GeneXpert MTB/RIF (Xpert) for the diagnosis of TB and registered in the laboratory. A questionnaire was developed for data collection. After the approval of the research protocol by the scientific comity of national public health institute and the authorization granted by the Management of the BTSC, we collected data using laboratory registers. We performed bivariate and multivariate logistic regressions to assess the relation between Rifampicin-resistant TB (RR-TB) and socio-demographic, clinical and paraclinical factors.

Results: The detection rate of MTB among adults with signs and symptoms of pulmonary TB was estimated at 24.53% (95% CI: 20.65-28.86]. The mean annual prevalence of rifampicin-resistant among confirmed TB cases was 3.36% (95% CI: 1.6-6.78). The factors associated with rifampicin-resistant TB were: a history of anti-tuberculosis treatment (OR=15.85; 95% CI: 2.54-99.01) and having a positive result smear microscopy (OR=0.14; 95% CI: 0.02-0.54).

Conclusion: To reduce cases of rifampicin-resistant TB requires specific interventions for early detection to be implemented in combination with preventive measures. Adoption of the algorithm placing Xpert MTB/RIF as the initial and diagnostic test for RIF-resistance is a key screening strategy; aiming the reduction of the risk of transmission of RR-TB and the occurrence of failure of treatment of TB patients or relapses.

39. Stage at Diagnosis and Survival among Cancer Patients in Rwanda

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Background: The stage at diagnosis and subsequent treatment outcomes are important determinants of cancer survival, this is the first study investigated survival by stage at diagnosis for most common adult and childhood cancers in Rwanda.

Methods: We analysed data from Rwanda National Cancer Registry (RNCR) for the 8 most common adult cancers diagnosed in Kigali city from 2014 to 2018 and most common 8 childhood cancers diagnosed in Rwanda between 2013 and 2018. Stage at diagnosis was abstracted from medical files and using essential TNM staging for adult cancers and Toronto guidelines for childhood cancers. We did active follow and calculated observed and relative survival at 1, 3 and 5 years. Stage-specific observed survival was estimated.

Results: The cohort comprised a random sample of 552 adults and 413 children. 268 adults (48.5%) and 191 children (46.2%) died from any cause within 5 years of diagnosis. Stage was assigned for 74.5% adults (n= 411of 552) and 83.3% children (n=344 of 413). One, three and five years survival varied by type of cancer. For example, in adults, the 5-years survival was highest in breast cancer 60.0% (95%CI =48.4%-69.8%) and lowest in liver cancer 16.1% (95%CI= 6.5%-29.5%). For Children the 5-years was highest in retinoblastoma 69.8% (95%CI= 57.4%-79.2%) and lowest in Burkitt Lymphoma 27.9% (95%CI= 12.5%-45.6%). Stage was a strong predictor of survival for each type of cancer. For example, the 3-years survival for cervical cancer diagnosed at stage one was 85.7% and 26.7% for stage four (P < .001). In children, it was 50% for stage one and 23% for stage four (P < .001).

Conclusion: Improving early cancer diagnosis and the quality of health services for cancer prevention and control could be essential to improving survival outcomes in Rwanda and Africa.

40. SCOSAP Experience in Implementing CLM on Access to Quality Healthcare from Health Facilities in Siaya County for TB

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Introduction: TB incidences in Kenya in 2016 survey found prevalence of 558 per 100,000 people Males and those living in urban settlement were found to have a higher burden of the disease there were 2.5 times higher cases in male as compared to female while urban areas had a 1.7 higher prevalence TB among Children is infected either directly from an index adult case or from reactivation of latent TB The predisposing factors include under developed immunity, congested living condition, malnutrition, congenital heart disease, chronic deprivation and HIV disease among others challenges include weak collaboration between the TB programme and the private sectors, limited funding, poor governance and lack of continuous training of private health care providers Kenya is one of the 14 countries in the world with a high burden of TB, multi drug resistance (MDTB) and TB HIV Risk factors for TB diabetes mellitus, patients with (DM) are at a higher risk of TB transitioning from latent to active TB, smoking, alcohol use.

Description of interventions: CLM will continues to monitor the TB prevalence as reported in Kenya studies carried out in2019 which reported that prevalence of resistance of first and second line TB drugs has been reported to be 1.5% Kenya ranks

15 among the 22 high burden countries globally with national estimated HIV prevalence of between 5.6 and 6.3% CLM will monitor Health system related barriers as in Insufficient monitoring and supervision of TB work, Healthcare worker related barriers as in Gaps in TB knowledge, lack of training in case detection guidelines and Fear of infection/attitude towards TB workers plus Patient related barriers as in Gaps in TB knowledge CLM will ensure infection control program should be on administrative control, environmental control and Use of respiratory protection equipment Development of i-Monitor app has made it easier to follow up & reporting on all of the commitments made during the validation of the reports Quarterly meetings with the health departments and community led organizations to identify policy gaps and advocacy issues to be addressed through budget formulation or including the issues in the budget Documents like CIDP and annual development plan, respectively.

Findings and lesson learnt: Many community members still do not understand the general effects of TB that include Feeling sick or weakness weight loss, fever, and night sweat The symptoms include TB disease of the lungs also include coughing, chest pain, and the coughing up of blood during treatment we should avoid tobacco consumption, avoid alcohol intake as it can interfere with medicine, restrict coffee and caffeinated drinks to a minimum and increase intake of fluids like water and coconut water, avoid deep fried food, junk food, refined products like sugar flour CLM to include sharing insights to enhance TB services with a wide range of stakeholders, such as facility managers, government officials, civil society networks Lessons learned include building trust between all parties, for the success of engagement.

Conclusion and next steps: Sharing of the CLM reports with community will help them understand types of active TB disease that is a illness in which TB bacteria are rapidly multiplying and invading different organs of the body, milliary TB-that is a rare form of active disease that occurs when TB bacteria find their way into the blood stream and latent TB infection Next steps is to train community members on how to use I-monitor app to increase reporting and follow up To continue educating and sensitizing community to be screened on TB Enhanced TB contact tracing amongst the communities.

41. ULTRA: An Electronic Birth Registry for the Kilimanjaro Region

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Introduction: Maternal and perinatal mortality persists in low-income countries, particularly Sub-Saharan Africa. To reduce mortality, high-quality data must be collected as close to real-time as possible. Data analysis is difficult with existing paper-based systems, such as Health Management Information System in Tanzania, as there is hardship in retrieving the data. Studies have proved electronic system to solve this problem. To address these problems and limitations in the current approach in the recording of obstetrics delivery data, we developed the ULTRA App.

Objective: To set up ULTRA App for use in the maternal health care system in the Kilimanjaro region to improve maternal health care and reduce maternal and infant fatalities.

Method: The ULTRA App is an android based developed using DHIS2 platform. The app is built using variables from HMIS books 6, 7, 12 and 13 covering all the stages of pregnancies, delivery, post-delivery and child's clinic. It captures and store the maternal and child's individual data in Kilimanjaro region. The app is designed specifically to be used in remote areas, and in resource poor countries, where internet availability is poor. The project is expected to run for 33 months.

Results: ULTRA system has been deployed in 5 health facilities in Kilimanjaro Region and about trained 30 health providers are using the system. Data from pregnancy women and children are collected daily in these health facilities.

Conclusion & Recommendation: The ULTRA app has built a firm foundation for the use of digital technology in the Kilimanjaro region and Tanzania as a whole by developing a less time-consuming, cost-effective, error-free app that produces high-quality data that can be utilized anywhere for fast data analysis and clinical choices. Local and health ministry officials should encourage digital technology projects and improvements.

42. Fatal Cranioencephalic Trauma in the National Hospitals of Bujumbura: Epidemiological, Clinical and CT Aspects

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Background: Traumatic brain injury is accompanied by lesions that can lead to death. A good knowledge of these lesions can improve the management of patients with head trauma. In our study, we describe the epidemiological, clinical and CT features of patients died of cranioencephalic trauma.

Patients and methods: Retrospective descriptive study conducted over a 16-month period from August 2021 to December 2022 at the CHUK, HMK, Kira Hospital and TCP in Bujumbura. All patients of any age with cranioencephalic trauma who died in one of the study hospitals during the study period were included in this study.

Results: Cranioencephalic trauma accounted for 9.83% of admissions to the intensive care unit, with a death rate of 27.87%. Fatal head injuries due to road traffic accidents accounted for 79.31% of cases. The average age of the patients was 37.36 ± 16.33 years, with 89.66% being male. Altered consciousness was present in 67.24% of cases (39 patients), and the Glasgow score was less than or equal to 8 in 92.5% of cases. CT scans were ordered for 57 patients (98.28%), but only performed on 33 patients (57.89%) and within 24 hours of the accident in 45.46% of patients. A total of 12 patients presented with multiple fractures involving the temporal bone (60%). Brain lesions were observed in all 33 patients and were located in the frontal lobe in 51.51% of cases. Haemorrhagic contusion was noted in 78.78% of patients and cerebral oedema involvement was observed in 30.3% of cases (10 cases). The death rate was 32.76% on the first day, 50% on the second day and 70.69% on the third day of hospitalisation.

Conclusion: Fatal cranioencephalic trauma, often resulting from road accidents, involves young males. The clinical presentation was dominated by severe impairment of consciousness. CT scans revealed skull bone fractures and brain lesions. Most patients died within the first three days of hospitalisation.

43. The place of ultrasound in the diagnosis of breast tumors in women in Bujumbura pathology laboratory

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Background: Breast cancer is the most common female cancer worldwide and is the leading cause of cancer death in women. Its incidence is higher in developing countries, particularly in Burundi where it is estimated at 17.3%. Diagnosis is made by clinical and paraclinical examinations, particularly imaging. In first intention, medical imaging consists of mammography and ultrasound. In Burundi, there are few centers that practice mammography. It is the ultrasound which, most often, allows the diagnostic orientation and the histological proof which confirms the malignant nature or not. The objective of this study was to determine the place of ultrasound in the diagnosis of breast tumor in Burundi referring to the results histology.

Methods: This was a retrospective descriptive study conducted over a 12-month period from 1 January to 31 December 2021 at the Bujumbura Pathology Center, including patients who had undergone breast ultrasound and histological analysis for a breast tumor.

Results: During the period of our study, 653 cases were analysed histologically. Breast tumors was 92 (14.08%). The mean age was 43.56 years (13 to 77 years). The right breast was affected in 52.17% of patients. The lesions were in the superior-external quadrant in 52.08% on the right breast. On ultrasound examination, lesions were suspected of being malignant in 60.87% (46 patients) and benign lesions were suspected in 18.48% of cases (17 patients). The benign or malignant nature of the lesions was not mentioned in 20.65% of cases (19 patients). On histology, the lesions were malignant in 63.04% of cases (58 patients). Invasive ductal carcinoma was found in 87.93% of cases (51 out of 58 patients). Of the 56 cases suspected of malignancy on ultrasound, histological examination revealed 46 cases of malignant tumors (82.14%). Of the 17 cases suspected of being benign on ultrasound, histological examination revealed 15 cases of benign tumors (88.23%). Benign tumors were dominated by fibroadenomas (21.05% of cases). Of the 46 cases suspected of being malignant on ultrasound, histology revealed 44 (95.83%) of malignant tumors. Lesions whose benign or malignant nature was not suggested by ultrasound were dominated by carcinoma in 52.63% of cases after histological examination.

Conclusion: The place of ultrasound in the diagnostic orientation in the case of breast tumors is preponderant, especially in regions where mammography and MRI are not widely available.

44. Effects of Health Education on Cervical Cancer Screening Uptake among Women Attending a Tertiary Hospital in The Gambia

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Background and Aim: Cervical cancer (CC) is rated as the most common cancer among women in The Gambia and the commonest cancer among females between 15 and 44 years of age. Additionally, evidence from a systematic review of studies strongly supports the use of health education programs in increasing CC screening utilization. Nonetheless, in The Gambia, there seems to be a paucity of data on the impact of health education intervention on CC screening. Therefore, the aim of this study was to assess the level of knowledge, attitude, and practice toward CC screening uptake among women attending Edward Francis Small Teaching Hospital (EFSTH), The Gambia.

Methods: The study was a hospital-based quasi-experimental design (pretest and posttest). A sample size of 316 women was conveniently selected and data were collected using a structured questionnaire. The intervention plan comprised of a

comprehensive health education on cervical cancer and screening uptake which was given to participants via discussions using visual aids. A pretest was done on the first day of the study and the first health education was given the same day. This was followed by another session of health education. This was done during the maternal and child health services as women await infant immunizations, antenatal services, or gynea services. Regarding the post intervention, the same questionnaire was administered to the women shortly afterwards at the hospital to assess knowledge, attitude, and practice towards cervical cancer screening. Additionally, participants were informed about the screening area and the body part needed for the test. Data were analyzed using SPSS version 21.00 and statistical analysis was done using descriptive and inferential methods. A p-value of <0.05 was considered statistically significant.

Results: Three hundred and sixteen women participated in the study. The mean age was 32.23 years and the majority was between the ages of 26-30. Most of the participants had less than 2 children, with age at first sexual activity between 19-25 years. The majority were married housewives with no formal education. There were significant differences in women's knowledge and attitude towards CC screening while the practice levels remained poor at post-intervention.

Conclusion: Implementation of appropriate culturally-tailored and evidence-based health education programs is crucial in creating awareness and improving uptake of cervical cancer screening services among women. This will significantly contribute to an early detection of cervical cancer and reduce the risk of contracting the disease.

45. Mass Media Content and Mental Illness Stigmatization: A study in Kenya Medical Training College

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Background: Stigmatization of the mentally ill persons has been one of the derailing factors on the gains made in fighting mental disorders. This stigmatization has seen escalation of the mental illness related effects such as school dropouts, suicide, substance abuse among other consequences as victims eschew seeking treatment for fear of stigmatization. On the other hand, mass media content through the framing of messages and how the communication on mental health issues has been portrayed, play integral role in shaping the public opinion on mental illness. This study therefore sought to examine the role played by mass media content on the stigmatization of mental illness among college students in Kenya Medical Training College.

Methods: Using a descriptive research approach, the study through a questionnaire surveyed 384 students drawn from a population of 51045 students at the college. The data was analysed using descriptive and inferential statistics through SPSS.

Results: The findings revealed that the mass media content significantly influenced mental illness stigmatization among the college students.

Conclusion: A conclusion was drawn that the failure by the mass media content to frame mental health issues in a clear and articulate manner, and lack of priming of the mental health-related issues contributed to increased ignorance and stereotyping of the mentally ill persons. It is therefore recommended that the media practitioners and stakeholders have a role to play in eradicating the stigmatization of the mentally ill persons by priming the mass media content on mental issues at the prime time just like other issues, and framing the content on mental health in an articulate manner that is more understandable. More time should also be allocated to mental health issues in the mass media content in order to create more awareness and eradicate stigmatization.

46. Literature Review on Visceral Leishmaniasis in South Sudan and Sudan: Evaluation of Diagnostic Methods, Therapeutic Protocols, and Related Risk Factors

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Introduction: Kala-azar is known to be caused by visceral leishmaniasis of the genus *Leishmania donovani*, with *Phlebotomus* species acting as the causal agent. *Phlebotomus orientalis*, which predominates in the northern regions of South Sudan and Sudan, and *Phlebotomus martini*, which has now invaded the counties of South Sudan bordering Kenya, are other species are a public health concern. One third of the population of South Sudan are thought to be at risk from this disease. This review aims to evaluate the state of current visceral leishmaniasis diagnosis, treatment, and risk factors in South Sudan.

Methods: Between 1945 and 2021, literature found on the SCI Journals, Pub Med, Science Direct, Google Scholar, WHO, MSF, and CDC websites was searched. Visceral leishmaniasis/VL diagnostic methods, treatment plans, South Sudan, Sudan, and related risk factors were the search terms employed.

Results: VL outbreaks occurred more frequently as a result of several risk factors. Public health issues are getting worse because of ongoing conflict, starvation, colonization in sandfly-infested areas, and co-infections with HIV or hepatitis.

Government efforts to manage and eradicate VL carriers are ineffective, and little funding has been re-allocated. Sandflies have been observed to use acacia trees as resting and hiding spots. A frequently used field diagnostic tool is the K39/K26 or rk39/rk28 dipstick. For use in South Sudan, liposomal ampicillin, sodium stibogluconate, and paromomycin are suggested treatments. This analysis also discovered that diseases had returned to previously kala azar-free regions.

Conclusion: South Sudan's VL is still largely cut off from clinical diagnosis, treatment, and control methods. Data from routine monitoring is also lacking. For treatment and vector control, there are still national standards and practices in existence. Further research was necessary to determine the degree of visceral Leishmania parasite resistance to the existing Leishmania medications. Frequent VL outbreaks are strongly correlated with internal strife, severe malnutrition, extreme poverty, and relocation to high-transmission areas. Children, the elderly, and pregnant women who are new to sandfly-infested areas are more at danger.

47. Predictors and frequency of STIs among men using PrEP among men who have sex with men in Kiambu County, Kenya

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Background: Globally MSM brace a high burden of STIs, hence a target population for public health interventions. Chlamydia trachomatis, Neisseria gonorrhoeae, Hepatitis B, syphilis and herpes are the most prevalent STIs among the MSM. The convergence of pre-exposure prophylaxis (PrEP) has seen an increase in STIs. In Kenya, 35% of the MSM on PrEP have acquired an STI and this is a 21% increase at a national level. STIs contribute to 41% of morbidity among the MSM. 29% of population on PrEP in Kiambu are MSM and there is an increment of STIs by 14% in Kiambu County.

Methods: A descriptive cross-sectional design was used. This was a community-based study and venue-based and snowballing sampling was adopted to identify participants. Quantitative data was collected from 129 participants, while qualitative data was collected from 4 key informants and 3 focused group discussions. Quantitative data was analyzed using SPSS and qualitative using NVIVO software.

Results: The findings indicated the prevalence rate of STIs was 37.5% in the past three months. The more prevalent STIs among MSM were Chlamydia (47.9%), Gonorrhoeae (47.9%), and genital warts (31.3%). The regression analysis indicated that, there were significant associations between STI prevalence and the type of sexual typologies [OR=25.565; 95%CI=0.144-25.328; P=0.022]. Partner notification to testing positive for an STI had a strong significance effect on STI prevalence at [OR=0.447; 95%CI=0.862-1.393; P=0.013]. On the other hand, the number of sexual acts per week had no significant relationship with STI prevalence (28.6%) [OR=0.584; 95%CI=0.000; P=1.000]. The results were in sync with key informants who indicated that having multiple sexual partners and engaging in anal sex without using protection increases STI contraction. Further, other key informants indicated that majority of MSM turning positive of STI do not inform their partners leading to increased risk of contraction.

Conclusion: MSM on PrEP are afflicted with STI prevalence and based on the findings, this is majorly associated with sexual behavioural patterns such as lack of use of condoms especially with paying clients, not using condoms during anal sex, and engaging in different sexual typologies. The study therefore, recommends that the Ministry of Health through National and County governments, development and implementation partners strive to reach as many MSM as possible on PrEP with health services geared to lower the STI transmission rates, with persistent messaging encouraging condom use continuously.

48. Facilitators for and Barriers to the Implementation of Performance Accountability Mechanisms for Quality Improvement in the delivery of Maternal Health Services in a District Hospital in Pwani Region, Tanzania

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Background: Tanzania is among the countries with a high burden of maternal mortality and morbidity (556 maternal deaths per 100,000 live births). This happens despite the government's efforts to institute accountability mechanisms for enforcing quality improvement in the delivery of maternal newborn and child health services.

Objective: To explore barriers and facilitators for enforcing accountability mechanisms for enhancing quality improvement in the delivery of maternal newborn and child health services.

Methods: We adopted a phenomenology study design to conduct semi-structured interviews with ten participants holding administrative positions in the sections of the district hospital; closely involved in the enforcement of accountability mechanisms in the delivery of maternal and newborn child health services. The interview data were analyzed using thematic framework analysis.

Results: Findings are linked to two performance accountability mechanisms namely maternal and perinatal death reviews, monitoring, and evaluation. The use of technologies like online ordering systems for medical supplies, the existence of a professional code of conduct, the use of biometrics in foreseeing attendance, the use of Electronic Fiscal Devices (EFDs) in revenue collection, and the existence of audit structures like maternal death review meetings were noted as facilitators for enhancing enforcement of accountability for quality improvement in the delivery of maternal health services. The barriers to implementation of accountability included inadequate health workforce, political interference, and supply chain deficiencies with staff attitude of clinging to business as usual.

Conclusion: The findings underscore that the implementation of accountability mechanisms is spearheaded by the use of technologies in delivering healthcare services with respect to online ordering of medical supplies, the use of biometrics in controlling attendance and also implementation of accountability mechanisms for quality improvement in maternal health is hampered by inadequate human resources health, workers' negative attitude - business as usual mentality, political interference. Finally, political interference is a serious challenge towards the dispensation of accountability mechanisms since it cultivates a sense of fear among health workers and find it difficult to stick to a professional code of conduct and eventually work to please the political class.

Recommendation: Proper and well-functioning health systems need to tackle barriers that impede the implementation of accountability mechanisms for quality improvement in maternal health services. All responsible parties ought to enhance the implementation of accountability mechanisms for quality improvement in maternal care. In this regard, more funding has been channeled to improve technologies, which are vital in revenue collection and timely procurement of medical supplies. In addition, more efforts needed to eliminate the barriers to the enforcement of accountability mechanisms including political interference, laissez-faire attitude and business-as-usual mentality.

49. Infection Rate, Abundance and distribution of Vectors of *Wuchereria bancrofti* in Matayos, Busia County-Kenya, within the context of climate change

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Abstract: Literature shows that 58% of infectious diseases are aggravated by climate change as it alters distributions of disease vectors resulting in new transmission dynamics of emerging disease (Okulewicz, A. (2017). *Wuchereria bancrofti* causing lymphatic filariasis is targeted for elimination by the year 2030. Kenya an endemic area of filariasis has directed its elimination efforts only in Coastal region despite the fact that there are other susceptible regions. Transmission indices in vectors are an important parameter in assessing control processes. In this study, we screened *W. bancrofti* in mosquito vectors in Matayos constituency in Busia County and Climatic data obtained from archived meteorological records.

Methods: Mosquitoes were collected Using CDC light traps in 5 villages; Bulanda, Emasiebia, Mugweso, Nangoma and Busende. The light traps were set 1 meter from the bedsides in randomly selected houses of identified cases based on *W. bancrofti* antigenaemia screening process by Filarial Strip tests.

Results: We collected a total of 1305 mosquitoes morphologically identified into *Anopheles* (63.75%), *Culex* (33.2%), *Aedes* (1.9%) and *Coquilletidia* (1.15%) genera. One thirty-three (10%) mosquitoes were dissected in search of microfilaria and infection rates determined by PCR. Mosquitoes were pooled into 78 pools according to species. There were no microfilariae found in dissected mosquito however, 2 pools of *Anopheles* species were positive for filarial DNA giving minimum infection rate of 0.15%. Annual precipitation ranged from 808mm to 2104mm. Mean annual minimum and maximum temperatures ranged from 14.480C – 17.470C and 27.260C – 29.820C respectively. There were no significant precipitation differences ($F(5, 54) = 0.9796$, $p = 0.4387$) but a significant difference in the mean minimum and maximum temperatures averaged (One-way ANOVA $F(5, 54) = 39.37$, $p = 0.00$ and $F(5, 54) = 49.802$, $p = 0.00$; respectively) was observed.

Conclusions: Our findings show that *Anopheles* mosquitoes were more abundant in the region, with Mugweso village having the highest catch which had more water bodies. There were mosquitoes of *Anopheles* species infected with *Wuchereria bancrofti* parasites which is an indicate of active transmission with *Anopheles* species as main vectors. A significant temperature raise found may result to increase in vectors. Since small number of mosquitoes were screened, we recommend further screening on a large area before Mass Drug Administration (MDA) is initiated though Morbidity management and mosquito controls in the region needs to be enhanced.

50. Sustained Positive Effects on Depressive Symptoms among Ugandan Mothers–Six years After A Cluster-Randomized Education Trial in A Rural Low-Resource Setting

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Introduction: Mental health disorders, such as depression, burden mothers in low-income countries such as Uganda. Various interventions have been implemented to tackle this problem, but their sustainability is under-researched.

Objective: The aim of the study was to assess maternal depressive symptoms six years after a cluster randomized controlled education trial in southwestern Uganda.

Methods: The intervention lasted six months and consisted of nutrition, hygiene, sanitation and child stimulation education, delivered to 511 mothers of 6 to 8 months' old children. Two psychometric tools, the Beck Depression Inventory II (BDI-II) and Center for Epidemiologic Studies Depression scale (CES-D), were used to assess maternal depressive symptoms.

Results: For this follow-up study, data was available from 307/511 (60%) mothers. Intention-to-treat analyses adjusting for clustering showed that the intervention mothers had non-significantly less depression symptoms (absolute score difference -2; 95% CI -5 to 0; $p=0.07$) on BDI-II, and borderline significantly less depression symptoms (absolute score difference -3; 95% CI -5 to 0; $p=0.05$) on CES-D compared to the controls. For categorized depression scores, the control mothers had significantly higher proportion of women classified in the worse depression categories for both BDI-II and CES-D. We did not find any baseline characteristics associated with maternal depression. Notably, the BDI-II and CES-D tools are both self-reported and we cannot rule out the possibility of social desirability bias in reporting of depression symptoms.

Conclusion: Six years after the maternal education trial, some benefits on maternal mental health were sustained. More studies are warranted on sustainability and scale-up of such interventions.

51. Prevalence of Blood Stream Infections and Associated Factors among Febrile Neutropenic Cancer Patients on Chemotherapy at Ocean Road Cancer Institute, Tanzania

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Background: Febrile Neutropenia (FN) caused by bacteria in cancer patients is associated with poor prognosis. The aim of this study was to determine the prevalence of FN and associated factors among cancer patients on chemotherapy at Ocean Road Cancer Institute (ORCI), Tanzania.

Methods: A cross-sectional study was conducted from June to September 2019. Study participants were conveniently recruited. A desk review of participants medical records was performed. Standard microbiological procedures used to culture and identify the bacterial isolates from the positive blood cultures of participants that presented with FN. Kirby-Bauer disc diffusion was used to perform the antibiotics susceptibility testing. SPSS version 20.0 and MS Excel were used in data entry and analysis. Chi-Square was used as a measure of association between various factors and neutropenia. P-Value less than 0.05 was considered statistically significant.

Results: A total 213 participants were enrolled. Of these 76.1% were female. Most of the participants came from the Coast region. Majority of participants presented with breast Cancer (36.2%) and GIT (20.2%). The prevalence of FN and bacteremia was 5.6% and 35.3% respectively. Staphylococcus Aureus (60%) and Coagulase-Negative Staphylococci (40%) were the main isolates. Of the 6 isolates tested most were resistant to Co-Trimoxazole 4/6 (66.7%) and Doxycycline 3/6 (50%). FN was positively associated with chemotherapy regimen ($P=0.0001$), platelets count ($P=0.0001$) and use of G-CSF ($P=0.0001$).

Conclusion: The prevalence of FN among the cancer patients on chemotherapy in Tanzania is low but associated with drug-resistant bacteria.

52. Revitalizing COVID-19 Coverage in Tanzania: Unleashing the Potential of Client Centered Approaches for Enhanced Impact

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Background: The COVID-19 pandemic has been declared a global health threat by the World Health Organization (WHO) in March 2021 with vaccination being crucial strategy to stop its spread. Tanzania experiences low vaccination coverage rates due to hesitancy among its citizens following concerns on vaccines efficacy. Efforts have been made to address misconceptions and improve vaccination coverage in the country including use of various client-centered approaches (CCA). In July 2021, Tanzania joined the global vaccination campaign and received a total of 32,131,770 vaccine doses with various antigens by September 9, 2021.

Methods: Mastercard funded vaccine uptake acceleration project was implemented by AMREF in nine regions of Tanzania mainland with technical assistance from Africa CDC. The project aimed to achieve 100% vaccination coverage targets set by

the government by December 2022. The client-centered approaches involved trained health workers and community mobilizers who employed tailored community engagement strategies. These strategies aimed to provide accurate information about the vaccine, address concerns and misunderstandings, and build trust among the communities. Various methods were used, including door-to-door campaigns, community gatherings, religious buildings, workplaces, and the involvement of influential leaders. Mobile clinics were also deployed in hard-to-reach areas, particularly rural communities.

Results: As a result of these approaches, 4,782,832 individuals were vaccinated within three months (October - December 2022) accounting for 13% of the national coverage, achieving 136% of project target and 100% of government-set regional targets. Since the start of the vaccination campaign, 59.99% (18,222,934) of the targeted population (18 years and above) have been vaccinated in Tanzania.

Conclusion: The use of client-centered approaches significantly improved COVID-19 vaccination coverage in Tanzania. These approaches involved tailored community engagement, mobilization efforts, and the use of mobile clinics. They not only increased vaccination rates but also helped address vaccine hesitancy and other barriers to vaccine uptake. The success of these approaches suggests that they can be effective in improving vaccination coverage rates in Tanzania. However, further research is needed to assess the sustainability and scalability of these approaches and their impact on vaccine hesitancy and acceptance.

53. Empowering Health Systems by Leveraging an AI Powered Triage Tool for Pandemic Preparedness and Response: A case Study from Kenya

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Background: The global community has witnessed the unprecedented COVID-19 pandemic, prompting a realization of the critical importance of preparedness and response strategies for communicable and non-communicable diseases. This abstract highlights the significance of real-time information, client-facing risk assessment, and self-screening digital tools, focusing specifically on the context of COVID-19.

Methods: IntelliSOFT developed AfyaGuide, a web application, aimed at transforming pandemic preparedness and response. AfyaGuide serves as an AI-powered triage tool that harnesses the capabilities of machine learning and natural language processing. By becoming a trusted ally, the guide facilitates evidence-based decision-making and proactive planning. Through real-time information, personalized risk assessments, and self-screening capabilities, AfyaGuide empowers users to make informed decisions regarding their health and seek appropriate care when necessary.

Results: With both a user-friendly interface and advanced AI algorithms, the tool works by enabling the user to conduct triage and self-screening, analyze symptoms, travel history, and other exposure risks. Based on this information the guide provides reliable recommendations, ranging from visiting a doctor, requesting emergency services, to recommending suitable pharmacy options and delivering clear preventive and self-treatment measures. Successful pilots conducted at Nakuru Level 5 Hospital in Nakuru and Mama Lucy Kibaki Hospital in Nairobi, Kenya, have demonstrated AfyaGuide's efficacy in enhancing pandemic preparedness and its potential use in the long term management of non-communicable diseases. Healthcare professionals benefited from up-to-date guidelines and protocols, enabling them to deliver accurate care, while clients could assess their symptoms and receive personalized recommendations.

Conclusion: This project's lessons underscore the significance of proactive and adaptable approaches in combating future outbreaks. It highlights the importance of leveraging emerging technologies such as AI to provide real-time information, personalized risk assessments, and recommendations to enhance public health response and minimize the mortality and morbidity of communicable and noncommunicable diseases.

54. Preventive Chemotherapy with Ivermectin, Diethylcarbamazine and Albendazole Triple-drug Therapy for the Elimination of Lymphatic Filariasis in Kenya: Programmatic Implementation and Results of Baseline Survey and the First Impact Surveillance

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Background: Lymphatic filariasis (LF) is a mosquito-borne neglected tropical disease (NTD) caused by infection with the filarial nematode species *Wuchereria bancrofti*, *Brugia malayi* or *B. timori*. In 2017, the World Health Organization (WHO) recommended triple-drug co-administration of ivermectin, diethylcarbamazine and albendazole (IDA) as an alternative mass drug administration (MDA) regimen for the acceleration of LF elimination. In 2018, Lamu County and Jomvu Sub-County

in Kenya were selected for the acceleration of LF elimination using IDA. An operational research study was established to determine target populations, infection indicators, sampling strategies, and/or thresholds required to determine when it is safe to stop IDA.

Methods: Two rounds of MDA with IDA were conducted in November 2018 and November 2019. Cross-sectional population-based epidemiological and entomological surveys were conducted at baseline and endline in 30 and 5-10 randomly and purposively sampled villages, respectively. Blood specimens were tested for circulating filarial antigen (CFA) in the field using the Filariasis Test Strip (FTS). Statistical analyses were performed using STATA version 16.1 (STATA Corporation, College Station, TX, USA). MDA with IDA, study sites, and participants age and gender were the independent variables whereas the FTS test result was the dependent variable. Graphs were developed using the ggplot package implemented in R. Village locations were mapped using ArcGIS Desktop version 10.2.2 software (Environmental Systems Research Institute Inc., Redlands, CA, USA).

Results: Treatment coverage was above 80% during each year. Baseline CFA rates were generally low in both implementation units, but comparatively higher in Jomvu (1.4%) than in Lamu (0.5%). Relative reduction (%) in LF prevalence following the two rounds of MDA with IDA was significant in both Jomvu (52.45%, $P < 0.02$) and Lamu (52.71%, $P < 0.05$). Heterogeneity was observed in the LF prevalence reduction between random and purposive clusters as well as between adult and child populations.

Discussion: The results of the study show that IDA accelerated elimination of LF as a public health problem in the two implementation units. When compared with the WHO recommended 30-cluster transmission assessment survey, the endline results showed that IDA could be safely stopped. Purposively sampled sites might be adequate for assessing LF endemicity in areas where MDA has been ongoing and acceleration with IDA is considered.

55. AI and COVID-19 Testing: Advancing Healthcare Decision-Making

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Introduction: The emergence of the COVID-19 pandemic highlighted a critical necessity for effective approaches in prioritizing patients, especially within regions constrained by limited resources such as Sub-Saharan Africa. Unprecedented challenges arose due to high volumes of suspected cases with limited testing capacity and high testing costs on the continent. This called for affordable and efficient screening mechanisms. A COVID-19 decision support system was developed to enhance the screening of people living with HIV (PLHIV) to identify those needing COVID-19 tests.

Methodology: To achieve this, data from 700 PLHIV who had responded to an integrative voice response tool for medication adherence support (Call For Life-CFL) phone calls for at least 2 months between March 2020 and December 2021 were among the study respondents. A retrospective questionnaire in 2022 collected demographic information, medical history, and history of COVID-19 symptoms, vaccination, and exposure features Table 1. For this study, anti-SARS-COV-2 reagent tests were used for vaccinated participants and Anti-SARS-COV-2S reagent tests were used for the unvaccinated in 2022. Health workers analyzed the questionnaire data and COVID-19 antibody test results to determine those likely and not likely to have contracted COVID-19. The dataset was later split into a 3:1 (training and testing) ratio and used to carry out machine learning classification modeling with light gradient boosting machine algorithm as well as model testing.

Results: For high efficiency of the screening model final the parameterized model was: evaluated using metrics of accuracy (0.89), Matthews Correlation Coefficient (0.78), F1-score (0.87), kappa score (0.78), precision (0.89), recall (0.86) ROC-AUC (0.94) and confusion. To find Parameters that optimized the trained model a mean score on the cross-validation-set and the best trial were printed. The optimized model was binarized, lifted, and integrated into a developed decision support system (DSS) nested in CFL. This browser-based DSS guides health workers on who needs a COVID-19 test.

Conclusion: Using the test data set the DSS model screened 235 positives of which 209 were actual positives. The DSS can evolve to screen other respiratory infections with continuous model updates.

56. Monitoring the Battleground: Exploring Antimicrobial Resistance, Antibiofilm Trends, and Virulence Factors in Wound Bacterial Isolates

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Background: There is an alarming increase in antibiotic resistance, especially in common bacterial infections that could be attributed to extensive and indiscriminate use of antibiotics. Continuous strategic monitoring of antibiotic use and AMR trends

becomes imperative. Chronic wound infection remains a public concern in this era of AMR. This motivates a thorough evaluation of wound isolates for relevant bacteria and assessing their drug susceptibility patterns, which we report herein.

Aim: The study aimed to decipher antibacterial resistance by examining samples collected from patients with chronic wounds seeking medication at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH).

Methodology: This was cross-sectional study among the patients with chronic wounds seeking medication at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH). Standard microbiological methods were employed to identify and characterize the bacterial pathogens.

Results: Analysis of the wound isolates revealed a significant presence of microbial growth, with a higher prevalence of 59% isolates in male patients. *Staphylococcus aureus* 20.7% emerged as the most predominant pathogen, followed by *Klebsiella* spp. 14.8%, *P. aeruginosa* spp. 14.8%, and *E. coli* 4.4% in the wound samples. Notably, Cotrimoxazole exhibited the highest antibacterial resistance 48.1%, followed by Clindamycin 25.9% and Erythromycin 25.9%, affecting both Gram-positive and Gram-negative bacteria. Furthermore, among the isolates, 75% were capable of producing haemolysin and protease, while 50% produced lipase and phospholipase, factors that enhance virulence and survival. Conclusion and recommendation: These findings provide crucial insights into antimicrobial resistance in chronic wounds among patients attending JOOTRH, thus the importance of creating awareness and emphasis on responsible antibacterial use in wound management and shedding light on the need to developing more potent antibiotics to treat chronic wounds effectively.

Sub-theme 2: Is the World prepared for future pandemics? Success, opportunities, and challenges in management of COVID19 and Ebola

57. Clinical Course and Factors Associated with Hospital Admission and Mortality Among SARS Cov-2 Patients within Nairobi Metropolitan Area

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Background information: The World Health Organization in March of 2020 made an announcement that coronavirus disease 2019 is a global pandemic after the disease spread to almost all the corners of the globe. The world has reported 528,798,263 cases so far and 6,287,426 deaths. Globally, as of 13 September 2023, there have been 770,563,467 confirmed cases of COVID-19, including 6,957,216 deaths, reported to WHO. As of 6 September 2023, a total of 13,501,166,968 vaccine doses have been administered (WHO). As of 1 April 2023, a total of 23,750,431 vaccine doses have been administered.

Broad objective: To determine the clinical characteristics, disease course and outcomes reported in patients with Sars CoV 2 infections within Nairobi Metropolitan Area.

Specific Objectives

1. To describe clinical characteristics displayed by persons admitted in covid-19 treatment centers within Nairobi Metropolitan Area and the associated features.
2. To determine the prevalence of comorbidities among Sars CoV 2 patients admitted in to the covid-19 treatment centers within Nairobi Metropolitan Area.
3. To determine the major cause of mortality among Sars CoV 2 patients admitted at the covid-19 designated treatment centers within Nairobi Metropolitan Area and the associated features.

Research Design: The study took the format of a multicenter retrospective cohort study focusing on hospitalized patients admitted to the participating hospitals in the study period between March of 2020, and December of 2022. It involved the collection of clinical characteristics as well as laboratory parameters at admission and throughout the hospitalization period.

Results: Data was collected from 328 patients with COVID-19. This study provided comprehensive information on various aspects of hospitalized patients with different levels of severity of COVID-19 in the Nairobi Metropolitan area.

A significant proportion of patients (67%) were males and had underlying conditions (43%), with hypertension (28%) and diabetes (22%) being the most common. These findings are in line with previous studies that also observed a higher prevalence of Sars Cov 2 infection among adult males, particularly in the age bracket of 34 to 59 years. Patients with chronic comorbidities like cardiovascular diseases and diabetes were found to be at a higher risk of death, consistent with other studies [30, 20]. COVID-19 other mortality predictive factors include, low oxygen saturation [0.81,95% CI, 0.760-0.874], higher WBCcount ($\times 10^9$) [OR=1.1,95%.CI=1.044-1.172], Neutrophil count ($\times 10^9$), OR= 1.07,95% CI, 1.005-1.130], Lymphocyte count ($\times 10^9$) [OR =2.23 95% CI, 1.290-3.847] among others.

Conclusions: Several factors may be associated with a fatal outcome in patients with severe COVID-19. These factors include being male gender, older age, leukocytosis (high white blood cell count), elevated liver enzymes, hyperglycemia (high blood sugar levels), and the presence of cardiovascular diseases. Patients who are above 60 years of age and have comorbidities may be at risk of mortality. Patients with leukocytosis, hyperglycemia, elevated serum creatinine levels, those admitted to the intensive care unit, or have elevated C-reactive protein levels are more likely to experience mortality. These findings have important clinical implications for identifying individuals who may be at higher risk and require closer monitoring and intensive care interventions.

Recommendations:

Based on the study findings, the following recommendations can be made:

1. Healthcare providers should consider the identified factors (male gender, older age, leukocytosis, elevated liver enzymes, hyperglycemia, and cardiovascular diseases) as potential indicators of increased mortality risk in patients with severe COVID-19.
2. These factors can be used to assess the severity of the disease and guide closer monitoring of high-risk individuals.
3. Patients above 60 years of age and those with comorbidities should receive special attention and proactive intervention. Early identification and management of underlying conditions and careful monitoring of these patients can help prevent adverse outcomes and improve overall survival rates.
4. Patients with leukocytosis, hyperglycemia, elevated serum creatinine levels, and elevated C - reactive protein levels should be closely monitored and provided with appropriate and timely interventions, including intensive care support. This can help improve their chances of survival.
5. It is important to note that these recommendations are based on the specific factors identified in the study.
6. However, further research and clinical validation are necessary to confirm these findings and refine the recommendations.

58. Knowledge of Trainee Medical Doctors in Terms of Detection and Early Diagnosis of Breast Cancer

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Introduction: Breast cancer is the most common cancer and also the leading cause of cancer death among women worldwide.

Objective: The main aim of this study was to determine the knowledge of trainee medical doctors in the prevention, detection and early diagnosis of breast cancer.

Methods: A cross-sectional study was conducted among trainee medical doctors from 3 universities in Bujumbura. We used Mendeley for references, SPSS for data analysis and google forms for data collection. To determine the sample size, we used the formula of François Daniel. If the universities are considered differently, the sample size becomes 182. But if all the universities are taken as a whole, the sample size becomes 145. For our study, we considered a sample size between 145 and 182 to be representative. Those who made up the sample were chosen randomly. Individuals had an equal probability of being selected.

Results: A total of 175 trainee medical doctors participated in this study. The mean age of the participants was 27.46 ± 1.911 . The majority of the participants were male; this can be attributed to the small percentage of women entering medical schools in Burundi. More than half of the students had fairly good knowledge of the risk factors associated with breast cancer. The main risk factors mentioned by the majority were cancer in a 1st degree relative (94.3%), genetic predisposition (94.9%), hormonal contraception (80%). Students had a good knowledge of symptoms and signs of breast cancer, the most common were breast mass or lump 98.3%, change in size/shape of breast (93.1%) and the nodule in the armpits (84.0%). Knowledge about the means of prevention proved to be weak. Most of the participants (70.9%) recognize histological analysis as a means of concluding breast cancer diagnosis. The early detection methods most mentioned were breast self-examination (94.9%) and mammography (82, 9%). The level of knowledge of trainee doctors was not related to gender ($p=0.194$), age ($p=0.349$) or university of training ($p=0.085$).

Conclusion: This study found that trainee doctors did not have enough knowledge about breast cancer. There's a need to change the educational program by integrating the oncology course, organizing practical internships, offering students immersion from the first cycle in cancer services, trying to familiarize them with the practice of the physical examination of the breasts. This could allow them to disseminate knowledge and positively influence patient attitudes.

59. Epidemiology of Soil Transmitted Helminthiasis Infection Among School Aged Children in Pastoralist Communities of Narok County, Kenya: A cross-sectional Study

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Introduction: Approximately 1.45 billion people are infected with soil-transmitted helminthiasis (STH) globally. STHs are a major public health problem in Sub-Saharan Africa. In Kenya, the National School Based Deworming Program (NSBDP) was launched in 2012 with a goal of reducing STH prevalence in school-aged children (SAC) to <1%, however monitoring and evaluation results have consistently showed > 20% prevalence in Narok County. This study investigated factors associated with STH infections among SAC in Narok County.

Methodology: A cross-sectional study was conducted among 514 SAC from five schools in Trans Mara West sub-county, Narok. The sub-county was selected because it had participating schools within the NSBDP with a high prevalence of STH infection. Participants were selected using systematic random sampling. Stool samples collected from participants were examined for STH eggs using Kato-Katz technique. An open data kit questionnaire was used to collect demographics, household information, and STH knowledge from 139 of the 514 SAC. Descriptive statistics was used to summarize the data, prevalence and mean intensity of infections were calculated, and logistic regression used to determine factors associated with STH infections.

Results: The overall prevalence of any STH infection was 24.6% (95%CI: 21.1-28.6). *Trichuris trichiura* 14.4% (95%CI: 11.7-17.8), *Ascaris lumbricoides* 12.5% (95%CI: 9.9-15.7) and hookworm 0%. From multivariable analysis the only factors significantly associated with increased risk of STH infection were, children attending Karda and Nkarano schools with aOR=5.29 (95%CI: 1.45-19.24); p=0.011 and aOR=4.53 (95%CI: 1.29-15.97); p=0.019 respectively. For *A. lumbricoides*, children attending Nkarano School were associated with a significant risk of infection with aOR= 7.81 (95%CI: 1.81-33.63); p=0.006.

Conclusions: Despite the ongoing work of NSBDP, the STH prevalence is still high in Narok County, among SAC. This underscores the need for continued annual mass drug administration. The study found a correlation between children attending specific schools and STH infection risk, suggesting the importance of health promotion activities in selected schools.

60. Pandemic Preparedness Within Selected Multiple Points High Risk covid 19: Challenges & Lessons Learnt

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Background: Effective management of pandemics such as COVID-19 require a wholistic approach involving detection, response, management and mitigation. The approaches should involve well-trained workforce with the right technologies in place and a stringent response system. This study sort to investigate the level of pandemic preparedness within selected high-risk points in Kenya and evaluate its impact in pandemic detection, response and mitigation.

Methods: We conducted a qualitative cross-sectional study at seven high-risk points that included ports of entry Jomo Kenyatta International Airport, Nairobi; Namanga Kenya-Tanzania border point and four health facilities within Nairobi and National Referral Hospital. The sites were purposively sampled as high risk due to their strategic location and population served.

Qualitative data was collected through 28 Key Informant Interviews (KII) and seven Focus Group Discussions (FGDs). The KIIs involved nurses, facility in-charge officers, clinical officers and lab technicians. The FGDs at health facilities involved patients who had contracted COVID 19 while FGDs at the Namanga port involved truck drivers who had been tested for COVID-19. Qualitative data audios were transcribed, coded and analyzed using Nvivo software to generate themes for drawing conclusions.

Results: There was insufficient diagnostic capacity (lack of prior testing experience), inadequate infrastructure (limited testing centers) and increased risk to disease among the frontline workers. Some of the lessons learnt included role of age, comorbidities and community knowledge in pandemic management and mitigation.

Conclusion and recommendation: The study concluded that workforce was inadequate and the conventional testing technology insufficient for adequate and timely response. The new testing technology adopted required training and more experience to use. The pandemic had a negative impact on the health workers mental health due to the high workload and risk of waging war on the frontline. We recommend ongoing capacity building of workforce and improving infrastructures for future outbreak preparedness.

61. Practice What You Treat: Knowledge, Attitude, and Practices of Healthcare Workers during a Pandemic in a Low-Resource Setting

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Background: The knowledge possessed by healthcare workers (HCWs), along with their attitudes and practices play a vital role in effectively managing a pandemic. This is crucial considering that HCWs are exposed to great risk at the forefront of such crises. We evaluated the knowledge, attitude, and practices (KAP) of HCWs during the COVID-19 pandemic.

Methods: A cross-sectional study was conducted from May to August 2021. A structured questionnaire was used to explore the factors associated with COVID-19-related KAP, binary and multivariate logistic regression analyses were conducted, calculating odds ratios (OR) at a 95% confidence interval. Spearman's rank correlations were used to examine the correlations between KAP scores. R statistical software v.4.0.3 was used for data analysis.

Results: 438 HCWs participated in the study, majority of whom were female (n = 276, 64.5%), aged 35-39 (n = 91, 20.5%) and were informed through government websites (n = 349, 78.6%). Around half (n = 212, 50.4%) had bad knowledge. Good knowledge was associated with obtaining information from social media (AOR: 2.24, 95% C.I. = 1.34 – 3.74, p = 0.002) while government sites produced bad knowledge (AOR: 0.52, 95% C.I. = 0.3 – 0.93, p = 0.027). Good attitude was associated with getting information from official international sites (AOR: 2.36, 95% C.I. = 1.35 – 4.13, p = 0.003), while good practice involved referencing government sites (AOR: 2.56, 95% C.I. = 1.45 – 4.5, p = 0.001). There was a statistically significant correlation between attitude and practice (r = 0.3443, p = 6.843e-10) and between knowledge and practice (r = -0.3300, p = 2.76e-11).

Conclusion: The messenger's impact is crucial. We uncovered a significant disparity between HCWs' knowledge and practices, challenging the notion that efficacy beliefs alone determine behavior. Addressing knowledge gaps, improving attitudes, and promoting effective practices among HCWs during crises are urgent needs to enhance preparedness and response to future crises.

62. The Burden of Antimicrobial Resistance and Factors that Contribute to Irrational Antimicrobial Use in Children: One Year Post National Action Plan Implementation in Tanzania

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Background: The emergence and spread of antimicrobial drug-resistant organisms is a global challenge. In recognition of the global efforts, Tanzania launched its first National Action Plan (NAP) on antimicrobial resistance (AMR) in 2017. AMR prevention requires joint efforts among the government, researchers and community members. Strategies that involve the use of evidence-based results from researchers results in greater effectiveness by eradicating the source of the problem. Among the high-risk populations are children. A study was therefore conducted to explore the burden of AMR in children and factors that contribute to irrational antimicrobial use in children so as to come up with evidence-based recommendations.

Methods: Qualitative and quantitative methods were used to answer the study objectives, where the qualitative part involved one focused group discussion of 6-10 dispensers in 14 regions to understand the drivers of irrational use of antibiotics among children. The quantitative cross-sectional study involved laboratory testing of children's samples (200) to isolate extended-spectrum β -lactamase-producing Enterobacteriaceae (ESBL-PE). Thematic analysis was used to analyze qualitative data and SPSS software version 20.0 was used for quantitative data where the Chi-square test was used to determine associations between categorical variables, and p < 0.05 was considered statistically significant.

Results: The overall prevalence of ESBL-PE carriage was 56% (112/200), and was higher among children aged between 4-6 months old (81%), compared to other age groups. ESBL colonization was high in children with blood stream infection. The most commonly isolated ESBL-PE was E. coli (64/112, 45%). Focused group discussion members mentioned poor knowledge about AMR among community members, financial status and injudicious antibiotic use in animals and crops as drivers of AMR. They further mentioned poor practices among healthcare workers, and enforcement of existing laws as contributors of AMR. Improper infrastructure to support evidence-based treatment was also mentioned as a culprit.

Conclusion: There is still irrational antimicrobial use in children one year post NAP-AMR implementation in Tanzania evidenced by the high AMR rates in that population. Provision of AMR knowledge in the society and enforcement of laws to allow judicious use of antimicrobials is necessary to curb the AMR problem in the society.

63. River Blindness in Africa: A Call for Action

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Background: River blindness, also known as Onchocerciasis, is a Neglected Tropical Disease (NTD) that affects millions of people in Africa. It is caused by a parasitic worm that is transmitted to humans through the bites of infected black flies. This article focuses on River blindness as NTD in Africa, and provide recommendations that may be important to the African population and can be gradually adapted to fight against River blindness.

Methods: Specific keywords (River Blindness; Africa; Action; Neglected Diseases) were subjected to list down and analyzed the literature from PubMed – Medline and Google Scholar. All types of peer-reviewed records, including original research,

systematic reviews, and meta-analysis, were considered. The focus was given on studies published between the year 2002-2023. We excluded outdated studies and studies reporting data that is not in line with the objective of the study and the keywords of the search.

Main Context: Over 120 million people in 31 African countries are at risk of contracting the disease, particularly in rural areas with limited healthcare access. Despite effective treatments being available, river blindness remains a major health issue due to challenges in delivering treatment to remote areas and a lack of awareness and resources for Neglected Tropical Diseases. Addressing the disease requires widespread distribution of ivermectin through Mass Drug Administration and vector control measures.

Conclusion: International collaboration and funding play a crucial role in the fight against river blindness in Africa, with NGOs providing support for drug procurement, research, and capacity building. Strong partnerships between governments, non-profit organizations, and the private sector are essential for sustained efforts to eliminate this devastating disease.

64. Knowledge Mismatch, Behavior, Awareness and Information Needs of HIV/AIDS: Perspectives of School Going Adolescents in Kenyan Schools

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Background: HIV/AIDS remains a leading cause of morbidity and mortality in Kenya. Adolescents living with HIV (ALHIV) form a significant margin of those infected. 1.4 million adolescents and adults aged 15 years and older are estimated to be living with HIV in Kenya in 2021. There is an increase of new infections amongst this group that threatens to undermine past gains achieved. The study sought to quantify levels of knowledge, attitude, awareness and disclosure in school settings.

Methods: Participants completed a self-administered anonymized structured questionnaire. Information was sought on attitudes towards people living with HIV/AIDS to understand management and prevention of the same. Frequencies were calculated for all variables, and mean knowledge and attitude levels were compared using one-way ANOVA and categorical variables were compared using the chi-square tests.

Results: 375 adolescents were included in the study (mean age 16.8 years) and drawn from schools in Western Kenya. Of these, 126 (33.6%) were from a peri-urban school, 143(38.1%) from a rural school and 106 (28.3%) from an urban school. There was a significant difference in the mean knowledge score between the schools with mean scores of 27.0 and 26.5 in urban and peri-urban schools respectively, compared to 22.3 in a rural school ($p = 0.003$). Scores on "knowledge of HIV" among students who have friends living with HIV was significantly higher ($t=6.56$, $df=373$, $p<0.001$) than those who do not know anyone living with HIV. There was a significant difference in scores among individuals who had taken an HIV test before and those who had not taken an HIV test (25.6 versus 22.3, $p<0.001$). A significantly lower number of students aged between 19-22 years of age (30.8%) stated to have engaged in a peer HIV discussion in school within the last 3 months compared to other age groups (62% for the 15-18-year-olds and 50% for the under 15-year-olds, $p<0.001$). Summarized percentages indicate parents were frequently approached as disclosure recipients more than teachers, counsellors, friends and relatives.

Conclusions: The results highlight a need to include HIV education initiatives suggested within the education sector policy on HIV and AIDS to enhance prevention, care and support for learners in school settings.

Recommendations: Educational initiatives within the schools may strengthen prevention messaging lowering possible new infections.

65. Tracking SARS-Cov-2 Transmission and Co-infection with Other Acute Respiratory Pathogens Using a Sentinel Surveillance System in Rift Valley, Kenya

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Introduction: The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been the most significant public health challenge in over a century. SARS-CoV-2 has infected over 765 million people worldwide, resulting in over 6.9 million deaths.

Objective: This study aimed to detect community transmission of SARS-CoV-2 and monitor the co-circulation of SARS-CoV-2 with other acute respiratory pathogens in Rift Valley, Kenya.

Methods: We conducted a cross-sectional active sentinel surveillance for the SARS-CoV-2 virus among patients with acute respiratory infections at four sites in Rift Valley from January 2022 to December 2022. 1271 patients aged between 6 months and 98 years presenting with influenza-like illness (ILI) were recruited into the study. Nasopharyngeal swab specimens from all study participants were screened using a reverse transcription-quantitative polymerase chain reaction (RT-qPCR) for SARS-

CoV-2, influenza A, influenza B and respiratory syncytial virus (RSV). The samples that tested positive for influenza A and RSV were subtyped, while SARS-CoV-2 positive samples were further screened for 12 viral and 7 bacterial respiratory pathogens.

Results: We had a prevalence of 13.93% for SARS-CoV-2, 5.7% for influenza A, 1.96% for influenza B and 0.94% for RSV. Influenza A-H1pdm09 and RSV B were the most dominant circulating subtypes of influenza A and RSV, respectively. The most common co-infecting pathogens were *Streptococcus pneumoniae* (n=29) and *Haemophilus influenzae* (n=19), accounting for 16.4% and 10.7% of all the SARS-CoV-2 positive samples.

Conclusion: Augmenting syndromic testing in acute respiratory infections (ARI) surveillance is crucial to inform evidence-based clinical and public health interventions.

66. Cancer Control Through Surveillance: Harmonised Cancer Registration Guidelines for East Africa

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Background: Implementation of evidence-based cancer control strategies requires cancer registration data. However, cancer registration in East Africa is characterized by disparities in quality and coverage; insufficient harmonisation of procedures; different laws/legislation that limit data access; lack of networking; and insufficient national government recognition and funding. This aimed to harmonize the cancer registration guidelines and establish a coherent framework for enhancing cancer registration in East Africa.

Methods: The process of developing the “Harmonised cancer registration guidelines for East Africa” was participatory and engaged stakeholders from all the East Africa Community (EAC) member countries (Uganda, Kenya, Tanzania, Rwanda, Burundi, and South Sudan). Several strategies were used over a period of four years (2018-2021) including 1) Partnership and leadership formation (the planning committee composed of the Ministry of Health officials and policymakers, the Steering Committee composed of experts in cancer registration, and the writing team); 2) review of relevant literature on cancer registration guidelines; 3) conducting a SWOT analysis of cancer registration in East Africa, and 4) holding three harmonisation conferences.

Results: The East African Cancer Registration Guidelines were harmonised under the stewardship of the East African Center of Excellency for Oncology at the Uganda Cancer Institute (UCI) and were approved by the East African Community Sectoral Council of Ministers of Health on 10th December 2021 (EAC/SCHealth/21/Decision 003) and a directive issued to all partner countries to use the approved guidelines (EAC/SCHealth/21/Directive025). Several outcomes were achieved including: Commonly agreed-upon standards and processes for establishing and operationalizing cancer registries in the region; ownership of data and easy accessibility by the member states; and improved collaboration and networking among cancer registries in the region. The process also provided learning opportunities and was a catalyst to the individual countries that are now focusing on setting up their cancer registries.

Conclusion: Forging effective partnerships, wide stakeholder involvement; use of locally generated data (SWOT analysis and literature review); and locally-driven solutions are essential for generating local policies and creating a sustainable leadership structure for directing the cancer control effort in the region.

67. The Diagnostic Accuracy of Diabetes Retinopathy Screening by Ophthalmic Clinical Officers, Ophthalmic Nurses and County Ophthalmologists at 2 Selected County Referral Hospitals, Kenya

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Background: Globally diabetes retinopathy (DR) leads as a cause of vision loss in working age adults. Specialized retina eye examinations in Kenya are only available at national and some county referral hospitals, which are conducted by retina specialists, ophthalmologists, and trained technicians. Consequently, there has been limited coverage of retinal assessment in the country. An innovative DR fundus camera screening service run by ophthalmic nurses (ONs), ophthalmic clinical officers (OCOs) and county ophthalmologists was established in 2018 to support these screening services. The purpose of this study was to investigate the diagnostic accuracy of DR digital retinal camera screening by Ophthalmic Clinical Officers, and Ophthalmic Nurses by determining sensitivity and specificity as the primary outcomes.

Methods: A cross sectional study was conducted at 2 referral hospitals in Kenya. A Canon CR-2AF digital retinal camera, was used to screen diabetes patients by taking a standard single shot of 45degree view of the retina of each eye. The retina shots were graded for DR using the International Clinical Diabetic Retinopathy (ICDR) severity scale. All photos taken by

Ophthalmic Clinical Officers, and Ophthalmic Nurses were later blindly assessed separately by the county hospital ophthalmologist and retina specialist using the ICDR scale.

Results: A total of 308 patients with diabetes (median age 58 IQR 56-60, 53% female) were enrolled in the study. Sensitivity to identify any DR was (81.3%, 80.6%, and 81.54% for the OCO, ON and county ophthalmologist respectively). The corresponding specificities were 92.7%, 92.8% and 92.59%. Analysis of diagnostic accuracy of non-sight threatening DR against sight threatening DR revealed lower sensitivity for the three cadre groups although specificity remained high.

Conclusion: ON and OCO with basic training in DR fundus camera, are able to perform screening of DR with high specificity. Nevertheless, these cadres have limited ability to detect sight threatening DR cases.

68. Knowledge and Preparedness for Home-based, Family-Centred Management of COVID-19 Patients and Dead Bodies among Residents in a COVID-19 High-risk Setting: A Cross Sectional Study

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Background: The overwhelming Corona virus disease- 2019 (COVID-19) cases called for inevitable home-based care for some cases and direct involvement in COVID-19 dead body burials by many families worldwide. However, data on the knowledge and readiness of families for these practices was very scarce. We assessed the knowledge and preparedness for home-based, family-centred management of COVID-19 patients and dead bodies among residents of Wakiso district in Uganda during the first COVID-19 wave.

Methods: We conducted a cross-sectional study between 6th March and 4th April 2021. Household heads aged 15years (emancipated minors 15-17years old) and above in 5 sub counties of Wakiso district gave written informed consent and were interviewed using a pre-tested questionnaire. Multivariable logistic regression analyses were used to assess the association between selected demographic characteristics and COVID-19 related knowledge on home-based care and burials.

Results: We enrolled 205 participants, with a median age of 28 (Interquartile range (IQR): 25-35) years. Majority (n= 157, 76.6%) were female and had achieved at least secondary level of education (n =117, 57.1%). The mean knowledge score on home-based care for COVID-19 patient was 49.5%, while that on COVID-19 dead body management was 36.5%. Seven (3.4%) respondents were ready to undertake home-based care and dead body management. The remaining 198 (96.6%) unready respondents reported inadequate knowledge (n=166, 84%) and lack of personal protective equipment (PPE) (n=17, 8.6%) as the major barriers for their readiness. There was no statistically significant difference in both the knowledge on home-based COVID-19 patient care and dead body management stratified by demographics characteristics.

Conclusion: The knowledge and preparedness for home-based COVID-19 patient care and dead body management were sub-optimal among respondents. We recommend more public sensitization programmes on the general principles of home-based patient care and dead body management prior to new health policy implementation to improve on disaster preparedness in future outbreaks.

69. Prevalence and Factors Contributing to Missed Opportunities for Vaccination among Children Aged 0 to 59 Months Visiting Selected Health Facilities in Mogadishu, Somalia

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Background: Missed opportunity for vaccination (MOV) refers to any contact with health services by an individual who is eligible for vaccination (unvaccinated or 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 previous 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: This was multicenter based cross-sectional descriptive study design conducted from 1-30 June 2023. We randomly selected 9 health facilities in nine districts of Mogadishu with a non-probabilistic sampling of caregivers of children 0–59 months for exit interviews, and health workers for knowledge and attitudes using standard WHO tool for missed opportunity survey. A 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 missed opportunities for vaccination. Odds ratios were computed and P-value <0.05 was considered statistically significant.

Results: 234 caregivers with children aged 0–59 months and 166 health workers were interviewed and included in our analysis. Regarding the reasons for the current visit to health facility, 155 (66.3%) came to the facility for vaccination, 63 (26.9%) for treatment/medical consultation, 12 (5.1%) for nutrition purpose and others 4 (1.7%) other reasons which was not

specified. Most of the children 141 (60.3%) were delivered at the health facility while 12% and 11.5% were delivered at home through TBA and unassisted respectively. The prevalence of MOV was 26.5%. MOV occurred among 74.2% of children during non-vaccination visits (Medical consultation, nutrition and others), and 25.8% during vaccination visits (mainly due to the reasons related to the health facility (57%) and those related to the health worker (43%)). 92.7% of the children in the study had been immunized at least 1 antigen, 73.5% full immunized and 6% had never been vaccinated (Zero dose for routine immunization). Regarding the reasons for zero dose children, majority (43%) of the children who never been vaccinated were refusals (Decision maker refused to vaccinate the child). The majority, 153 (65.4%) of the caregivers had not attained formal education. Our results suggested that both individual and contextual factors associated with MOV, with children aged 0–59 months. 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 (general consultation/treatment, nutrition & others) [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 (poor knowledge about child should be vaccinated) [AOR= 13.006, 95% CI: 1.175-143.924] and caregiver attitude (bad effects of the vaccine) [AOR= 1.187, 95% CI:0.271-5.204] were significantly associated with MOV. Among 27.0% of health workers, they reported their vaccination knowledge was insufficient. 72.3% (120 out 166) health workers who participated the study knew all the antigens in the immunization schedule in Somalia that every child should receive- that is BCG, Oral polio vaccine (OPV), PENTA, Inactivated Polio vaccine (IPV) and Measles.

Conclusion: The prevalence of MOV was 26.5%. Child's age, child's place of delivery, non-vaccination visit, lack of enough vaccine information, caregiver knowledge and caregiver attitude were the significant associations contributing MOV.

70. Prevalence and Antimicrobial Susceptibility Profiles of *Staphylococcus aureus* from Raw Milk in Kigali City

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Introduction: *Staphylococcus aureus* is gram-positive bacterium that is coccus-shaped and arranged in “grapelike” clusters. *S. aureus* has developed resistance to commonly used antimicrobials. This study aimed at determining the prevalence and antimicrobial susceptibility profiles of *Staphylococcus aureus* from raw milk in Kigali City.

Methods: Raw milk samples were taken from each of three districts (Nyarugenge, Kicukiro and Gasabo) of Kigali city and transported to the Microbiology laboratory of the University of Rwanda, College of Science and Technology. *S. aureus* was identified using conventional techniques including culture on Mannitol salt agar (MSA), biochemical test and gram staining. Antimicrobial susceptibility testing (AST) of *S. aureus* isolates against commonly used antibiotics (Tetracycline, Ciprofloxacin, Gentamicin, Erythromycin and Cotrimoxazole) was performed by using disk diffusion method and data were analyzed by using Microsoft Excel.

Results: Of 300 milk samples, *S. aureus* was confirmed in 94 (31.3%). The highest prevalence (12.0%) was found in Gasabo district, followed by Kicukiro and Nyarugenge districts with 30 (10.0%) and 29 (9.3%), respectively. The AST results showed higher resistance tetracycline 35/94 (37.2%) while resistance to other antimicrobials varied between 3.2-31.9%.

Conclusion: The study highlights the presence of antimicrobial-resistant *S. aureus* isolates in unpasteurized milk. This calls for strengthening infection and prevention control strategies and improving educational campaigns to the community to consume only boiled milk.

71. Health Kiosks in Markets (HEKIMA); Strengthening Primary Care System for Prevention and Control of Cardiovascular Diseases in Vihiga County, Kenya

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Background: Non communicable diseases such as cardiovascular diseases, cancers, diabetes account for 27% of the total deaths and over 50% of total hospital admissions in Kenya. Cardiovascular diseases are the leading cause of NCD-mortality in Kenya as a result of ageing populations, urbanization and lifestyle changes. Cardiovascular diseases mortality and morbidity is worse in poor rural communities due to difficulties in accessing health services; as a result, they are less likely to go for checks-ups and remain vulnerable to the onset of cardiovascular disease. Community markets are social establishments with untapped potential to promote public health and interventions. Hence the establishment of Health kiosks in Markets to promote early diagnosis and treatment of CVDs in Vihiga County.

Objective: To determine the impact of health kiosks in market on the prevention and control of cardiovascular diseases in Vihiga County, Kenya.

Implementation: The Health Kiosks in Markets (HEKIMA) project was launched by the Kenya Medical Research Institute and King's College London in collaboration with the County leadership, health workers and market traders in Vihiga County. It is market-focused health initiative that seeks to improve access to health promotion services for the prevention of heart disease. HEKIMA kiosks were stocked with basic screening tools all certified by the ministry of health. They were operated by two trained Community Health Volunteers (CHVs) and supervised by a nurse with primary care experience. The kiosk staff delivered CVD risk screening (Hypertension, Diabetes mellitus, overweight and obesity), early intervention including follow up and referrals for pre-hypertensive and overweight participants and CVD health education and promotion. Each Kiosk had a market champion whose work was to promote engagement in the health kiosk. Additionally, the CHVs conducted health sessions on CVD risk factors to support behavior change. Those suspected to be hypertensive, obese and diabetic were referred to Bugina health centre for free treatment and management.

Outcome: A total of 2224 people were screened and reached with health messages. Among these 77% are females. Among those screened, 48% had high blood pressure, 32% were overweight and 12% had diabetes. 30% of those screened were referred to health facility. 34% of those referred to the health facility were followed up at least once at the kiosk.

Conclusion: Community markets are social establishments with a central locus of life in the rural areas and can increase the uptake of health promotion services by different members of society.

72. Co-infection of Pulmonary Tuberculosis and Aspergillosis Among Patients Attending Tertiary Hospital in Ilorin, Nigeria

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Background: Pulmonary tuberculosis (TB) is a common infection in developing countries associated with low socioeconomic status and this infection is occasionally misdiagnosed for aspergillosis. This research was conducted to establish pulmonary tuberculosis and aspergillosis co-infection among patients from Haart Clinic Medical outpatients and General out patients referred to University of Ilorin Teaching Hospital Ilorin, Nigeria.

Methods: Standard techniques such as Ziehl Nelson Staining, GeneXpert and growth on Sabouraud Dextrose agar for the identification and characterization of Mycobacterium tuberculosis complex and Aspergillus species. A total of 386 subjects were recruited for this study. Sputum samples were collected from patients suspected with pulmonary tuberculosis who consented to participate in the study, between February–August 2021.

Results: The study showed that, out of 386 subjects recruited for the study; 187 (48.4%) were males and 199 (51.6%) were female. While 42(2.5%) and 34 (17.1%) were TB-positive cases for male and female respectively. Age distribution of Pulmonary tuberculosis (and aspergillosis) were 15.4% (0%), 10.3% (25%), 18.7%(11.1%), 22.7%(21.2%), 9.8% (75%) and 114.9% (20%) for age range less than 10,10-19, 20-29, 30-39, 40-49, and patients above 50 years respectively. Combined aspergillosis co-infection and pulmonary tuberculosis was 21.1%.

Conclusion: The study shows co-infection of pulmonary tuberculosis and aspergillosis among patients attending tertiary hospital in Ilorin, Nigeria. Public health bodies should act to ensure equitable access to aspergillosis diagnosis and treatment.

73. Screening and Treatment of Sexually Transmitted Illnesses Among Females Who Inject Drugs in Githurai 44 Slums, Kenya

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Background: Persons who inject drugs (PWID) and especially the Females drug users face challenges in accessing health care. We looked at the prevalence of Sexually Transmitted Illnesses (STI) among the females who inject drugs in Githurai44 slums and evidence shows that females who abuse drugs are prone to this communicable illness. Their poor health seeking behaviors, unfriendly and judgemental health care personels, lack of knowledge on STIs pose challenges in their desire to seek for treatment.

Methods: A Sample size of 200 female who inject drugs (FWID) was achieved using the convenience sampling technique. A longitudinal study design was employed which involved asking the 200 FWIDs questions in order to screen them for Sexually Transmitted Illnesses. A screening questionnaire was used as a research instrument to collect data. Data was analyzed using the Statistical Package for Social Sciences Version 20.0 and presented in table and charts.

Results: 30 FWIDs of ages between (15-40) which represents a 15% of the females had STI syndromes and were all put on STI Treatment. At the covid19 peak (2020-2021) the STI screening were interfered with because of the movement restriction and

social distance measures put in place by the Government. With the aid of the field workers using the company identification card we were allowed to supply Condoms to our clients in the dens and this helped to curb to the STI transmissions. The FWIDs who sell sex for their living were also in their business during this period since the condom supply was uninterrupted.

Conclusion: Good adherence to STI medication and emphasis on the 4Cs (Counselling, Compliance, Condom use and Contact Treatment) of good STI management shows over 95% curative rates of the STI syndromes in FWIDs. The use of Information Education and Communication materials (IECs) and Health Education has played a key role in optimizing treatment outcomes among the FWIDs.

74. Sustainability of Multi-sectorial Rapid Response Team (MRRT) in Rwanda Health System

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Background: Rapid response teams come in a variety of shapes and sizes, but their purpose is to provide rapid assessment and deployment of resources to patients undergoing acute clinical deterioration. We should not wait for outbreaks to train emergency personnel.

Objective: To review the sustainability issues regarding the Multisectoral rapid response Teams in Rwanda Health System.

Method: A facility and policy-based in-house needs assessment study was conducted to appraise the effectiveness of the MRRT in Rwanda. Based on lessons learned from the COVID-19 pandemic to ascertain the effectiveness of existing systems in our locality. The ultimate goal was to develop a system that would be ready for the next pandemic.

Results: Steps to ensure the team's sustainability, include a critical assessment of its formation, such as team composition, activation, response time, response coverage, scope of activity, and cost. Professionals must have the following minimum skills: activate the Emergency Response Team and increase the number of responding contractors and local resources. Based on the initial information supplied by the First Person On-Scene, assess the severity, potential impact, safety concerns, and response requirements. Confirm safety elements at the site, such as the necessity for personal protective equipment, ignition sources, and the probable need for evacuation. As needed, communicate with and deliver incident briefings to corporate executives. Additional internal and external notifications must be coordinated and completed. Communicate with the Emergency Response Team and Response and cleanup efforts as needed. Another crucial step is to train emergency medicine doctors to lead all hospitals' accident and emergency departments. These specialists' minimal skills include but are not limited to. Capable of performing swift and accurate assessments, patient stabilization, disposition, and other critical care management activities. Prove proficiency in commonly used procedural skills, such as all types of resuscitation and life support. Demonstrate a broad understanding of clinical management issues as they pertain to acute care situations. Take the initiative and demonstrate the capacity to collaborate with multi-specialty teams while remaining conscious of their boundaries in emergency care. Enhance and apply existing clinical and examination skills in clinical practice to deliver comprehensive differential diagnoses and treatment plans. Demonstrate a dedication to the highest level of care, as well as ethical and professional behavior within the emergency medicine specialty and the medical profession. Conduct audit projects and demonstrate an understanding of the audit processes in order to monitor care delivery and improve care quality. To become physicians capable of doing research and disseminating findings to stakeholders in the field of emergency medicine.

Conclusion: Finally, the discussion of sustainability concerns the critical examination of the team's structure and makeup, as well as the training of emergency medicine professionals.

75. A Review of the Important Weapons and Future Perspectives in the Fight against Antimicrobial Resistance in Sub-Saharan Africa

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Description: Antimicrobial resistance (AMR) is one of the top 10 global health threats facing humanity, and sub-Saharan Africa (SSA) is among the heavily affected regions due to its weak health systems and limited resources. Due to an escalating number of AMR pathogens and the scarcity of new antimicrobials, efforts in the prevention of infections and the search for alternative treatment options are ongoing. The objective of this narrative review was to assess important weapons against AMR in SSA. We searched papers discussing different ways to deal with AMR in SSA. Biorender.com was used to draw figures summarizing different weapons and the One Health (OH) approach. The highlighted weapons include vaccines, education and awareness, infection prevention and control (IPC) using water, sanitation, and hygiene (WASH), alternative treatment options, the One Health (OH) approach, AMR surveillance, operational national action plans (NAPs) on AMR, antimicrobial stewardship (AMS) programs, and good governance and regulations. Despite not being used at a satisfactory level in SSA,

advanced techniques in dealing with AMR in SSA include (i) metagenomics, (ii) whole-genome sequencing (WGS) in AMR surveillance to track resistance trends and know when to intervene, and (iii) use of artificial intelligence in AMR prediction based on genomics data. The highlighted weapons have contributed to curbing infections due to AMR pathogens. The fight against the AMR threat in SSA has embraced a number of currently available strategies. The development of new ones will lower the consequences of such a threat for future generations.

76. Exploring the Determinants of Routine Data Use to Enhance Informed Decision-Making in Low and Middle-Income Countries Health Systems: A Systematic Literature Review

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Background: The fight against recurring global pandemics, like COVID-19 requires evidence-based planning and monitoring of interventions. A Routine Health Information System is central to evidence-based actions, providing routine data necessary to track health indicators and measure performance. However, studies show there is poor utilization of routine data to inform health decisions. Therefore, this review aims to determine the determinants for routine data use, looking at factors that support or hinder the use of routine data for informed health actions. The goal is to maximize the use and enhance evidence-based planning and monitoring of health interventions.

Methods: The Prisma framework was used to guide the review process, where four literature databases, i.e., PubMed, ScienceDirect, IEEE, and JStor, were searched as of June 2023, inclusive. Inclusion criteria were journal articles describing challenges or strategies associated with using routine data in LMICs and articles showing how routine data support planning and monitoring health interventions. Identified articles were screened against inclusion and exclusion criteria by three independent reviewers.

Results: After a full articles scan, 14 articles met the inclusion criteria and were selected for inclusion. Four (7) pieces focused on the challenges and factors associated with using routine data, three (3) articles focused on the strategies to address data use challenges, and three (4) articles focused on intervention projects addressing routine health data use. Most of the articles reported both challenges and strategies to manage them. Data quality was most commonly reported as a challenge to the use of data, extending to accuracy and accessibility. Where data were not sent to decision-makers on time and on a demand basis. Also, the data format was a challenge. Other challenges were a lack of friendly or convenient standard operating procedures on data accessibility and limited knowledge and skills in analysis, presentation, and interpretation of data among potential data users. Improving the data quality, the ability of data users to analyze and interpret the data, and enhancing data accessibility and availability in a friendly format are the strategies reported to improve the utilization of routine data in health systems.

Conclusion: Routine data is crucial for informed healthcare interventions. Routine data use practices challenges are observed starting from the point of data collection and data collection tools up to the data users. Further research is needed to determine the holistic approach to address routine data use determinants and build a data use culture in the health system. The improved routine data use will enhance the responsiveness of health programs and interventions to health needs and global pandemics.

77. Universal Health Coverage: A Qualitative Study Exploring Men's Experiences, Predispositions and Health Needs in Kenya

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Background: A gender equitable health system ensures that men, women and all population groups of other genders access and utilize services unhampered by financial, social, and geographic barriers and would address the populations' most urgent needs across the life span in an acceptable and equitable manner. There is limited data about the diverse experiences of men while interacting with the health systems in Kenya.

Objective: This qualitative study sought to explore men's perceptions, experiences, needs and potential strategies to inform an impartial implementation of Universal Health Coverage (UHC) in Kenya.

Methodology: Employing a phenomenological approach, 30 Focus Group Discussions with 296 men were conducted to elicit men's healthcare experiences in 12 counties in Kenya. Participants were purposively selected and mobilized through the support of health facility in charges, public health officers and community health extension workers

Results: Data was coded according to emergent views and further categorized thematically into three main domains (1) Perspectives and experiences of health access (2) Perceptions and social expectations concerning masculinity (3) Men's health needs. The qualitative research findings reveal financial constraints, lack of space and privacy, unavailability of male healthcare providers as some of the challenges faced by men in Kenya navigating healthcare. Additionally, stoicism, self-sufficiency

and cultural norms were shown to further influence decisions made by men to seek, access and receive healthcare. Notably, men highlighted that they too have needs especially those revolving around inclusivity of male-friendly healthcare environments, tailored interventions as well as mental health support.

Conclusion: Our study has shown that men face challenges in navigating healthcare systems. The expectations concerning masculinity further exacerbate the problem and disadvantage men, for instance, reluctance to discuss sensitive issues such as that around sexual health or mental health can hinder men's ability to receive appropriate care or preventive measures or cause late diagnosis and treatment when experiencing symptoms. This data provides important considerations for the development of a comprehensive and gender-responsive approach for UHC in Kenya. By addressing the specific healthcare needs of men, ensuring affordability of services, creating male-friendly environments and embracing inclusive health education, UHC can contribute to improving men's health outcomes and reducing health disparities. Therefore, health service delivery systems must be created and set up in a way that takes into account the various positions, opportunities, and vulnerabilities that men encounter as they seek healthcare to ensure that no one is left behind in pursuit of Health for all.

78. COVID-19 Vaccine Hesitancy and Acceptance Among the Residents of Nairobi County, Kenya, and Associated Factors

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Introduction: The COVID -19 vaccines provide renewed hope in the fight against the recent pandemic. Globally, countries have deployed mass COVID-19 vaccination drives, but there are people who are hesitant to receive the vaccine. To ensure widespread vaccination, it is crucial to analyze vaccine willingness and its determinants.

Methods: The present cross-sectional study examined the predictors of hesitance of the COVID-19 vaccine among the residents of Starehe and Langata subcounties in Nairobi County, Kenya. The study also explored the knowledge, beliefs, risks, and safety perceptions relating to the COVID-19 vaccine. A total of 348 study participants were recruited in the study. A 27-item questionnaire was used to interview the respondents. Data analysis was done using chi-square tests and logistic regression.

Results: About 48% of the respondents expressed willingness to receive a COVID-19 vaccine. Hesitancy to be vaccinated in the study area was high: 56% reported that they would wait while 21% reported that they would refuse. The age of the respondents ranged from 21 to 44 years with a mean \pm standard deviation age of 30.1 ± 6.85 years. Majority of the study participants were males (58.6%), married (51.2%), Christians (91.8%), unemployed (69.4%) and had attained secondary school education and above (76.4%). The sociodemographic factors which were associated with vaccine acceptance were; being female (adjusted odds ratio (AOR) 2.023 (95% confidence interval (CI) 1.514 to 3.805, $p < 0.001$); having secondary school education and above (AOR 1.694 (95%CI 1.0304 to 2.315, $p < 0.001$); having a higher income ($>US\$500$) (AOR 2.141 (95%CI 1.441 to 3.739, $p=0.001$)). Further, knowledge of the types of vaccines one should get, understanding the way the vaccines work and having the confidence in the vaccine to stop the pandemic were associated with vaccine acceptance (AOR 3.102 (95%CI 2.608 to 5.312, $p=0.0121$); 2.779 (95%CI 1.684 to 7.308, $p=0.041$) and 1.518 (95%CI 1.005 to 4.974, $p=0.026$) respectively).

Conclusion: There is a need to institute appropriate strategies to enhance acceptance of the vaccine in this population.

79. Seasonal Variation and Predictors of Childhood Diarrhea in Tanzania

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Background: Globally, diarrhea kills over 1.7 billion children under five annually, while in Tanzania, diarrhea contributes to 9% of all under five deaths. Research acknowledges the association between the magnitude and pattern of diarrhea with seasonal variation, but quantification of this association is scanty in Sub-Saharan Africa, notably Tanzania. Diarrhea mapping aided interventions elsewhere, a gap persists in Tanzanian pathogen mapping efforts.

Aim: This study aims to determine the spatial distribution of diarrheal pathogens, and seasonal factors associated with diarrhea among children under five in Tanzania.

Materials and methods: This is a cross-sectional study, conducted in Tanzania's six regional referral hospitals focuses on children under five from May 2023 to April 2024. Blood and stool samples are collected for pathogens identification. Epidemiological data are collected through a DHIS2-configured with questionnaire, while meteorological data are obtained

from Tanzania Meteorological Authority. Distribution of diarrhea pathogens across regions will be mapped using QGIS, while to assess the association between seasonal factors and diarrhea, a multilevel analysis will be used to determine this association, and also a time series analysis will be used to classify diarrheal magnitude by seasonal and pathogens.

Expected result: This study seeks to reveal the type and magnitude of diarrhea pathogens in regions, as well as which seasons have high diarrhea episodes among children under five.

Preliminary findings: From May 2023 to 8th September 2023, a total of 425 children under-five surveyed. Their mean age in months is 19 ± 14 , and majority 254(59.8%) are males. There were 204 (48%) who presented with diarrhea sign and symptoms, with 122 (59.8%) having a fever. Mbeya region had more cases 68 (33.3%) than other regions. A total of 476 samples (312 blood, and 164 stool) were collected; however, their analysis is still ongoing.

Conclusion: This study is essential because its findings can contribute to providing information to the government to decide when and where to focus intervention efforts.

80. Assessment of Knowledge and Attitude towards Antibiotic Resistance Among People Residing in Namuwongo, Makindye East division Kampala, Uganda, a Qualitative and Descriptive Cross-sectional Study

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Background: There is an increasing global concern of Antibiotic resistance causing a serious threat to public health with estimated 700,000 deaths per year and it's estimated to increase to about 10 million deaths by 2050(WHO). The aim of this study was to assess the knowledge and attitude towards antibiotic resistance among people residing in Namuwongo, Makindye East Division, Kampala Uganda.

Methods: A qualitative and descriptive cross-sectional study among 178 randomly selected participants through a structured questionnaire.

Results: Of the 178 respondents, majority of the respondents were females 125/178 (70.22%). 137 (76.97) of residents agreed that missing an antibiotic dose contributes to antibiotic resistance (mean score of 2.62 ± 0.74). 122 (68.54) respondents agreed that consumption of antibiotics without physicians prescription can contribute to antibiotic resistance, (mean score of 2.45 ± 0.85). Majority of respondents agreed to antibiotic resistance is increasing (73.60%, Mean score 2.58 ± 0.75). 135 (75.84) agreed that antibiotic resistance can be accelerated by the overuse of antibiotics (mean score of 2.61 ± 0.73). But 127 (71.35) also agreed that Antibiotics are effective for the treatment of both bacterial and viral infections (mean score of 2.56 ± 0.75). 93.82% agreed that the government should create more awareness of antibiotic resistance (Mean score 2.91 ± 0.37).

Conclusion: There was poor knowledge about the usage of antibiotics in treatment of viral infections. There is need for raising more awareness and education on antibiotic resistance, particularly on the proper antibiotics usage.

Recommendations: Each pharmacy should at-least have a basic laboratory so that patients get tested before any prescription, this will curb the unnecessary and wrong usage of antibiotics for illnesses not caused by bacteria. Drug shops should strongly be advised only to dispense medicines especially antibiotics provided the buyer has a genuine prescription note from a medical doctor, this practice shall thereby reduce self-medication that leads to irrational use of antibiotics in treatment of viral infection.

81. Disposal Practice of Unused/Expired Human and Veterinary Medications from Households in Kigali City, Rwanda

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Background: The occurrence of pharmaceutical residues in the environment has been mainly attributed to human activities. It is a public health concern as the consequences may include accidentally or intentionally poisoning, developing antimicrobial resistance, and loss of life. The study aimed at assessing the knowledge and practice of residents in Kigali on disposing of unused/expired human and veterinary medications.

Methods: A descriptive cross-sectional study was conducted among 32 human pharmacies, and 15 veterinary pharmacies across the 32 sectors in Kigali. The knowledge and practice of the clients from the selected pharmacies were assessed using a questionnaire.

Results: In total, 470 participants completed the questionnaire. The overall knowledge score was 30.64% about medications disposal and 53% related to the consequences of improper disposal of medications. Over 99% of respondents wrongly thought washing away in the sink or burning were proper ways of disposing of unused medications. All respondents (100%) had used at least one improper method to discard medications. The most common disposal practices were disposing of them in regular

garbage (43.8%) and flushing them into the toilet (22.8%). Only <1% of respondents had ever returned them to pharmacies or health facilities. The majority of respondents (90.4%) kept leftover medications for reuse in the future. Over 80% reported that they did not get any instructions on how to discard medications and did not know they could return leftover drugs to the hospital/pharmacy.

Conclusion: The knowledge and practice towards disposing of unused/expired human and veterinary medications were largely inappropriate. There is a need to raise the awareness of the public and healthcare providers about safe disposal of leftover medications. Health facilities and pharmacies should set up collection boxes for unwanted/unused medications from the public. A policy guide on the recollection of unwanted and leftover medications is needed.

82. Descriptive Analysis of Patients tested for Pulmonary Tuberculosis at Saboti Sub County Hospital Laboratory, 2020

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Introduction: Tuberculosis (TB) is a global threat to public health and is the leading cause of death by a single infectious agent with 1.6 million deaths in 2017. Kenya is among 30 high burden TB states according to the World Health Organization (WHO) and the disease is the 4th leading cause of death. Finding all people with TB and successfully treating them is an important priority for the country.

Objectives: The study sort to describe socio demographics of patients tested for TB at Saboti Sub County Hospital (SSCH) To Establish the age group with highest Tb infection at SSCH and to assess Tuberculosis positivity and to characterize TB by HIV Status

Methods: The Study area was Saboti Sub County Hospital and all patient who were captured on AFB& Genexpert Register, 2020 (n=177) were included. This was a retrospective data review from Register. The Data was abstracted from the register and descriptive data analysis done on Microsoft Excel 2016. The Ethical approval was granted by the Trans Nzoia County Research and Publication Unit

Results: The average age of the patient tested for TB was 42.4 years with SD +- 20 years and 52.3% (n=153) of tested were female. Patients aged of 15-24 years formed the highest proportion of Pulmonary Tuberculosis Cases at 5% (n= 177). 34.1% of the total tested for TB were positive for HIV while 11.2% were of Unknown HIV status (Not done). 9.6% (n=177) had turned out to be positive for Pulmonary Tuberculosis while Male patients had the highest TB positivity rate 6% (n=153) and 13% were HIV/TB Co-infected while 5% of unknown HIV status turned positive for TB

Discussion: Patients of 15-24 years had the highest Pulmonary Tuberculosis disease burden at 5% (n=177). This is the school and college going age group, posing potential risks of TB spread and outbreaks in the learning institution. The high TB infection among male was an indication more infected males were still unidentified at the community level.

Recommendations; Strengthen Laboratory Testing, intensify contact Tracing, enhance screening and testing TB in People Living With HIV (PLWHIV) and Intensify sensitization of TB prevention practices and encourage screening and testing especially among youths, young adults and male with signs and symptoms and conduct HIV Testing to all patients tested for TB.

83. Utilization of Cervical Cancer Screening Services among Women aged 30-49 Years in Kitui County, Kenya

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Background: Cancer new cases were estimated at 569,847 and 311,365 deaths recorded in 2018 worldwide. Cervical cancer is primarily associated with young women. Women aged 50 years and below accounts for 62% of all cervical cancers. More than a million women in the world are living with cervical and most of them have no access to screening, treatment and palliative care, resulting in late treatment. The study sought to investigate the determinants of utilization of cervical cancers screening services among women aged 30-49 years in Kitui West Sub-County.

Methods: The study population were women aged 30-49 years of age. A stratified random sampling of villages was used to obtain 270 respondents from the study population (2542) from where Data was collected using self-administered semi-structured questionnaires issued to women aged 30-49 years in Kitui west sub-County. The study adopted a cross-sectional descriptive study design. The study used quantitative research methods to obtain data from selected respondents. Data from the respondents was coded, grouped and arranged as themes and sub-themes in accordance with the study objectives, analyzed using statistical package of social sciences (SPSS) in conjunction with Microsoft excel. The study used chi-square for which utilization versus social demographic factors knowledge, awareness and perception were calculated at 95% interval and a margin of 0.05% error to determine the relationship between utilization and knowledge, awareness and perception.

Results: The results found out that Majority of the participants 145 (53.7%) were aware of the cancer screening. There was a no significant relationship ($p=0.054$) between the awareness and cervical cancer screening services among women aged 30-49 years. The study established that 35% of the participants had been screened for cervical cancer while 65% had not been screened at all. The study established that, majority 152 (56.3) of the respondents had low knowledge on cervical cancer and there was a relationship between knowledge on signs ($p=0.001$) and prevention of cervical cancer ($p=0.002$) and utilization of cervical cancer screening services. Regarding perception there was a relationship between whether one perceived screening to be necessary ($p=0.011$), painful (0.0221) and screening was a procedure or commercial sex workers ($p=0.026$) and utilization of cervical cancer screening services among women aged 30-49 year.

Conclusion: Based on the findings of this study, it was concluded and recommended that, although majority of women are aware of the cervical cancer, the screening is low. According to the low utilization of cervical cancer screening services at 35% there is need for sensitization on screening services. The Ministry of Health should advocate for cervical cancer screening early enough and tailor the awareness through health education seminars in the community to help improved transfer of correct knowledge on cervical cancer screening services.

84. Addressing Malaria through Durability Monitoring of Long Lasting Insecticide Nets: Results for Attrition and Fabric Integrity over 12 Months of Net Use in Kenya

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Background: The use of long-lasting insecticidal nets (LLINs) is a key strategy for malaria control. LLINs are nets pretreated during manufacturing and should retain their efficacy against mosquito for a minimum of 3 years. However, studies have reported that LLINs protective ability declines with time and may be lost before the three years are over. The nets also develop holes with time affecting their contribution to malaria transmission control. The objective of this study is to monitor durability of LLINs distributed in Kenya in 2021 mass net distribution.

Methodology: Repeated cross-sectional surveys of LLINs at 12 months of use in households in 5 counties. The LLINs brands included Yorkool® in Kisumu, MAGNet® in Nandi and Turkana and DuraNet® in Kirinyaga and Taita Taveta Counties. The target population was LLINs distributed during the 2021 mass net distribution. LLIN presence and use in the household was observed. Holes on LLIN were assessed and classified according to WHO classification.

Results: A total of 1158 LLINs were sampled. An attrition of 14.8% was reported, with majority of the LLINs (67%) having been given away. Total 39.4% of the LLINs had at least one hole with lower side having majority of the holes (86.6%). Kisumu had highest LLINs with at least one hole (77.8%). Overall, 72.4% of the nets had been washed with a majority using detergent powder (47.0%). A majority 60.2% reported drying the LLINs under a shade.

Discussion: Attrition of 14.8% was majorly attributed to giving away of the LLINs to relatives. A majority of nets did not have holes at 12 months and those which had holes were still in good condition thus offering protection to the users. A good proportion of the nets were dried under direct sunlight which can have an effect on the net.

85. Unmasking Healthcare Workers' Voices: A Discussion on the COVID-19 Pandemic Experience

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Background: During the COVID-19 pandemic, governments worldwide implemented various measures to contain the virus. While existing studies have primarily focused on the mental health of healthcare workers (HCWs) during the pandemic, 2-3 there has been a significant gap in assessing the perspectives of HCWs regarding government responses. This is especially notable in African countries, where HCWs bore the direct impact of these policies. Therefore, the objective of this study is to investigate the perceptions of healthcare workers on the COVID-19 response by the government and Kiambu County.

Methods: Closed-ended questions were used to assess the overall effectiveness, initial response, and the then-current state of COVID-19 containment efforts in Kenya and Kiambu County. Open-ended questions were posed to allow respondents to provide detailed insights into their opinions on each question at both the national and county levels. This was conducted using a semi-structured online and hard-copy interviews with 438 HCWs in Kiambu County, Kenya, from March 11 to August 12, 2021. Qualitative inductive and deductive data analyses methods were employed for the analysis.

Results: The majority of respondents were females (n = 276, 64.5%), 35-44 years old (n = 170, 38.5%), obtained a diploma (n = 263, 59.6%) and worked in a Level 4 medical facility (n = 119, 27.0%). The feedback was mixed but consistent between both levels of government. Roughly half of HCWs approved of the government response, while roughly half HCWs dissented. Nine themes emerged: i) Adequate government response; ii) Laxity in public compliance; iii) Lack of healthcare resources; iv) Aggressive initial policy; v) A misinformed public; vi) Slow and inadequate response; vii) Optimism; viii) Decayed adherence to protocols; and ix) Breakdown of systems.

Conclusion: While half of the HCWs praised both government levels for their prompt response and expressed optimism, significant challenges emerged. To prepare for future crises, HCWs should be more involved in devising the public response to health crises. This will serve to also ensure the public receives trustworthy information in times of crises. To address the lack of healthcare supplies and to enhance self-reliance, we recommend allocating funds to bolster African-made medical supplies. To restore trust in public institutions, combatting misinformation on social media and updating local guidelines are vital, as are comprehensive public awareness campaigns, open data sharing on COVID-19, anti-corruption measures, and transparent communication systems between the governments and their public. By implementing these recommendations, policies can address HCWs' concerns, address response disparities, and improve overall handling of emerging and re-emerging health crises.

86. Respiratory Symptoms and Dust Exposure Among Cement Processing Factory Workers, Tanzania

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Background: Cement manufacturing is among growing industry in Tanzania. It involves processes from blending, kiln burning, clinker, grinding and cement final production. All these cement manufacturing processes generates cement dust which contain silica and other toxic materials which potentially affect respiratory system of exposed workers.

Methods: This cross-sectional comparative study design was conducted at Dangote cement processing factory and Ndanda mineral water processing factory as control, all of these factories are located in Mtwara region in Tanzania. Total of 398 workers were selected randomly from these two factories. Data were collected using structured questionnaires for respiratory health symptoms, Checklists was used for the observational parameters. Dust sampling was done using Side Kick Casella (SKC) pumps and PVC filter on IOM cassettes was used to determine dust exposures. The analysis was done by SPSS program version 20.

Results: Packing and cleaner were the sections with higher total cement dust concentrations above Occupational Exposure Limit which were 33.24 and 15.39 mg/m³ respectively. Workers in cement processing factory were exposed to higher levels of total dust with AM 14.1033 mg/m³ (SD 4.357) than in mineral water processing factory AM 0.0867 mg/m³ (SD 0.035). The Prevalence of respiratory symptoms was higher among workers in cement processing factory (45.7%) than in mineral water processing factory (25%), this was statistically significant.

Conclusion: Exposure to cement dust in a working environment causes the increase in work related respiratory symptoms and reduced lung function. A control measure to decrease the dust exposure level among cement workers in line with periodic medical examination is highly needed.

87. Determinants of Modern Contraceptive Utilization Among Women of Reproductive Age in Terekeka County, Central Equatoria State, South Sudan

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Introduction: South Sudan in general has low uptake of modern contraceptives and therefore this study aimed to assess the determinants of modern contraceptive utilization among women of reproductive age in Terekeka County

Methodology: A mixed cross-sectional study design was adopted and quantitative data was collected from 384 women of reproductive age through structured interviews while qualitative data was obtained using focus group discussions and key informant interviews. Data collection was conducted from August to September 2021 and analysis was done using the Statistical Package for Social Scientists (SPSS) version 23.0 and thematic content analysis.

Results: The study revealed the level of education of women (AOR=8.68, CI: 3.22-23.42), occupation of women (X²=19.56, p-value <0.001), religion of women – Muslim (X²=7.45, p-value=0.02) and having 6-12 number of children (AOR=5.36, CI: 0.66-43.79) were the socio-demographic determinants while age of women and their marital status were not associated with modern contraceptive use. Knowledge on modern contraceptives (AOR=3.7, CI: 1.43-9.61), free family planning services (X²=23.39, p-value <0.001), access – waiting for less than 30 minutes at health facility (AOR=6.80, CI: 2.41-19.15) and

husband's support ($X^2=19.28$, p -value <0.001) were found to be the health services factors. The prevalence of modern contraceptive utilization in Terekeka County was 21.88% (CI: 18.02-26.29).

Conclusion: Level of education of woman, occupation, religion (Muslim), number of live children, knowledge on modern contraceptives, access and partner's support were positively associated to modern contraceptive utilization while age of woman, marital status and traditional healers were not. The prevalence of modern contraceptive utilization among women of reproductive age was 21.88% (CI: 18.02-26.29), higher than 5% (FP2020 FPET, 2016) as well as the South Sudan government target of 10%. Recommendations: Implement demand creation activities - awareness, Family planning services providers to encourage partners' support and further research on why Terekeka County has higher prevalence.

88. Assessment of Disability among Leprosy Patients on Treatment Initiation in Kwale and Kilifi Counties, Kenya

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Background: Late diagnosis and treatment of leprosy not only increases disease severity, leading to disability, and disfigurement of the body, but also causes income loss, discrimination, and social stigma.

Objective: The purpose of this study was to analyze the disability profile of leprosy patients registered for treatment in Kwale and Kilifi counties at the time of diagnosis.

Materials and methods: This was a cross-sectional study of leprosy patients who were identified retrospectively from leprosy treatment registers between January 2014 and December 2019. Data was extracted from the treatment registers using a data extraction form. The data was analyzed using STATA version 13, and descriptive analysis was done to generate frequencies, distributions, and percentages.

Results: A total of 81 leprosy patients were assessed for disability on initiation of treatment. Males were (60.4%) and a majority 72 (88.8%) of the patients had multibacillary type of leprosy. Among these patients 55 were diagnosed with physical disabilities of grade-1, 15 (18.5%) and grade-2 40(49.38%). The main nerves involved were ulnar 41 (51%), followed by radial 26(32%) and almost all nerves assessed had bilateral (left and right) thickening. Anatomically deformities were found in the upper limbs 43(53%), lower limbs 41(50.6%), presenting as skin lesions 37(37%) and as secondary injuries 30(37%).

Conclusion: Several disabilities and deformities were identified on initiation of treatment among the leprosy patients. This is an indication of delayed leprosy diagnosis in this community. A call for interventions to support early diagnosis of leprosy is needed and in addition efforts to enhance follow-up of patients during the treatment phase and after release from treatment are recommended as this will identify patients who may require rehabilitation care to minimize the effects of disability.

89. Prevalence and Risk Factors Associated with Syphilis among Female Sex Workers in Kigali City

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Background: Globally, 12 million new cases of syphilis occur every year and most of them are found in the sub-Saharan Africa (SSA). The aim of this study was to determine the prevalence and factors associated with Syphilis among female sex workers (FSWs) attending health facilities in Kigali.

Methods: A cross-sectional study was conducted among 1277 FSWs from health facilities of Kigali from January 2020 to December 2021. Univariate, bivariate, and multivariate logistic regression analyses were used for assessing potential associated factors.

Results: The study revealed 5.9% prevalence of syphilis among study participants. The prevalence by district of Kigali was 5.6%, 5.1% and 8.9% in Gasabo, Kicukiro and Nyarugenge respectively. The mean age of study participants was 29.8 years, and 70% of study participants had primary education and 1.1% reported to have secondary education. Of 1277 FSWs, 74.8% were jobless while 2.5% were full time employees. The bivariate logistic regression showed that behavior and clinical factors (presence of STIs symptoms and STIs diagnosis/treatment history among FSWs) were positively associated with syphilis. In multivariate logistic regression, FSWs that had a history of STIs diagnosis or treatment in the previous 12 months were more likely to test positive for Syphilis (aOR = 2.4 [95%CI: 1.5 – 3.9]) compared to FSWs without STIs history. To have STIs symptoms was found to be associated with having Syphilis (aOR = 2.6 [95%CI: 1.6 – 4.4]) compared to FSWs without STIs signs.

Conclusion: The findings showed that the prevalence of Syphilis among FSWs was 5.9% and it was positively associated with having STI symptoms and an STI diagnosis history and call community health intervention for that specific group of people.

90. Uptake of Malaria Vaccine and Risk of Infection among Children in Western Kenya

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Background: Malaria vaccine provides affordable intervention for the global leading killer of children under 5 years old. However, there is limited data on the uptake. This study assessed the uptake of the malaria vaccine and its association with malaria occurrence to inform various interventions. The objective of the study was: To determine the uptake of malaria vaccine and risk of malaria infection due to non-compliance among children aged 6-36 months in Western Kenya.

Methods: The study employed a quantitative cross-sectional design, caretakers of 319 children 6-36 months in the Muhoroni sub-county were eligible for the study, a stratified random sampling method was used and data was collected using ODK collection. Descriptive statistics and logistic regression were used, and data was analyzed using STATA.

Results: The results show poor uptake of the Malaria vaccine; 1st dose, 72.10%, 2nd 66.68%, 3rd 59.40%, and 4th 31.35% respectively. The results showed 67.57% of study participants were positive for malaria. Children who didn't comply were 6 times more likely to get malaria infection as compared to a child who did not (COR 5.87, 95% CI 2.25-15.31, P value ≤ 0.001). Children who haven't received any dose of malaria vaccine were 3 times more likely to get malaria infection as compared to children who received any amount of malaria vaccine (COR 2.72, 95% CI 1.26-5.88, P value =0.011). Age was a risk factor, children in the age category of 24-36 months were 7 times more likely to get malaria infection than children in the age group of 0-6 months [COR=7, 95%CI=0.09-2.73, P=0.03].

Conclusion concluded that there is low uptake of the malaria vaccine, lack of or poor Vaccine uptake increases the risk of infection, and age is a risk factor for malaria infection. There's a need for; health education on the vaccine, and interventions to boost Malaria vaccine uptake.

91. Evaluation of Bacterial Pathogens from Selected Diabetic Foot Ulcer Patients at Thika Level 5 Hospital, Kiambu County, Kenya

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Background: Diabetic foot ulcers have a major impact on the morbidity and mortality of patients with diabetes in Kenya. There is a lack of up-to-date information on microbial isolates from diabetic foot ulcers in Kiambu County. Gram-positive and gram-negative bacteria are the major cause of these infections in diabetic foot ulcers. Timely diagnosis of diabetes mellitus and prognosis of diabetic foot ulcers is very important to reduce disease progression and other infections.

Objective: This study aims to evaluate bacterial pathogens from selected Diabetic foot ulcer patients at Thika Level 5 Hospital, Kiambu County.

Methods: A laboratory-based cross-sectional study design was used. The study was conducted at Thika Level 5 Hospital for 3 months. Twenty-five patients were selected through Consecutive sampling and informed consent was taken. Sterile cotton swabs were moistened in normal saline and used to obtain pus swabs aseptically. The swabs were cultured on blood agar and MacConkey agar and incubated aerobically for 24 hours at 37°C. Pure colonies were gram-stained and API 20E biochemical tests were carried out to identify the gram-negative bacterial isolates. oxidase test and API 20 NE was done to identify *Pseudomonas aeruginosa*. Test such as catalase, Staphareux, DNase, Lancifield grouping were used for identification of gram-positive bacteria.

Results: Of the 25 patients, 24(96%) patients had bacterial-infected DFU. Most patients were aged 51-60 years (41.67%) which was scientifically significant with a $p < 0.05$. Most of the foot ulcers were classified as Wagner grade 2(41.67%), with a $P < 0.05$. 23/24(96%) had poly-bacterial infection. In total 64 bacterial pathogens were isolated from the pus swabs. Of these, 23(36%) were gram positive, and 41(64%) were gram negative pathogens. The most predominant bacteria isolated were *Escherichia coli* 21(33%), followed by *Staphylococcus aureus* 11(17%), *Klebsiella oxytoca* and *Streptococcus pyogenes* each 9(14%), *P. mirabilis* 7(11%), and *P. aeruginosa* 7(11%).

Conclusion: There is a need for routine screening of diabetic foot ulcers as well as cultures to reduce misdiagnosis and progression of diabetic foot infections

92. SARS-CoV-2 Seroprevalence in a Pregnancy Cohort in Kenya from March 2020 to March 2022

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Background: Sero surveillance characterizes infectious disease evolution, revealing spread patterns, sociodemographic risks, and immunity. Relying solely on PCR yields incomplete infection rates due to limited reach. Our study complements PCR with serology, assessing pandemic progression. In this study, stored serum from a pregnancy cohort study were used to determine the SARS-CoV-2 seroprevalence between March 2020 - March 2022 in a rural and urban setting in Kilifi County, Kenya

Methods: This descriptive study was nested within an observational pregnancy cohort study with prospective data and sample collection and biobanking. The cohort study was set in rural hospital (Rabai) and 1 urban hospital (Mariakani) in Kilifi, Kenya. A representative random sample of stored maternal blood collected was obtained during antenatal visits and at delivery between March 2020 and March 2022. Maternal blood was collected, and the serum was aliquoted and stored at -80 degrees at a biorepository. Antibodies were tested against the spike protein using a qualitative SARS-CoV-2 ELISA kit (Wantai) that detects total antibodies. All positive samples were retested using anti-SARS-CoV-2 NCP ELISA and anti-SARS-CoV-2 QuantiVac ELISA kits to detect IgG antibodies to the nucleocapsid and spike proteins, respectively.

Results: A total of 2566 samples were tested. The average seropositivity rate for the entire study period was 54.7% (52.77-56.64). There was an overall trend of increasing seropositivity from 0% in March 2020 to 89.7% in February 2022. There was no difference in seroprevalence between the urban and rural sites, but villages adjacent to the major highway traversing the study area had higher seroprevalence.

Conclusion: This data demonstrates a rapidly progressing infectious disease with a cumulative incidence reaching most of the population by the end of the study period. The findings highlight the potential of serological tests in monitoring pandemic progression, complementing PCR testing, which captures only a fraction of cases. Emphasizing on the role of sero surveillance as a powerful tool in gauging the extent and direction of disease outbreaks as we prepare for future pandemics.

93. Hospital Thromboprophylaxis in a Country with Low Income: Case of The University Hospital Center of Kamenge, Bujumbura, Burundi

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Description: Venous thromboembolism (VTE) remains a major cause of morbidity and mortality in hospitalised patients. The conditions that predispose a patient to VTE are well known and include venous stasis, endothelial injury and hypercoagulability. An increased risk of VTE is generally associated with patient-related characteristics such as age, obesity and restricted mobility and disease-related characteristics including malignancy, congestive heart failure, stroke and recent myocardial infarction, thrombophilia or a history of VTE, recent fracture and arthroscopic knee surgery.

Background: Venous thromboembolic disease is a real public health problem worldwide because of its high incidence and frequent fatal complications. In a country with limited resources, there is a lack of technical and material resources with low purchasing power.

Aim: To determine the epidemiological and clinical aspects of venous thromboembolic disease in Burundian hospitals among patients undergoing prophylaxis.

Patients and Methods: This was a prospective descriptive study conducted at Kamenge university hospital from September 2019 to December 2019. It included any patient hospitalized in the internal medicine, surgery and gynecology-obstetrics departments.

Results: A total of 352 patients had been hospitalized in the three departments and 66 of them had benefited from thromboprophylaxis, i.e., 18.7% of cases. Among the factors of thrombosis, bed rest for more than 3 days predominated with 96% of cases. Enoxaparin topped the list of low molecular weight heparins prescribed. No physical means were used as thromboprophylaxis.

Conclusion: Thromboprophylaxis is underused in our hospitals. In order to reduce the negative impact of thromboembolic disease, health personnel must be trained in its management and the population must be made aware of it.

94. Pandemic Preparedness Within Multiple High-risk Points for COVID 19: Challenges & Lessons Learnt

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Background: Effective management of pandemics such as COVID-19 require a wholistic approach involving detection, response, management and mitigation. The approaches should involve well-trained workforce with the right technologies in place and a stringent response system. This study sort to investigate the level of pandemic preparedness within multiple high-risk points in Kenya and evaluate its impact in pandemic detection, response and mitigation.

Methods: We conducted a qualitative cross-sectional study at seven high-risk points that included ports of entry Jomo Kenyatta International Airport, Nairobi; Namanga Kenya-Tanzania border point and four health facilities within Nairobi and a National Referral Hospital. The sites were purposively sampled as high risk due to their strategic location and population served. Qualitative data was collected through 28 Key Informant Interviews (KII) and seven Focus Group Discussions (FGDs). The KIIs involved nurses, facility in-charge officers, clinical officers and lab technicians. The FGDs at health facilities involved patients who had contracted COVID 19 while FGDs at the Namanga port involved truck drivers who had been tested for COVID-19. Qualitative data audios were transcribed, coded and analyzed using Nvivo software to generate themes for drawing conclusions.

Results: Preparedness level was reported minimal due to the following challenges: insufficient diagnostic capacity (testing method in use was insufficient to meet COVID 19 testing demand), inadequate infrastructure (limited testing centers country-wide and inadequate testing kits) and increased risk to disease among the frontline workers. Some of the lessons learnt included role of age, comorbidities and community knowledge, emergency response and compliance in pandemic management and mitigation.

Conclusion: The study concluded that workforce was inadequate and the conventional testing technology insufficient for adequate and timely response. The new testing technology adopted required training and more experience to use. COVID-19 pandemic had a negative impact on the health workers mental health due to the high workload and risk of waging war on the front-line. We recommend ongoing capacity building of workforce and infrastructures improvement for future outbreak preparedness.

95. Factors Associated with the Weak Research Participation of Medical Students in Burundi

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Background: Since the onset of the COVID-19 pandemic, scientific research has played a crucial role in informing the understanding and management of the disease. Involving medical students in research can contribute to their development and enhance the overall research capacity. This study aimed to explore the factors associated with research participation among medical students in Burundi and assess their current involvement in research projects.

Methods: A cross-sectional study was conducted among medical students from three universities in Burundi: University of Burundi (UB), Hope Africa University (HAU), and University of Ngozi (UNG). A combination of online and face-to-face surveys was used to collect data. The sample size was determined using random sampling, and data were analyzed using SPSS with descriptive statistics and multinomial logistic regression. P-value < 0.05 was considered statistically significant.

Results: A total of 150 respondents participated in the study till June 25, 2023, with a mean age of 25.48 years. Males constituted 68.7% of the participants, and the majority of respondents were from UB (73.3%). Students in the 5th academic year were the most frequent (46.7%). On a Likert scale ranging from 1 to 5, 80.0% of participants rated the importance of research as 5/5. There was no significant relationship between the independent variables (gender, age, school, and academic level) and this dependent variable (p-value = 0.081). However, there was a significant relationship between the independent variables and interest in taking part in research during undergraduate studies (p-value = 0.035). Only 30.7% of respondents had participated in a research project, and this was significantly associated with the independent variables (p-value = 0.004). The participation of medical students in research project was significantly associated with the way they think research is important or not (p-value=0.037) Inadequate knowledge about research processes and a lack of mentors were reported as the main barriers to research participation by 51.3% and 30.7% of respondents, respectively. The most common suggestions to improve students' research participation were the establishment of a research support center for medical students (75.3%) and the organization of an annual research workshop for students (56.7%).

Conclusion: Although medical students in Burundi have a strong interest in research, their current involvement is low. Limited knowledge about research processes and a shortage of mentors are significant barriers to participation. Initiatives such as establishing a research support center and organizing research workshops could help address these challenges and support students who are passionate about research.

96. Assessment of Awareness and Acceptability of Hepatitis B Vaccine among Pre-service Health Professionals in Rwanda: Case of University of Rwanda

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Background: Hepatitis B is a viral infection caused by Hepatitis B virus. Hepatitis B is highly contagious mainly through exposure to blood and other body fluid. According to WHO, 1.5 million new infections and 820,000 deaths occurred from Hepatitis B due to cirrhosis and hepatocellular carcinoma in 2019. In Rwanda, a study conducted in 24 districts has shown a prevalence of chronic Hepatitis B viral infection to be 3.9%. Healthcare workers and pre-service health professionals are exposed two to four times than general population.

Objective: This study aimed to assess awareness and acceptability of Hepatitis B vaccine among pre-service health professionals in University of Rwanda.

Methods: This cross-sectional descriptive quantitative study has assessed the awareness and acceptability of Hepatitis B vaccine among 360 pre-service health professionals in University of Rwanda. Self-administered questionnaire in google forms was used to collect data, and SPSS version 25 was used to analyze data.

Results: In the study, there were 218 (60.6%) male respondents and 142 (39.4%) female respondents. About half of the participants, or 170 (47.2%), scored between 40-60% on the Knowledge assessment, while almost all of them, or 354 (98.3%), were aware of the hepatitis B vaccine. Most of the participants, or 334 (92.8%), were vaccinated, and 231 (69.2%) received the complete three-dose vaccination. The most commonly cited reason for not getting vaccinated was lack of awareness (45%). The factors that influenced vaccination status were free vaccination provided by institutions, awareness of the vaccine, and knowledge of Hepatitis B infection and its vaccine.

Conclusion: Pre-service health professionals in University of Rwanda are occupationally at risk of contracting Hepatitis B infection due to low level of fully vaccinated and limited knowledge and awareness regarding HBV infection and its vaccine. The university and Ministry of health have to increase awareness campaigns on Hepatitis B infection and its vaccine and to ensure that policy that request pre-service health professionals to start clinical placement after completing all doses is implemented in every health facility.

97. Assessment of Knowledge and Attitude Towards Antibiotic Resistance among People Residing in Namuwongo, Makindye East Division Kampala, Uganda, a Qualitative and Descriptive Cross-Sectional study

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Background: There is an increasing global concern of Antibiotic resistance causing a serious threat to public health with estimated 700,000 deaths per year and it's estimated to increase to about 10 million deaths by 2050(WHO). The aim of this study was to assess the knowledge and attitude towards antibiotic resistance among people residing in Namuwongo, Makindye East Division, Kampala Uganda.

Methodology: A qualitative and descriptive cross-sectional study among 178 randomly selected participants through a structured questionnaire.

Results: Of the 178 respondents, majority of the respondents were females 125/178 (70.22%). 137 (76.97) of residents agreed that missing an antibiotic dose contributes to antibiotic resistance (mean score of 2.62 ± 0.74). 122 (68.54) respondents agreed that consumption of antibiotics without physicians' prescription can contribute to antibiotic resistance, (mean score of 2.45 ± 0.85). Majority of respondents agreed to antibiotic resistance is increasing (73.60%, Mean score 2.58 ± 0.75). 135 (75.84) agreed that antibiotic resistance can be accelerated by the overuse of antibiotics. (mean score of 2.61 ± 0.73). But 127 (71.35) also agreed that Antibiotics are effective for the treatment of both bacterial and viral infections (mean score of 2.56 ± 0.75). 93.82% agreed that the government should create more awareness of antibiotic resistance (Mean score 2.91 ± 0.37).

Conclusion: There was poor knowledge about the usage of antibiotics in treatment of viral infections. There is need for raising more awareness and education on antibiotic resistance, particularly on the proper antibiotics usage.

Recommendations: Each pharmacy should at-least have a basic laboratory so that patients get tested before any prescription, this will curb the unnecessary and wrong usage of antibiotics for illnesses not caused by bacteria. Drug shops should strongly be advised only to dispense medicines especially antibiotics provided the buyer has a genuine prescription note from a medical doctor, this practice shall thereby reduce self-medication that leads to irrational use of antibiotics in treatment of viral infection.

98. COVID-19 Vaccine Uptake and Associated Factors in Tanzania

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Background: Limited knowledge on COVID19 and low socioeconomic status have been associated distrustful attitudes towards vaccination against COVID19. Objective: The aim of this study was to explore determinants of COVID19 vaccine uptake among the general population and health workers.

Methods: A total of 1,993 individuals from the general population in seven randomly selected regions of Tanzania were invited to respond to the structured questionnaire.

Results: Uptake of COVID-19 vaccine among the general population was 42.4%. In half of the studied district councils, uptake of COVID19 vaccine was below the average with Mufindi district council having the lowest uptake rate (7.5%). Likelihood of receiving COVID-19 vaccine was low for those who were separated/divorced (ARR: 0.8: 95% CI; 0.7 to 0.9), with primary level of education (ARR: 0.8: 95% CI; 0.7 to 0.9), self-employed (ARR: 0.8: 95% CI; 0.7 to 0.9) and unemployed (ARR: 0.7: 95% CI; 0.6 to 0.8). Having positive attitude (ARR: 1.2: 95% CI; 1.1 to 1.5) and perception (ARR:1.8: 95% CI; 1.5 to 2.2) and being knowledgeable on COVID19 prevention (ARR: 3.0: 95% CI; 2.1to 4.4)) increased the likelihood to take COVID19 vaccine. Prior experience of vaccination against other diseases (ARR:1.2: 95% CI; 1.0 to1.3), having history of chronic diseases (ARR:1.3: 95% CI; 1.2 to 1.4) and family members died of COVID19 (ARR:1.3: 95% CI; 1.1to1.4) were also factors which influenced COVID19 vaccine uptake.

Conclusion: Uptake of COVID19 vaccine among the general population is low and influenced by socio-demographic factors.

99. The Roles of Community Health Workers in Pandemic Preparedness: A COVID-19 Case Study in Areas Surrounding the Bwindi-Mgahinga Conservation Area in Uganda

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Introduction: The COVID-19 pandemic emphasized the indispensable community health workers (CHWs) pandemic preparedness and response roles, especially in ecologically sensitive areas like Uganda's Bwindi-Mgahinga Conservation Area (BMCA), home to endangered mountain gorillas.

Objective: This study examined the contributions and challenges faced by CHWs in enhancing COVID-19 preparedness within BMCA communities, focusing on potential virus transmission to wildlife.

Methods: In this qualitative study, CHWs engagement in pandemic response and preparedness was explored. Dynamic roles in mitigating COVID-19 transmission risks and challenges were analysed, focusing on areas proximate to the BMCA where the human and wildlife populations coexistence heightens disease vigilance, thus impacting wildlife conservation. Data collection utilized purposive sampling to select CHWs from sub-counties adjacent to BMCA who consented to share information and their photos. Focus Group Discussions (FGDs) were conducted: 12 in Kisoro, 8 in Rubanda district, and 15 in Kanungu district. Additionally, semi-structured interviews with CHW coordinators in various sub-counties were conducted, with qualitative data analysed using the QDA Miner Lite (Version 1.4.1).

Results: CHWs' played a crucial role in ensuring uninterrupted Health Care service delivery during the pandemic. They significantly raised community awareness about COVID-19 transmission risks through educational efforts, thereby mitigating the potential for inter and intra-species transmission. CHWs actively participated in contact tracing, and surveillance, and promoted adherence to Infection Prevention and Control guidelines. They facilitated referrals hence fostering collaboration for a coordinated pandemic response network, including vaccine awareness promotion. During FGDs, CHWs reported challenges, such as limited access to protective gear, personal protective equipment (PPE) insufficiency, and evident deficiency in pandemic-specific training that indicated by the knowledge gap about COVID-19. Stigma, resistance from community members, insufficient proper transportation means, and limited incentives were also reported.

Discussion: CHWs services optimization through their strategic utilization and proactive resolution of the challenges they encounter is paramount to fully harness their potential in pandemic preparedness and COVID-19 transmission risks mitigation to both human and wildlife populations.

Conclusion: Collaboration among CHWs, health practitioners, conservationists, and local communities, plus adopting the One Health approach, is pivotal in establishing resilient health systems capable of responding effectively to future pandemics while safeguarding both human and wildlife populations.

Recommendations: We recommend integrating CHWs into health infrastructure, formulating CHW streamlined policies, increasing recruitment, providing transportation, enhancing incentives, offering pandemic-focused capacity-building, conducting ongoing program evaluation, raising community awareness, and equitable resource allocation to enhance CHWs' effectiveness.

100. Screening and Treatment of Sexually Transmitted Illnesses among Females Who Inject Drugs in Githurai 44 Slums, Nairobi, Kenya

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Background: Persons who inject drugs (PWID) and especially the Females drug users face challenges in accessing health care. We looked at the prevalence of Sexually Transmitted Illnesses (STI) among the females who inject drugs in Githurai44 slums and evidence shows that females who abuse drugs are prone to this communicable illness. Their poor health seeking behaviors, unfriendly and judgmental health care personnel, lack of knowledge on STIs pose challenges in their desire to seek for treatment.

Methods: A Sample size of 200 female who inject drugs (FWID) was achieved using the convenience sampling technique. A longitudinal study design was employed which involved asking the 200 FWIDs questions in order to screen them for Sexually Transmitted Illnesses. A screening questionnaire was used as a research instrument to collect data. Data was analyzed using the Statistical Package for Social Sciences Version 20.0 and presented in table and charts.

Results: 30 FWIDs of ages between (15-40) which represents a 15% of the females had STI syndromes and were all put on STI Treatment. At the covid19 peak (2020-2021) the STI screening were interfered with because of the movement restriction and social distance measures put in place by the Government. With the aid of the field workers using the company identification card we were allowed to supply Condoms to our clients in the dens and this helped to curb to the STI transmissions. The FWIDs who sell sex for their living were also in their business during this period since the condom supply was uninterrupted.

Conclusion: Good adherence to STI medication and emphasis on the 4Cs (Counselling, Compliance, Condom use and Contact Treatment) of good STI management shows over 95% curative rates of the STI syndromes in FWIDs. The use of Information Education and Communication materials (IECs) and Health Education has played a key role in optimizing treatment outcomes among the FWIDs.

101. HIV/AIDS Deaths Surveillance Analysis among HIV Infected People under ART in Gisenyi District Hospital, Rwanda, January 2013 to December 2022

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Background: Despite advancements made in HIV care and treatment, the high trend of deaths among individuals receiving ART remains a challenge worldwide particularly in sub-Saharan Africa; while the antiretroviral therapy (ART) should be crucial in extending life expectancy and improving health for people living with HIV. Since 2003 Rwanda roll-out of antiretroviral treatment (ART). Gisenyi Hospital has been among the first rural public hospitals that started with HIV care and treatment services. However, limited information existed about HIV related deaths and its possible contributing factors thus this study was conducted to assess the HIV related deaths and its possible causes.

Methods: A 10 year retrospective HIV clinical data review was conducted in Gisenyi district hospital, a rural hospital located in western province of Rwanda. Routine data were extracted into health information management (HMIS/HIV) system from January 2013 up December 2022 for patients under ART actively followed in Gisenyi DH catchment area and who died. All deaths among PLWH on ART registered in Gisenyi hospital catchment area during the study period were systematically considered. Death on ART was the outcome of the interest. Independent variables included demographic variables and clinical information (ART initiation time, CD4 count, VL Copies, TB results, CrAg results, weight (kg), height, WHO clinical stages and opportunistic infections. Descriptive analysis was performed using Excel.

Results: A total of 470 HIV deaths were recorded. 84.6% (n=398) were living in Rubavu district. The mean age was 46 years with the median age of 33. Female represents 55% and the single group of participants represent the 76% of deaths. In average, the HIV/AIDS patients spend 7 years on ART and die. Also 22% deaths occurred under 1 year on ART. The increased deaths (43.6%; n=205) is observed during the last 3 years of covid-19 (from 2020 to 2022) mainly in rural area. Clinically, majority HIV/AIDS deaths recorded was due to opportunistic infections (32.8%) and viral pneumonia. Deaths due to depression were observed during the covid-19 (3%).

Conclusion: HIV/AIDS mortality at Gisenyi hospital setting is being increased regardless of ART regimen initiated. Covid-19 effects including lack of proper treatment due to lockdown mainly in rural area and restrictions disrupted HIV testing and diagnosis hindered the access to ART that resulted in non-adherence to treatment and increased HIV related deaths. Besides, the effort is needed for the active surveillance and early detection of opportunistic infections at levels while many of them can be prevented or modified through clinical, psychological and social supports.

102. Multidrug-Resistant Tuberculosis (MDR-TB); An Evolving Threat to the Nigerian Health System

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Background: Multi drug-resistant tuberculosis (MDR-TB) is an increasing public health issue that threatens the efforts in the treatment and control of tuberculosis (TB) worldwide including Nigeria. According to the World Health Organization (WHO), there were 558,000 MDR-TB cases globally in 2019. This study aimed to bridge the gaps in knowledge about the evolving MDR-TB and its threat to the Nigerian health systems and proffer possible solutions in mitigating it.

Methods: Specific keywords (Antitubercular Agents; Multidrug-Resistant; Mycobacterium tuberculosis; Nigeria; Tuberculosis) were subjected to list down and analyzed the literature from PubMed – Medline, official link of WHO and Google Scholar. All types of peer-reviewed records, including original research, systematic reviews, and meta-analysis, were considered. We excluded outdated studies and studies reporting data and scholarly research that is not in line with the objective of the study. The reference lists of the included studies were also hand-searched to identify additional relevant records.

Results: Nigeria, being the most populous African country is said to carry a larger proportion of this MDR-TB in the world. According to estimates, 13% of global TB cases are caused by HIV co-infection, with Nigeria leading the majority of the burden (80%). Treatment success was attributed to factors like; overall treatment duration, the number of effective treatment options used, and the use of second-generation fluoroquinolones such as; Levofloxacin, Lomefloxacin, Moxifloxacin, Gatifloxacin, and Sparfloxacin. Drug resistant organisms are common in low- and middle-income countries like Nigeria due to co-existing HIV infection, overcrowding, inadequate nutrition, low quality health care. Experts in Nigerian TB control strategies highlighted two reasons why multidrug resistance continues to emerge and spread in Nigeria. These reasons include; (1) mismanagement of TB treatment and; (2) person-to-person transmission.

Conclusion: Eliminating the threat of MDR-TB in Nigeria requires a multifaceted approach (public and global health, and one health strategies) which combines all efforts from the human sector, as well as our shared environment. We believed that if all these recommendations are well implemented in Nigeria, Nigeria can record a zero-free MDR-TB burden.

103. Are We Prepared for the Next Pandemic? Experiences of a Tertiary Health Care Facility in Kenya

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Introduction: Effective and efficient hospital leadership is critical for providing policy, accountability, and stewardship for readiness, response, and recovery from public health crises.

Objective and Methods: We assessed the pandemic preparedness and response plan put in place at the Aga Khan University Hospital, Nairobi (AKUH,N) following the COVID-19 pandemic under four main themes: a) leadership, governance, and incident management structures, b) co-ordination and partnerships, c) communication, and d) ethical resolution of clinical dilemmas. Over 200 archived hospital documents dating between January 2020 and May 2021 were retrieved and reviewed. These included e-mails, memos, bulletins, meeting minutes, brochures, flyers, protocols developed, and documents received from the Kenya Ministry of Health.

Results and Discussion: AKUH, N established three emergency governance structures namely, (i) Task Force which was the command-and-control hub, (ii) Operations Team which developed operational guidelines, coordinated communication, and ensured quality, and (iii) Implementation Team which executed risk mitigation activities. Through partnerships with other entities expedited financing towards enhancing essential services and establishing a field hospital. Partnerships with the community enhanced contribution from volunteers during vaccination roll-out. Efficient regular communication via digital, print media, memos, e-mails, and bulletins ensured harmonization of COVID-19 messaging to the hospital staff, patients, visitors, and the public thus countering misinformation and disinformation. A framework for the resolution of clinical ethical dilemmas was established to enable structured, ethical decision making for patient care. This also aided in efficient utilization of scarce hospital resources and aided in building trust and transparency within the hospital leadership, staff, and patients.

Conclusion: This study demonstrated how good hospital leadership should ensure efficient co-ordination, use of resources and continuous communication with health-care providers, patients, and the public during a pandemic. Harmonisation of preparedness plans with all stakeholders and partners enables optimal use of available resources. AKUH,N experiences provide useful lessons on how similar low-and middle-income health facilities could better prepare for future pandemics.

104. Occupational Exposure Sources of COVID-19 Disease among Health Workers. Findings from a Hospital in Kenya

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Background: Covid19 cases among HWs has been associated with a worsening acute shortage of health workers (HWs) and disruption of health service delivery. Therefore, understanding the predominant source of Covid19 exposure among HWs is a public health priority to inform workplace policies to protect HWs.

Objective: This study identified occupational sources of COVID-19 disease exposure among HWs in a tertiary hospital in Kenya.

Methods: A hospital-based, unmatched case-control study design was applied to assess exposure differences between the RT-PCR Confirmed Covid19 infected HWs and RT-PCR-negative HWs between October and December 2021. 147 HWs (including 39 randomly sampled cases and 108 controls conveniently tested) were interviewed by trained assistants using a structured questionnaire on their socio-demographics, occupational, community, and health systems characteristics. A 95% Confidence level was used for statistical significance, multiple imputations were applied for missing data, a multivariable logistic regression model was fitted and the model selection was based on Akaike Information criteria and likelihood ratio test.

Results: Controlling for covariates, occupational risk factors associated with Covid19 disease among HWs included suboptimal adherence to face shield ($p < 0.05$), non-adherence to IPC protocol while using tea-breakout rooms ($p < 0.05$), working in medium risk departments ($p < 0.05$), in the last 2 weeks before PCR Covid19 testing. The model had statistically significant goodness of fit compared to null and the overall effect size was estimated at 0.36 (Hosmer-Lemeshow), 0.37 (McFadden), and 0.51 (Nagelkerke).

Conclusion: Optimal use of face shield is protective against Covid19 disease in addition to other PPE and IPC measures while HWs that were less compliant with IPC measures in shared dining rooms and those handling patients with lower perception of disease risk (undiagnosed and walk-in patients) have an increased risk of Covid19 disease. Our findings support the current recommendations on PPE and IPC adherence by HWs while adding a further understanding of exposure from patients and occupational areas with a perception of a lower risk of disease transmission. Validation of infectious disease exposure assessment tools across different settings is warranted in future studies to improve the generalizability of findings among HWs in different healthcare settings for future pandemic planning and response.

105. Intestinal parasitic infections and risk factors for infection in Kenyan children with and without HIV infection

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Background: Previously we reported that HIV infection is not a risk factor for Entamoeba species infection but for Giardia intestinalis assemblage B in children living in Western Kenya. This study aimed to investigate the prevalence of and the risk factors for Entamoeba spp. and G. intestinalis infection in children living in Nairobi, Kenya.

Methods: This cross-sectional study included 87 children with HIV [HIV(+)] and 85 without HIV [HIV(-)]. Stool and blood samples were collected for the detection of the parasites by PCR and immunological analyses using flow cytometry. Socio-behavioral and hygienic data were collected using questionnaires and analyzed statistically.

Results: Entamoeba spp. infection was significantly lower in the HIV(+) than in the HIV(-) children (63.2% vs. 78.8%, $P = 0.024$), whereas G. Intestinalis infection was not (27.6% vs. 32.9%, $P = 0.445$). "Not boiling drinking water" (adjusted odds ratio [aOR]: 3.8, $P = 0.044$) and "helping in nursery care" (aOR: 2.8, $P = 0.009$) related to G. intestinalis assemblage B infection, and "CD4/CD8 ratio ≥ 1 " to Entamoeba spp. infection (aOR: 3.3, $P = 0.005$). In stratified regression analyses, HIV infection showed negative association with G. intestinalis assemblage B infection in females (aOR: 0.3, $P = 0.022$), but positive association in males (aOR 3.8, $P = 0.04$).

Conclusion: These results suggest that G. intestinalis assemblage B infection relate to hygienic conditions, while Entamoeba spp. infection be an indicator of a better immunological status, and that HIV infection may play a different role in Giardia infection between males and females in Kenyan children. keywords Intestinal parasites, HIV, Risk factors.

106. Coping Strategies Among Persons Following A COVID-19 Infection, Receiving Treatment at Kenyatta National Hospital, Kenya

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Background: Corona Virus disease 2019 (COVID-19) is caused by severe acute respiratory syndrome Coronavirus 2a (SARS-CoV-2a). The disease was declared a pandemic in March 2020 by the World Health Organization. Persons who contracted COVID 19 experienced social stigma. Even after they survived the disease, some were not readily accepted back in the

community. Some experienced feelings of desperation amid uncertainty because of limited information regarding diagnosis, treatments, outcomes and long term effects. This study endeavored to document the coping mechanism employed by patients who contracted the disease and were treated at the Kenyatta National Hospital.

Methods: Exploratory study design was used to bring out the individual experiences and coping strategies with the COVID19 infection. A structured key informant interview questionnaire was used to collect data. Purposive sampling method was used to get eligible participants for the study. Data collected was analyzed using NVivo® software.

Results: There were 794 admitted and treated for COVID-19 at KNH between 1/3/2021 and 31/08/2021. Out of this 617 recovered and got discharged. From the study results a 50% respondent rate was registered, with more female respondents at 53% (n=8). Majority n=9 (60%) of the respondents was aged 40 to 60 years, n=6(40%). 12(80%) of the participants had university education, n=11 (73%) were married and n=14(93%) worked in full time employment. At least 3(20%) of the respondents remained in the hospital for more than 15 days, n=8(53.3%) of the respondents were on supplemental oxygen therapy for between 3 to 11 days. The coping strategies among them included; family support system in n=15(100%), information given by the healthcare providers in n=8(53.3%) and knowledge about COVID19 got largely through internet in n=7(46.6%).

Conclusion: Coping strategies among persons following a COVID-19 infection were multifaceted and individualized. The family support system, information given by the healthcare providers and knowledge about COVID19 played a major role in coping well after diagnosis. Social groups formed during these stressful times were a source of encouragement for many of these individuals.

107. Awareness and Perceptions of and Treatment Practices for scabies infestation among Communities of Kwale County, Kenya

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Introduction: Scabies, an ecto-parasitic disease caused by mites is estimated to globally affect over 300 million people living in the tropics and especially in overcrowded places. The disease is highly prevalent in children, the aged and immuno-compromised individuals. In Kenya, scabies is listed as a common water washed disease with studies showing a prevalence of 8.3%. The World Health Organization has listed it as one of Neglected Tropical Disease (NTDs) targeted for elimination by 2030. Community support and behavioural changes are essential for the success of its control and elimination.

Objective: This study aimed to explore socio-behavioural factors influencing scabies infestation in children under five years of age in Kwale County.

Methods: This was a mixed methods cross-sectional survey conducted in villages that were purposively selected following a review of "Diseases of the skin" pivot report from Kwale County Health Management Team. A total of four (4) Focus group discussions were held with forty-two (42) community members from Mwabandari and Mshiu villages of Pongwe-Kikoneni ward, LungaLunga sub-county in Kwale County. The participants were purposively selected and stratified by age, gender, occupation, and level of education. A focus group discussion guide with identified thematic areas; community knowledge, perceptions and treatment practices were used. The interviews were audio recorded and transcribed. Data was analyzed using NVIVO version 10.

Results: Awareness about scabies; its manifestation and transmission were satisfactory among the participants. Men and children were mentioned as being at the highest risk of infestation. Misconceptions about the cause of scabies and its relation with personal hygiene were common among the participants. Treatment was mainly sought from local health facilities. The participants indicated that having scabies negatively affected social interactions and ability to work for adults and school attendance and concentration in class for children. Those infested with scabies were stigmatized as the community members regarded them as persons living with HIV and AIDS.

Conclusion: There is a need to provide social and behavior change communication through community education on scabies; its manifestation, transmission, and management. Community awareness programs need to emphasize the importance of personal hygiene and need for early treatment when infested.

108. Assessing Trends and Determinants of Revisits among Patients Accessing Public Health Services in Zanzibar

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Background: Universal Health Coverage (UHC) remains a challenge in most countries of Sub-Saharan Africa. In Zanzibar, health care is funded by the government with support from development partners. Inadequate funding allocation and poor

adherence to the referral system burden the overly stretched health system. Testing and diagnostic capacity is reported to be low in Primary Health Care Units (PHCUs). Consequently, patients may seek missed services at other facilities, leading to multiple visits and high costs per patient. This study aims to determine the magnitude of re-visits, time to re-visit and socio-demographic factors associated with re-visits.

Methods: This study included individuals that had at least one health facility visit between January 2021 to June 2022. The magnitude of facility re-visits was assessed, and logistic regressions were performed to examine factors associated with facility re-visits.

Results: Of the 554,264 enrolled clients, 45,380 (8.1%) visited a health facility during the study period, of which more than a quarter (28.6%) had multiple visits. The majority (87%) re-visited the same facility, while the rest visited multiple different facilities. Children under-five, females and individuals with a higher socio-economic status were more likely to have multiple visits. The median time in days to re-visit same and different facilities was 65 and 55 respectively. Elderly and non-residents re-visited a health facility within a shorter time. Undiagnosed conditions were common at lower levels of PHCUs while NCDs were commonly diagnosed at a higher-level facility (PHCU+).

Conclusion: The findings suggest a need to build the capacity of facilities to enhance diagnostic capabilities, such as glucometer and blood pressure machines. This will help in reducing avoidable multiple visits and the number of undiagnosed clients. By doing so, early detection and appropriate management of NCDs can be improved, potentially reducing the burden on higher-level healthcare centers and overall healthcare costs.

109. Prevalence and Antibiotic Susceptibility of Environmental Infections in Rural Settings: Case of Three Rural Hospitals in Rwanda

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Background: Equipment and hospital surfaces constitute a microbial reservoir that can contaminate the hospital environment and thus create an infectious risk associated with hospital-acquired infections for immunocompromised patients.

Methods: A cross sectional surveillance study was carried out from 17th Jan to 15th Feb 2023 at three district hospitals in Butaro, Kirehe, and Rwinkwavu districts in Rwanda. A list of surfaces, health-care delivery materials, and instruments to sample was initially identified based on the high frequency of exposure to several people in the hospital, serving as unwanted fomites. We evaluated the identify of bacterial organisms present in environmental samples and performed antibiotic sensitivity testing (AST) on all positive samples. A total of 225 samples were collected using Amies transport media swabs in which the samples were then analyzed at the microbiology lab located at Butaro District Hospital. Bacterial identification and AST was performed using the automated VITEK-2 system (bioMérieux). Analysis consisted of the proportion of samples with positively identified bacteria among the total number of samples with growth on blood agar, with 95% CI. Resistant bacteria was identified as those resistant to at least one antibiotic (ATB), while multi-drug resistant (MDR) bacteria was defined as resistance to at least three antibiotics.

Results: Of the 225 samples collected, 84% (189/225) exhibited growth on blood agar, including 182 samples of which bacteria were identified, indicating a prevalence of 81% (95% CI: 75-85). AST was performed for 149 of these samples, in which resistance to at least one ATB was shown in 140 samples, or 94% (95% CI: 89-97). Likewise, 90 samples 60% (95% CI: 52-67) exhibited presence of MDR organisms. The most common bacteria isolated were coagulase negative Staph spp (n=46; 25.2%), Acinetobacter spp (n=30, 16.4%), Pseudomonas spp (n=29, 16%), Klebsiella pneumoniae (n=12, 6.5%), Enterobacter spp (n=10, 5.4%) and Staph. aureus (n=10, 5.4%).

Conclusion: The high prevalence of bacterial contaminants in the hospital work environment, 81% as indicated in this study, suggests that methods for decontamination are ineffective or require significant improvement. As such, we recommend strengthening existing infection and prevention control (IPC) measures.

110. Improving Community Engagement through Localized Interpersonal Communication (IPC) Interventions: Lessons Learnt from COVID-19 Vaccination Campaigns for Future Pandemic Vaccination Campaigns

Corresponding author: Catherine Kanyesigye

Affiliation: The Social Behavior Change Activity (SBCA) Project, Uganda

Introduction: With the onset of the COVID-19 pandemic, it has taken MOH, and partners concerted effort to mobilize masses to turn up for vaccination. In order to mobilize masses to take part in the COVID-19 vaccination, the USAID SBCA supported the Ministry of Health to do vaccination mobilization in a campaign named “WE SHOULDN’T GO BACK”. This involved human-centered approaches to suit the communities using localized Interpersonal Communication (IPC).

Purpose: The purpose of this implementation was to “dominate spaces” and “create a siege” to awaken interest and increase COVID-19 risk perception.

Methods: The campaign was countrywide with intensive IPC in 67 selected districts between June 2022-July 2022. SBCA supported MOH to train mobilizers including Village Health Team members (VHTs) both male and female in localized IPC approaches. These included adaptation of messages into folk (music, dance, and drama), home visits by key audience influencers, mobilization by leaders using natural platforms like places of worship, flash mobs in busy areas like markets, taxi, and bus parks. It also involved mobilization on 82 radio and 11 TV stations across the country. Continuous support was provided through mass and social media till August 2022.

Results: We got to the grass root of communities and supported the shifting of vaccination coverage from about 45% to 57% fully vaccinated people. In the period between June and September 2022, 1st dose uptake moved from 74% to 81%, full immunization moved from 51% to 58%, and the number of people receiving booster doses quadrupled.

Conclusion: The IPC activities provided a supportive environment for the uptake of COVID-19 vaccines. They enabled the community members to have a wide understanding of the importance of vaccines and have their concerns about COVID-19 vaccines responded to.

Impact of findings to health-promotion: A key lesson learned from the campaign is that the successful rollout of SBC interventions requires a mix of the “above the site” role and direct implementation to reach the desired intensity and saturation as evidenced by USAID SBCA support to the COVID-19 vaccine rollout.

111. Prevalence of Iron Deficiency and Associated Factors among Blood Donors at National Centre for Blood Transfusion in Kigali, Rwanda

Corresponding author: Peter K. Kayonde

Co-authors: Rwanda Biomedical Centre

Background: Blood donors have a risk of becoming iron deficient especially those who donate regularly, are females and adolescent donors. It is necessary for blood transfusion centers to monitor the level of iron reserves of their donors so as to prevent deferrals. Objective: To determine the prevalence of iron deficiency and associated factors among blood donors at National Centre for Blood Transfusion in Kigali, Rwanda.

Methods: We recruited 293 voluntary non remunerated blood donors in May 2021. Inclusion criteria: Men and women aged between 18 and 60 years, first time and repeat donors who were screened and qualified to donate blood and consented to do so were recruited. Exclusion criteria: Failure to consent to participate in the study. Permission was sought from Rwanda Biomedical Centre Research and Ethics committee. Iron deficiency was determined by assessing the plasma ferritin levels using Cobas e 411 analyzer and complete blood count was done using Sysmex XP 300 hematology analyzer. Ferritin level < 30 µg/L was considered as iron deficient for both men and women. The proportion of blood donors with iron deficiency was calculated as a fraction of all blood donors with iron deficiency out of all blood donors enrolled in the study and expressed as a percentage with its corresponding 95% confidence interval (CI). Using a chi square test, the proportion of blood donors with iron deficiency was compared with different participants characteristics. A significance level of 5% was used. Multiple logistic regression analysis was done to identify the factors associated with Iron deficiency.

Results: Of the 293 study participants, 193 (65.9%) were men, the age range was 18 - 61 years. Twenty-seven donors (9.2%) had iron deficiency. Female sex and a donation frequency, Mean Corpuscular Volume and Mean Corpuscular Haemoglobin Concentration were significantly associated with iron deficiency aOR=3.91(95% CI 1.01 -13.83), aOR=2.23(95% CI 1.13 - 4.39), aOR=0.98(95% CI 0.097 -0.99) and aOR=0.86(95% CI 0.75 -0.98) respectively.

Conclusion: Donation frequency, sex, Mean Corpuscular Volume and Mean Corpuscular Haemoglobin Concentration have a significant association with iron deficiency. Therefore, there is need to regularly check for ferritin levels among blood donors to prevent adverse outcomes encountered as a result of iron deficiency, triggered by blood donation.

112. Prevalence of Iron Deficiency and Associated Factors among Blood Donors at National Centre for Blood Transfusion in Kigali, Rwanda

Corresponding author: Peter K. Kayonde

Affiliation: Rwanda Biomedical Centre, Rwanda

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113. Media Training as a Tool for Improved Health Reporting: A Case of Uganda Cancer Society's Project in Western Uganda

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Co-authors: Julian Nakiranda, Nandutu Brenda, Gloria Kitur, Hattie Maina, Chite Asirwa

Affiliation: International Cancer Institute, Uganda

Background: The media plays an integral role in cancer control in Uganda. This spans from reporting to newsroom advocacy. However, media is often neglected in matters of capacity building, despite playing a central role of conveying and disseminating information, educating, and amplifying advocacy for effective interventions. The Uganda Cancer Society with funding from the International Cancer Institute conducted a training targeting journalists from selected media houses in Western Uganda.

Methods: The training was conducted on 20th June 2023 which attracted 34 journalists from Mbarara, Sheema and Bushenyi districts. It aimed at disseminating basic cancer awareness information and highlighting the role of media practitioners in reporting health issues. Various approaches were used including interactive presentations, role play, and demonstrations etc. Furthermore, ethical considerations in reporting were discussed.

Results: Participants were divided into groups and tasked to develop campaigns that suit the local context. From the assessments done by the trainers, it was clear that the training bred more empowered media advocates with enhanced knowledge, skills, and confidence in cancer control advocacy capable of effectively reporting about cancer as indicated in the assessment tools used. There were more than 4 news articles written by selected participants. There was news coverage on Ankole Times, Radio West, as well as Crooze FM.

Conclusion: Training of journalists is key in the fight against NCDs as it provides a platform for raising awareness, shaping public opinion through the aired stories on radio and TV, and dispelling myths. It is recommended that there should be increased collaboration between the media and cancer healthcare community to provide credibility, and accountability for health information dissemination.

114. Factors Associated with Viral Load non-Suppression among Adolescents and Young People Living with HIV on Antiretroviral therapy (ART) in Nyamagabe District from January to December 2021, "Case control study"

Corresponding author: Gaspard Bizimungu

Co-authors: Rugigana Etienne, Remera Eric3, Umutoni Angela, Ntaganira Joseph

Affiliation: University of Rwanda

Background: Effective ART leads to viral load suppression, which restores immune function, reduce HIV related morbidity, prolongs survival and improves quality of life of Person Living with HIV. A conducted study indicated a higher rate of non-Viral load suppression in adolescents compared to young adults. The study aimed to determine factors associated with HIV Viral load non-suppression among adolescents and young people on ART In Nyamagabe District.

Methods: An unmatched case-control study design was conducted among a sample of 162 adolescents and young people on ART (54 non-viral load suppression (cases) and 108 viral load suppressed (Controls) who were followed in care and treatment service from January to December 2021, controls were selected randomly at a ratio of one to two. Sociodemographic, Clinical and behavioral-related factors were collected and the outcome of interest was viral load non-suppression. multiple logistic regression models were used to check the association between studied factors and viral load non-suppression.

Results: The adolescents and young people living with HIV with no occupation were 9 times more likely to not be suppressed than farmers (AOR:9.03; CI:1.31-62.07). The adolescents and young people living with HIV on ART who had Side effects of ART were 7 times more likely to not be suppressed their viral load than those without ART side effects (AOR:6.93; CI:2.47-19.43). The adolescents and young people living with HIV on ART with poor adherence were 27 times more likely to not be suppressed their viral load than those who had good adherence (AOR:26.49; CI:5.22-134.53).

Conclusion: No occupation, Having Side effects of ART and poor adherence were the most important factors associated with viral load non-suppression among adolescents and young people living with HIV/AIDs, more efforts should be focused on strengthening intensive adherence counseling and home visit to those who are not suppressing.

115. Assessing Readiness and Response to Future Pandemics in Hospitals in West Nile Region, Uganda: Insights from the COVID-19 Crisis

Corresponding author: Henry Drasiku

Co-authors: Milton Anguyo, Yasin Atama

Affiliation: Kampala International University, Uganda

Introduction: This research evaluates hospital readiness and response capabilities in the resource-constrained West Nile region of Uganda, drawing insights from the COVID-19 crisis. By examining challenges and strategies employed during the pandemic, the study identifies areas for improvement and offers recommendations for future pandemic preparedness in the region.

Methods: A mixed-methods approach was used, including qualitative interviews with healthcare professionals, hospital administrators, and policymakers to understand challenges and strategies. Quantitative data on hospital infrastructure, personal protective equipment (PPE), testing capacity, and patient outcomes were collected and analyzed from surveys and secondary sources.

Findings: Hospitals in the West Nile region faced challenges in infrastructure, limited PPE availability, insufficient testing capacity, and a shortage of healthcare workers. Strategies implemented varied across hospitals, including triage systems, infection prevention measures, and staff training. However, the effectiveness of these strategies differed.

Conclusion: The COVID-19 pandemic exposed gaps in hospital readiness and response in the West Nile region of Uganda. Strengthening infrastructure, ensuring sufficient PPE and testing capacity, and investing in healthcare staff training are necessary. Improved coordination and collaboration between hospitals, government agencies, and international partners are crucial for future pandemic preparedness.

Recommendations: Hospitals in the West Nile region should prioritize infrastructure development, enhance PPE availability and testing capacity, and invest in healthcare staff training. Collaborative efforts are needed to establish a regional pandemic response plan, strengthen coordination mechanisms, and secure funding for sustainable preparedness and response strategies.

116. Utilization and Quality of Maternal Health Services at South Sudan Juba Teaching Hospital: A Cross-Sectional Study

Corresponding author: Ezbon WApary

Co-author: Dinah Amongin

Affiliation: Clarke International University, Kampala, Uganda

Introduction: Client satisfaction is an important outcome of healthcare; is an indicator for quality of care; improves utilization and reduces menace of maternal deaths globally. Much as research has focused on investigating satisfaction with maternal health services (MHS) in Sub-Saharan Africa, there is no or little in South Sudan as well as on the utilization. Thus, the study aimed to assess utilization and quality of MHS at Juba Teaching Hospital, South Sudan.

Methodology: This study involved a cross-sectional design among 207 women of reproductive age at a time of taking their infants for routine immunization services in June to July 2015. A structured questionnaire was used to gather data which were analyzed using SPSS Statistics v20. The frequency tables were used to describe data and chi-square test and logistic regression to determine whether statistical association exist.

Results: Of 207 women, 188 (91%) utilized MHS, 193 (93%) were satisfied with MHS, and 20% did not give birth at health facility. There was a significant association of family monthly income with ANC and delivery care satisfaction [OR at 95%CI = 8.30 (2.04 – 33.79), p-value = 0.003 and OR at 95%CI = 0.12 (0.03 – 0.56), p-value = 0.007 respectively]. Furthermore, there was a significant association of education attainment with place of delivery [OR at 95%CI = 3.06 (1.40 – 6.71), p-value = 0.005]

Conclusion: Maternal healthcare services were highly utilized, and women were satisfied. Level of education and monthly family earnings were associated with MHS. Nearly quarter of the women took risk of delivery at non-health facilities. Thus, institute health promotion program to enable them to control over this risk.

117. Delay in Leprosy Diagnosis in Kilifi and Kwale Counties in Kenya

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Affiliation: Kenya Medical Research Institute, Kenya

Introduction: Leprosy, a chronic infectious disease caused by the bacterium *Mycobacterium leprae*, continues to be a significant public health concern in several regions of the world. Early diagnosis and prompt initiation of treatment are crucial to prevent disabilities and reduce transmission. However, delay in diagnosing leprosy remains a major challenge, contributing to the persistence of the disease burden. This study aimed to determine the factors contributing to delayed leprosy diagnosis in Kwale and Kilifi counties in Kenya.

Methods: This was a cross-sectional study carried out between July 2019 and March 2020. Leprosy patients diagnosed between January 2014 to December 2019 were identified retrospectively from health facility leprosy treatment registers. Data abstracted from these registers included demographics, type of leprosy clinical diagnosis, health seeking behavior, time to diagnosis and the time treatment was initiated. A questionnaire was also administered to the leprosy index cases.

Results: A total of 81 index patients out of the 118 traced were enrolled in the study. There were more females at 49 (60%) than males. Among the patients, 72 (88.9%) had multibacillary type of leprosy at time of diagnosis. The median age at the time of diagnosis was 53 years (IQR 38-68). The delay in diagnosis was measured in months and represented the time elapsed between the onset of leprosy symptoms and the actual diagnosis. The median delay of diagnosis in months was 24 (IQR 10-100). While the majority of patients (79%) were initiated on treatment promptly after diagnosis (0-2 weeks), there were significant delays in diagnosing leprosy for a substantial number of individuals (21%), with some experiencing delays of more than a decade. The results also suggest that a significant portion of individuals with leprosy 44 (54%) initially sought care from informal sources and 26 (31%) sought care from sources other than hospitals and health centers.

Conclusion: Findings from this study showed that delay in leprosy diagnosis still persists in Kenya and should therefore be a priority of the leprosy program. Addressing this requires a multi-faceted approach, involving coordinated efforts from governments, healthcare organizations, and communities. Interventions should focus on determinants of delayed case detection such as misdiagnosis, health-service-seeking behavior, and should consider relevant individual, socioeconomic, and community factors, including stigmatization.

118. Juxtaposition of Antimicrobial Resistance Rate Variations across Distinct Antibiotic Classes throughout Prominent Tertiary Hospitals in Rwanda: A Need for Updated Treatment Guidelines

Corresponding author: Iradukunda Jean de Dieu

Co-authors: Hinda Ruton, Umutesi Rusa Divine, Pascal Birindabagabo, Uwase Melissa, Briand Mvuyekure, Cedric

Affiliation: Africa Quantitative Sciences, Rwanda.

Background: Without expedited actions, we are phasing in a post-antibiotic era. A mounting list of infections – such as pneumonia, tuberculosis, blood poisoning, gonorrhea, and foodborne diseases – are becoming harder, and sometimes impossible, to treat although it would seem that, in this century, we would have better control over the organisms. Microbes are dangerously becoming antimicrobial-resistant. Regrettably, improper stewardship and limited data for informed treatment guidelines are pushing us towards an irreversibly daunting eon.

Method: This comprehensive study explores the variation in antibiotic resistance across distinct antibiotic classes in the context of prominent tertiary hospitals in Rwanda. The study encompassed four hospitals: Kigali University Teaching Hospital, Butare University Teaching Hospital, Rwanda Military Hospital, and King Faisal Hospital, collectively analyzing a vast dataset comprising 9,760 samples of urine. Antibiotics were classified, based on the mechanism of antimicrobial activity, into these main groups: agents that inhibit cell wall synthesis (β -lactams), depolarize the cell membrane (Polymyxins), inhibit protein synthesis (Macrolides), inhibit nucleic acid synthesis (quinolones), and inhibit metabolic pathways in bacteria (sulfonamides, aminoglycosides).

Results: The results of this study exhibit noteworthy variations in antibiotic resistance rates across the different antibiotic classes with significant implications for clinical practice and antibiotic selection. Fluoroquinolones as well as Quinolones showed a mean resistance rate of 41.5% and 42% respectively, indicating a moderate level of resistance. Tetracyclines exhibited a mean resistance rate of 49%, suggesting a notable challenge in combating resistance within this class. Aminoglycosides demonstrated a mean resistance rate of 36.2%, signaling relatively favorable susceptibility. β -lactams, a commonly used class, had a mean resistance rate of 50.4%, emphasizing the need for careful selection and stewardship. Other antibiotics, collectively all remaining drugs, presented a mean resistance rate of 36.3%, suggesting a manageable level of resistance within this group. The data showcases distinct patterns of susceptibility and resistance, offering insights into the performance of specific antibiotics in combating pathogens commonly encountered in the Rwandan hospital setting.

Conclusion: The data showcases distinct patterns of susceptibility and resistance, offering insights into the performance of specific antibiotics in combating pathogens commonly encountered in the Rwandan hospital setting. The data underscores the importance of informed antibiotic prescribing practices, and ongoing surveillance to combat the emergence and spread of antibiotic-resistant pathogens. As Rwanda continues its efforts to optimize healthcare practices and address antimicrobial resistance, these findings serve as a valuable resource and urge for using this ever-growing trend in developing AI and machine learning predicting models to guide treatment strategies so as to ensure effective antibiotic use in the future, thus safeguarding public health and future patient care.

119. Risk Factors Associated with Anemia among School Age Pupils Aged 5-19 Years in Tanzania; A Case Study of Pwani, Geita and Arusha Regions

Corresponding author: Oliva Joseph Kimaro

Background: Anemia is a condition in which the number of red blood cells or the hemoglobin concentration in the blood is lower than normal and has been considered to be a health concern in developing countries like Tanzania. Primary school pupils are the most endangered groups of anemia. This study aimed to determine risk factors associated with anemia among public school-age pupils aged 5 – 19 years in Tanzania.

Methods: The study was cross-sectional that involved 2,292 pupils from the selected regions. It used secondary data from a school malaria and nutrition survey conducted between August and October 2019 among public primary school pupils (5 to 19 years) in Tanzania. Binary and Multinomial logistic regression models were used to assess the possible association of independent and outcome variables.

Results: Anemia was higher (33%) among school-age pupils aged 15 – 19 years (COR=1.35, 95% CL: 1.11, 2.12). compared to the pupils aged 5 – 9 years. Most school-age pupils who were anemic (COR=1.67, 95%CL: 1.23, 2.27) had malaria infection. Mild anemia was less common among pupils living in urban areas (COR= 0.57, 95% CL: 0.41, 0.80) compared to rural areas. Malaria positive, rural residents and elderly children (15 to 19 years) were among the major risk factors associated with anemia among public school-age pupils in the study area.

Conclusions: Malaria-positive, rural residents and elderly age group of pupils (5 to 19 years) were among the major factors associated with anemia among pupils in the study area. The National Nutrition Strategy (NNS) which addresses information on anemia status among under five years and pregnant women aged 15-49 years in Tanzania should also involve school-age pupils by addressing the contributing factors in order to bring awareness for the whole population to build a healthy nation.

120. Utilization of Sexual Reproductive Health Services Among Young People Living with HIV in Nairobi, Kenya

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Co-authors: Careena Otieno Odawa, Susan Mambo

Affiliation: Jomo Kenyatta University of Agriculture & Technology- College of Health Sciences (CoHES)-School of public Health

Description: The consequences of poor sexual reproductive health services utilization outcomes are more compounded for young people living with HIV compared to their peers¹. Kenya has little evidence to showcase the utilization of the services among adolescents and young people living with HIV. Nairobi County has one of the highest HIV burdens among adolescents and youth in the country.

Main Objective: To assess the determinants of the utilization of sexual reproductive health services among young people living with HIV aged 15-24 years attending HIV clinics.

Methods: A health facility-based cross-sectional study design was used. Purposive sampling with predetermined criteria was used to select six public health facilities in 6 sub-counties of Nairobi. Data collection was conducted using questionnaires. Sociodemographic, sexual behavioural and facility factors were assessed. The outcome variable utilization was coded as low utilization if one used 0-1 service in the last 6 months and average utilization if one used more than 1 service in the last 6 months. Stepwise binary logistic regression was used to measure the associations.

Results: 253 participants were interviewed during June 2023. Out of the participants, 68.7% were female. The mean age was 20 years. 53% (134) of the participants had low utilization and 47% had average-high utilization. Sexual reproductive health counselling services (40.3%) and collection of condoms (43.9%) were the most utilized while gender-based violence counselling (4%) was the least utilized. Female gender (AOR: 3.30 95%CI: 1.67-6.40), increase in age (AOR: 2.30 95%CI: 1.11-4.65), HIV status disclosure to a sexual partner (AOR: 2.00 95%CI: 1.11-3.80) and privacy for sexual reproductive health services at a health facility (AOR: 3.27 95%CI: 1.42-7.60) were factors significantly associated with average utilization.

Conclusion: Although this vulnerable population has frequent contact with healthcare providers, utilization of sexual reproductive services is low. Stakeholders are recommended to put more emphasis on behavioral interventions to promote male involvement and HIV disclosure to sexual partners.

121. Factors Associated with Severe Malaria in Kigeme District Hospital Catchment Area, Nyamagabe District between July 2021 and June 2022. A Case-control Study

Corresponding author: Gaspard Bizimungu

Co-authors: Aline Umubyeyi, Ruton Hinda

Background: Malaria is a disease caused by the parasite “plasmodium”. This disease is a leading cause of death worldwide and remains one of the most important global public health problems, with an estimated 2 billion malaria cases and 11.7 million malaria deaths from 2000 to 2021. Most cases (82%) and deaths (95%) occurred in the African region. Delayed treatment of uncomplicated malaria progresses to severe malaria. In the current study, we are investigating factors associated with severe malaria in the Kigeme District Hospital catchment area from July 2021 to June 2022.

Methods: A case-control study was conducted involving secondary and primary data from July 2021 to June 2022. We included people diagnosed and treated for malaria. A total of 109 severe malaria (cases) were selected from the hospital register using a simple random sampling method and 218 uncomplicated malaria cases (controls) were selected from the health center registers using a systematic random sampling method at a ratio of 1 to 2. Data were analyzed using Stata version 14. Bivariate and multivariate logistic regression models were used to determine the factors associated with severe malaria at 95% significance level.

Results: In total, 327 participants were considered, including 109 cases and 218 controls. a mean age of 24 years. Having comorbidities (AOR: 2.46; 95% CI:1.13-5.37), having a history of malaria (AOR: 3.70; 95% CI:2.00-6.86), administration of medication at home before seeking medical care (AOR: 4.04; 95% CI:1.1-14.81), and delay in seeking healthcare (AOR: 14.74; 95% CI:7.96-27.32) were factors associated with severe malaria among people diagnosed and treated for malaria.

122. Attitude towards Post-Abortion Care Service Provision at Gulu Regional Referral Hospital: A Cross-sectional Study among Medical Students of Gulu University

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Affiliation: Faculty of Medicine Gulu University, Uganda

Background: Unsafe abortion is a significant public health concern in Uganda, contributing to increased maternal mortality and morbidity rates. We aimed to investigate the attitudes of medical students towards post abortion care (PAC) service provision at Gulu Regional Referral Hospital.

Methods: A descriptive, cross-sectional study was conducted in January and April 2023. We enrolled medical students of Gulu University. A self-administered structured Likert Post-abortion attitudinal questionnaire was used. The mean attitudinal scores of subscales were used to define positive and negative attitude. Ordinary least-square regression was used to assess for association between participants' demographic characteristics and attitudes as measured using the five scales.

Results: Of the 152 respondents, 88.8% (n=135) were male with median age 24 (IQR=23-28), majority of the participants were unmarried 64.4% (n=104). The mean attitudinal score for generally in support, generally not in support, conditional in support, personal attitude, and beliefs against and toward abortion provision were 2.69, 2.79, 2.86, 3.27, and 3.12 respectively. Ordinary least-square regression revealed that female sex, Anglican, diploma entry, year 5 (coefficient: 1.13, 0.64, 0.64, 0.90 respectively) are positively associated with attitude while Muslim, somewhat strong and weak affiliation, unmarried, year 4 (coefficient: -0.95, -0.85, -2.54, -0.63, -0.53 respectively) are negatively associated with attitude.

Conclusion: To foster attitudes regarding PAC service provision, additional efforts should be made to enhance training, knowledge and attitude among medical students. Medical training institutions should ensure that students understand the laws and responsibilities that govern their professional actions with respect to abortion care regardless of their personal views, beliefs, and attitudes

123. Assessing the Outcomes of Prevention of Mother-to-child Transmission of HIV among Children Born from HIV Positive Mothers from July 2019 to June 2021 in Kibilizi Hospital, Rwanda

Corresponding author: Alice Musabyeyezu

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Introduction: Prevention of mothers-to-child transmission (PMTCT) toward HIV remains a critical component of global effort to fight against the HIV/AIDS epidemic worldwide. Rwanda's national target is to maintain HIV Infection among Children (PMTCT Program) below 5% by providing prophylactic treatment at birth. Kibilizi Hospital has been implementing PMTCT interventions since 2010. However limited information exists about PMTCT outcomes. This study aimed to assess the outcome of PMTCT interventions provided in Kibilizi Hospital catchment area.

Methods: A cross-sectional retrospective dataset analysis was conducted using routine data extracted from the health information management (HMIS/HIV) system. Clinical document reviews for all children born from HIV-positive mothers were

conducted. The results of children born from Jul/2019-Jun/2021 reviewed at 6 weeks, 9 months, 18 months, finally at 24 months were reviewed to confirm whether the children are HIV negative or positive through Polymerase Chain Reaction (PCR) test and Microsoft Excel was used for analysis.

Results: A number of 149 HIV-exposed children were recorded. 100% received prophylactic treatment at birth, while at six months, Cotrimoxazole prophylaxis was provided for 97% of exposed children and 97% tested HIV with a 1% (2/149) positivity rate. At nine months 93% were tested, with a positivity rate of 7.3% (10/137). At eighteen months, 89% of children were tested, and none tested HIV positive. Finally, 97% (117/120) of children were tested at 24 months, and none tested HIV positive. At 24 months 9% (12/130) of infants infected HIV positive before reaching 2 years among of them 42% (5/12) are from Kibilizi Sector and 25% (3/12) are from Kansi Sector while 11% of all children dropped out from the program.

Conclusion: HIV infection among children enrolled in PMTC at Kibilizi Hospital was high compared to the national target which highlights the need of improvement of PMTCT follow up and home visit of clients to control measure were recommended to reduce infection to the possible lowest level and prevent dropout.

124. Measles Immunization Status among Measles Suspected Cases Notified Between 2017 and 2022 in Kibilizi Hospital Catchment Area, Rwanda

Corresponding author: Alice Musabyeyezu

Affiliation: Kibilizi Hospital, Gisagara, Rwanda

Background: Measles and rubella are one of the vaccine preventable and infectious diseases that spread easily and still cause preventable mortality and morbidity in developing countries. Rwanda is implementing strategies of measles elimination with immunization coverage of 87% in 2021. Kibilizi Hospital also is in that line of measles elimination with focus on early detection, prompt notification and early response. But there is not enough information on measles immunization status among suspected cases notified in Kibilizi DH catchment area from 2017 to 2022.

Methods: A retrospective cross sectional study design was conducted using individual data extracted from e-IDSR from all eleven health facilities of Kibilizi DH catchment area from 2017 to 2022. Descriptive epidemiology was performed using Microsoft Excel and results presented in frequencies and proportion.

Results: the majority were female counting 65.8% (27/43) mean age of the participants was 4 years ranged from 0 to 13 years old. Furthermore, 79% (34/43) were under 5 years children. the majority of suspected cases were originated from Kibilizi, Nyanza and Kansi Sectors counting 39% (14/43), 20.9% (9/43) and 13.9% (6/43) respectively. The majority of suspected cases constituted 60% (26/43) were reported in 2021 and 2022. Among the suspected case, 9.3% (4/43) were not vaccinated both two doses of measles and 16.3% (7/43) had received only one dose of measles. Among unvaccinated children, 75% (3/4) were eligible for vaccination and among these received one dose of measles, 86% (6/7) were eligible for second dose and none collected sample tested positive. However, the mean interval between onset and consultation was 5 days.

Conclusion: The study highlights that there was a gap of children dropped out or missing vaccines of measles which could jeopardize them to contamination and Patients came later for seeking care at Health Facility. We recommended follow up of children for immunization program and awareness on early seeking care.

125. Evaluation of Turnaround Time for Yellow Fever Testing in Uganda from January 2022 to March 2023

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Background: 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.

Conclusion: 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.

126. Assessing Healthcare Workers' Knowledge and their Confidence in Diagnosis and Management of Mpox in Burundi

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Background: Monkeypox recently named Mpox by World Health Organization (WHO) is disease of global public health importance as it not only affects countries in west and central Africa where it primary occurred in 1970, but the rest of the world. Considering the key role of healthcare workers (HCWs) in mitigating outbreaks, this study aimed to assess their level of knowledge and confidence in diagnosis and management of mpox, besides the assessment of their attitude towards emerging virus infections from a conspiracy point of view.

Methods: An online survey designed mainly from WHO course (Mpox: Epidemiology, preparedness and response for African outbreak contexts) was distributed among Burundian HCWs, during June –July 2023. Questionnaire comprised 8 socio-professional related questions, 22 questions about mpox diseases knowledge, 3 questions to assess confidence in mpox diagnosis and management and 15 conspiracy beliefs about emerging virus diseases. Data were analyzed using SPSS software version 25.0. p value < 0.05 was considered statistically significant.

Results: The study sample comprised 471 HCWs who were mainly Medical Doctors and nurses, 64% and 30.2%, respectively. None of 22 questions on mpox knowledge reached 50% correct responses. A very low number of HCWs (17.4%) knew that mpox has vaccine. Confidence in diagnosis based on the available mpox virus diagnostic tests was reported by 22.2% of the respondents, while the confidence levels were lower for the ability to manage (18.1%) and to diagnose (15.9%) mpox cases based on their current level of knowledge and skills. Higher confidence levels for HMPX diagnosis and management were found among medical doctors compared to nurses. A great number of HCWs (84.4%) strongly disagreed with conspiracy beliefs about emerging viral diseases.

Conclusion: This study showed the lowest level of knowledge regarding mpox among HCWs in Burundi and the lack of confidence to diagnose and manage cases among Medical Doctors and nurses. There is an urgent need to organize continuing medical education on mpox epidemiology, preparedness and response including diagnosis and management for Burundi HCWs considering a possible outbreak as it has just occurred in other countries.

127. Antimicrobial Susceptibility Testing of *Klebsiella pneumoniae* and *Salmonella typhi* Associated with Bloodstream Infections Analyzed by the Rwanda National Reference Laboratory

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Background: Bloodstream infections (BSIs) represent a significant global public health challenge contributing to heightened morbidity and mortality rates. Effective management of BSIs relies on a comprehensive monitoring of bacterial pathogens and their susceptibility to antibiotics. This study aimed at evaluating the antimicrobial susceptibility testing of *Klebsiella pneumoniae* and *Salmonella typhi* associated with bloodstream infections analyzed by the Rwanda National Reference Laboratory (NRL).

Methods: A retrospective analysis of blood samples submitted to the NRL from April 2019 to April 2021 was conducted. All blood samples (979) received during the set period were included in the study. Recorded variables encompassing gender, blood culture results, and antimicrobial susceptibility testing (AST) outcomes were considered. Data were collated and analyzed with Microsoft Excel.

Results: Majority of samples were from males (51.5%) while females were 48.5%. Of 979 samples, 410 (41.9%) showed growth by culture. In total, 66 samples (16.1%) showed *Klebsiella pneumoniae* while for *S. typhi*, 65 (15.8%) were isolated. Notable resistance was observed against cotrimoxazole (85.1% vs 84.8%), followed by ampicillin (81.8% vs 76.9%) and gentamicin (76.6% vs 81.8%) for *K. pneumoniae* and *S. typhi*, respectively. Noteworthy, susceptibility was demonstrated towards imipenem (75.6% vs 83.3%) and meropenem (81.6% vs 64.1%) for *K. pneumoniae* and *S. typhi*, respectively.

Conclusion: the study highlights *S. typhi* and *K. pneumoniae* as predominant bacteria identified at the NRL. There was also an increased resistance to commonly used antimicrobials. Treatment of BSI should be guided by microbiological results. Prudent use of meropenem and imipenem is recommended to extend their effectiveness.

128. Exclusive Breastfeeding Interruption in a Comprehensive Support Setting in Western Kenya: Secondary Analysis of Prosynk Study Data

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Background: Exclusive breastfeeding (EBF), a low-cost intervention for improving child health, has not yet been fully adopted by lactating mothers. In a setting with comprehensive support, we evaluated factors associated with interruption of exclusive breastfeeding and growth outcomes. EBF defined as feeding babies with only breast milk, not any other foods or liquids (including infant formula or water), except for medications or vitamin and mineral supplements before the age of 6 months.

Methods: We conducted a secondary analysis of data from infants enrolled in a trial of pro/synbiotics in Homa Bay County, western Kenya (PROSYNK) where mothers received intensive support for breastfeeding and child health practices. We randomly selected a sample of 366 participants from those who had complete follow-up data from 0 to 12 months. Socio-demographic, anthropometric data, reasons and when interruption of exclusive breastfeeding occurred were abstracted from participant's files. We used Chi-square and Fisher's exact tests to compare categorical variables. Bivariate and multivariate analysis were used to investigate further associations.

Results: A total of 534 (89%) of the 600 participants recruited in the PROSYNK trial had complete follow up data to 12 months. Of the 366 randomly selected infants, 201 (54.9%) were exclusively breastfed. Perception that breast milk was not enough was the major reason for interruption (50.3%, 83/165). We observed a significant association between being in a union and longer duration of uninterrupted breastfeeding (Odds Ratio- 4.7; 95% CI [1.1-14]). Wasting was significant with EBF interruption at 6 months ($p < 0.001$).

Conclusion: The proportion of infants exclusively breast fed to age 6 months was low despite comprehensive support. Educational support to expectant and lactating mothers should counter the perception that breast milk is insufficient to meet the child's nutritional requirements to encourage longer duration of exclusive breastfeeding to improve health outcomes.

129. Monitoring of Insecticide Resistance against New Insecticides; Towards Preventing Resistance and Sustaining the Gains in Malaria Control

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Introduction: Mosquito evolution to withstand effects of insecticides needs to be detected early enough before compromising vector control tools and strategies. The spread of pyrethroid resistance in malaria vectors has been reported in all malaria endemic countries, and has reduced the efficacy of key control tools. New insecticides with different modes of action are being developed, including chlorfenapyr and clothianidin. This study investigated the phenotypic resistance responses in the *Anopheles gambiae* Muleba-Kis strain after several exposure of larvae and adults to chlorfenapyr, clothianidin and alpha cypermethrin insecticides under laboratory conditions to investigate signs of resilience to resistance.

Methods: *An. gambiae* Muleba-Kis strain larvae in separate groups were exposed up to 10 generations to chlorfenapyr (0.0015mg/mL), clothianidin (0.015mg/mL) and alpha cypermethrin (0.008mg/mL). Also, in separate groups, adult mosquitoes were exposed up to 10 generations to chlorfenapyr (25 µg/bottle), clothianidin (22.5 µg/bottle) and alpha cypermethrin (12.5 µg/bottle). After 5,7 and 10 generations, the larvae and adult selected groups were tested for resistance using discriminative concentrations of insecticide used for selection.

Results: Our results indicated that both in adult and larvae selected experimental groups against chlorfenapyr, high mortality rates (98-100%) was maintained throughout 10 generations. Selection with clothianidin at larvae and adult stage showed varied mortality between 55% and 91%. Contrarily, mosquitoes selected with alpha cypermethrin from the larvae and adult selection maintained a low mortality below 15% against discrimination concentration.

Conclusion: Exposure of *An. gambiae* Muleba-Kis strain to chlorfenapyr within 10 generations did not induce resistance. However, the fluctuating mortality rates in the clothianidin-selected mosquitoes needs further investigation to determine whether selection could induce significant resistance against this insecticide class. Additionally, further investigations on molecular markers beyond 10 generations is recommended for future resistance monitoring.

130. COVID-19 Vaccine Hesitancy in Pregnant Women in Kilifi, Kenya: A mixed Methods study

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Background: COVID-19 vaccines are safe and effective during pregnancy, and are now widely available, including in many public health facilities in Kenya. However, a significant challenge arises from substantial vaccine hesitancy among pregnant women, which hinders the widespread adoption and effectiveness of these vaccines. Vaccine hesitancy is defined as the uncertainty or refusal of the vaccine despite the availability of vaccine services. This study sought to determine the 'prevalence' and factors associated with COVID 19 vaccine hesitancy among pregnant women in Kilifi, Kenya.

Methods: This was a convergent mixed-methods research study that employed quantitative and qualitative data collection approaches to evaluate the prevalence of vaccine hesitancy using an anonymous quantitative survey and in-depth interviews. The study was conducted in public health facilities in the Kaloleni and Rabai sub-counties of Kilifi County. Pregnant women attending ANC were recruited sequentially over a calendar month. For the qualitative component, IDIs were administered to determine reasons for vaccine hesitancy during pregnancy. Template analysis was used to analyse the interview data, using the Vaccine Hesitancy Determinants Matrix developed by the SAGE working group on vaccine hesitancy.

Results and lessons learnt: Quantitative findings: 2880 pregnant women, 2562 screened, 142 declined, nine withdrew, 21 had missing data, and the final dataset was 2390. Vaccination status (37.2% (95% CI, 35.4 – 39.4). Vaccine hesitancy was 36.2%, 95%CI, 34.2 – 38.2). Participants under 19 years of age had the least vaccine hesitancy at 26.7% (95%CI 20.82 – 33.19). Higher hesitancy in urban and higher-level facilities.

Qualitative findings: Vaccine Hesitancy was influenced by individual concerns regarding vaccine safety, Misconceptions, and Initial exclusion of pregnant women. Huge shift in vaccine acceptance influenced by clear guidelines on vaccination of pregnant women, Integration of COVID-19 vaccination in routine ANC, Community sensitization and Increased availability.

Conclusion: COVID-19 vaccine hesitancy in pregnancy is high and variable across health facilities. Delayed inclusion of pregnant women in COVID-19 vaccination and safety concerns had a negative effect in the vaccination. Future vaccine introductions in future pandemics should include pregnant women in vaccine trials.

131. Determinants of Workplace Resilience among Healthcare Workers at the Epicenter of the Sudan Virus Disease Outbreak Response in Uganda, 2022

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Background: 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 virus disease (SVD) outbreak and this may have affected their resilience. 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: Of 429 eligible HCWs, 400 (93%) were 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. Three hundred and seven (77%) HCWs were not-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 counselling services (AOR=3.3; CI=1.7-6.5).

Conclusion: Most HCWs at the SVD outbreak epicenter in Uganda faced resiliency challenges, related to their infection risk and fears about treatment from others if they became infected. Adopting workplace policies aimed at addressing these concerns in future similar outbreaks may support resilience.

Disclaimer: The conclusions, findings, and opinions expressed by the authors do not necessarily reflect the official position of the U.S. Centers for Disease Control and Prevention or the authors' affiliated institutions.

132. Evaluation of Acute Flaccid Paralysis Surveillance System in Kiziguro Hospital Catchment Area-Rwanda 2017-2022

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Background: Aiming to minimize illness and death, public health surveillance involves detecting cases, utilizing data, and responding effectively. The global goal for Non-Polio Acute Flaccid Paralysis (AFP) is under 1 case per 100,000 people. Following COVID-19 pandemic so many efforts have been put together to fight against outbreaks. We evaluated AFP surveillance system to assess the performance if it still meets its objectives.

Methods: We reviewed AFP surveillance data in electronic database from 2017 to 2022 to assess demographic characteristics and clinical information. Data collection was done from all health facilities by interviewing key informants selected purposively and used a revised CDC guideline to evaluate surveillance core functions and system attributes namely completeness (selected key variables are complete in the electronic system), usefulness, simplicity, timeliness (Suspect case notification within 24hours of identification, sample collection time not exceeding 24hours and sample transportation to testing laboratory within 72 hours), stability and acceptability. Any attributes scored ≥ 90 was (very good), 80-89 (Good), 60-79 (Moderate) and < 60 (Poor). We used Epi Info 7 and excel to summarize and present the results in figures, charts and tables.

Results: We reviewed 24 cases including 19(79%) under 15 years old, 9(37%) female and 15(63%) male 17(71%) were vaccinated to polio. Of the 60 staff interviewed, 33(55%) of them were able to identify cases using case definition, 30(50%) of staff were able to conduct outbreak investigation, 25(42%) conducted surveillance data analysis and 72% were prepared for emergency. The system attribute resulted in the overall completeness of 43% and timeliness was 33%. Usefulness scored 79%, simplicity rated at 75%, average acceptability at 83%, representativeness 90% and stability at 97%.

Conclusion: The evaluation of the AFP surveillance system indicated that overall stability and acceptability were good as they scored above the acceptable score. However, effort is needed in report completeness, timeliness, usefulness and simplicity. Moreover, screening for case identification, outbreak investigation and data use for surveillance purposes need to be emphasized.

133. Evaluation of Electronic Medical Record Effectiveness on Continuity of Patient Care in Health Facilities: Case of Chronic Diseases Treated at Kiziguro District Hospital of Rwanda

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Background: Electronic medical record (EMR) has been installed in Rwandan Hospitals since 2006, and common types of EMRs that are used in Rwanda are Open MRS and Open Clinic. EMRs are believed to help healthcare providers to communicate with each other while practicing their job and ensure the continuity of care by avoiding fragmentation of care. Researches about continuity of care through EMR use were carried out elsewhere, but not in Rwanda.

Aim: the paper aimed to evaluate the effectiveness of EMR system on continuity of patients' care through the implementation of one medical patient's file in healthcare facilities.

Methods: The present study used a cross-sectional study design. Data were collected from available patients with chronic diseases at the time of data collection regarding their experience while visiting the hospital on multiple occasions for healthcare; and from members of staff who were receiving/consulting patients at the time of data collection regarding their experience while using EMR/OpenMRS for patients who visited the hospital on multiple occasions for healthcare. Descriptive statistics and Chi-square tests were used to analyze data.

Results: One hundred nineteen (89%) patients reported a positive experience with the way healthcare providers work together using stored health information in EMR from different departments (p -value=0.03). Regarding continuity of care 115 (86%) of patients reported that their healthcare providers passed on information to each other very well and it was statistically significant in relation to the number of departments that patients had visited (p -value=0.03). Furthermore, regarding EMR implementation, 23 (68%) staff members reported that every patient was given his unique ID number; 17 (50%) of staff reported that sometimes they treated the patient with same ID number (the same as the one s/he used last time) and 25 (74%) staff reported that they checked patients' medical history and used it at each time s/he came to see them.

Conclusion: The results of this study showed that stored information in EMR was used every time patients came to see the healthcare provider. In addition, results showed that the healthcare providers communicated with each other through EMR while practicing their job, therefore ensuring the continuity of care and avoided fragmentation of care. Lastly, the level of EMR was implemented by the health facility and routinely used by majority of staff. This shows that patients' care was improved by the use of electronic medical records system (EMR) and that patients may be satisfied by the way they were care for.

134. Bacteriological Profile and Antibiotic Sensitivity Patterns in Clinical Isolates at University Teaching Hospital of Butare (CHUB), a Tertiary Care Hospital in Southern Rwanda

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Background: A global public health threat circulating in clinical setting is antimicrobial resistance (AMR). The adequate understanding of the circulating bacterial pathogens and knowledge of the required antibiotics is crucial in the effective management of resistance by clinicians to halt the increasing level of its associated challenges. Bacterial infections are considered as the common causes for the pyogenic infections. Various studies have shown that there is an inconsistency in bacteriological profile of the isolates and antibiotic resistance pattern. Antimicrobial resistance (AMR) is now a rising global public health threat. This demands for the periodic monitoring of the bacterial isolates and their antimicrobial sensitivity pattern.

Aim: The study was conducted to determine the bacterial isolates and antibiotic susceptibility profiles of pathogens from selected clinical samples at the University Teaching Hospital of Butare (CHUB), a tertiary care hospital in Southern Rwanda over a three-year period (2020-2023).

Settings and design: The study was a retrospective analysis of microbiological isolates from clinical specimens collected between July 2020 and June 2023, using standard techniques from outpatient clinic attendees. Prevalence rates of bacterial isolates and resistance rates were calculated for each antibiotic used in the microbiological culture. Ethical approval to conduct this study was supported by approval no: REC/UTHB/053/2023.

Results: A total of 5283 clinical samples were obtained and processed; 3104 (58.75%) were males and 2179 (41.24%) were females with adults comprising of 2547 (48.21%); young adult 1725 (32.65%); child 854 (16.16%) and neonates 157 (2.97%). Samples were obtained from urine, blood, pus, sputum and throat swabs. There were increasing prevalence of the isolates from one year to the other with the current year (July 2022-July 2023) with the highest number of 1921 isolates (36.36%). The overall results showed *Escherichia coli* with the highest prevalence of 45.71%; *Klebsiella pneumoniae* at 15.19% and Coagulase negative *Staphylococcus* at 11.39%. Commonly used antibiotics such as amikacin, cefotaxime, peniciline, amoxiciline, cefixime and tetracycline. Others are vancomycin, ciprofloxacin, cefotaxime and cefalotine showed varying degrees of resistance and sensitivity to the isolates.

Conclusion: There were increasing prevalence of the bacterial isolates from one year to the other while; there were gain in sensitive between year one and two and a sudden rise in resistance in year three. Our findings show that the observed trend needs urgent attention and clinical management with appropriate adherence to treatment guidelines.

135. Uptake of Malaria vaccine and risk of infection among children in Western Kenya, February 2023

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Background: Malaria vaccine provides affordable intervention for the global leading killer of children under 5 years old. However, there is limited data on the uptake. This study assessed uptake of malaria vaccine and its association with malaria occurrence to inform various intervention. The objective of the study was: To assess the uptake of malaria vaccine and risk of malaria infection due to non-compliance among children aged 6-36 months in Western Kenya.

Methodology: The study employed a quantitative cross sectional design, caretakers of 319 children 6-36 months in Muhoroni subcounty were eligible for the study, stratified random sampling method was used and data was collected using ODK collect. Descriptive statistics and logistic regression was used, data was analyzed using STATA.

Results: The results show poor uptake Malaria vaccine; 1st dose, 72.10%, 2nd 66.68%, 3rd 59.40% and 4th 31.35% respectively. The results showed 67.57% of study participants were positive of malaria. Children who didn't comply were 6 times more likely to get malaria infection as compared to a child who complied (COR 5.87, 95% CI 2.25-15.31, P value ≤ 0.001). Children who haven't received any dose of malaria vaccine were 3 times more likely to get malaria infection as compared to

children who received any dose of malaria vaccine (COR 2.72, 95% CI 1.26-5.88, P value =0.011). Age was a risk factor, children in the age category of 24-36 months was 7 times more likely to get malaria infection than children in the age group of 0-6 months [COR=7, 95%CI=0.09-2.73, P=0.03].

Conclusion: We concluded that there is low uptake of malaria vaccine, lack of or poor Vaccine uptake increases the risk of infection, age is a risk factor for malaria infection. There's need for; health education on the vaccine, interventions to boost Malaria vaccine uptake.

136. Adherence to Anti-malarial Among Patients Diagnosed with Malaria in East Africa: A Systematic Review and Meta-Analysis

Author's names

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Background: Adherence is one of the factors influencing malaria elimination. High level of adherence rate has influence on drug effectiveness. Understanding the magnitude of adherence to antimalarial would help in planning of interventions for eliminating malaria in East African countries. Globally and nationally, there is an increase in efforts done to eradicate Malaria, including widening antimalarial availability, accessibility and increase in public and private health facilities. Despite of the efforts done, we still fail to accomplish the goal of eradicating malaria. Since adherence is one of factors influencing malaria, it leads to the need of a current antimalarial adherence review, since the antimalarial adherence reviewed was in 2014.

Method: Authors have searched for Studies reported patient's adherence to antimalarial from east African countries. Studies were searched from PubMed, African index, science direct, Hinari, AJOL and Google scholar, while other journals were accessed through them. Two authors have independently assessed retrieved studies for eligibility and risk of bias. The overall antimalarial adherence rate was pooled using random effect model in STATA 17, forest plot is used to present pooled adherence rate. Qualitative analysis has been used to explain factors influencing adherence.

Results: 22 included studies have reported a wide range of adherence rate (65% to 82%). On average, adherence rate in east Africa is 73.88%. Majority of the studies has reported an adherence rate of greater than 50%, and only one study has reported a small rate of adherence (7%). Recalling the correct statements on how to take medication has a positive significant influence on adherence. taking first dose at the health facility has a positive influence in patient's adherence. short/stickers massages lead to an increase in adherence.

Conclusion: The variation in reported adherence rate might be due to difference in patient's characteristics and methodologies used to assess adherence. Due to that, reported rate should be used with the precaution. More studies should be done on adherence and compliance focusing on non self-report method.

Other: Our review protocol has registered in PROSPERO with the registration ID CRD42023410048.

137. Laboratory COVID-19 Testing Positivity Rate in Context to Vaccination Status amongst Patients Attending Nyahera Sub County, Kisumu County, Kenya

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Background: Vaccine effectiveness is a measure of how well vaccination protects people against health outcomes such as infection, symptomatic illness, hospitalization, and death. Vaccine effectiveness is generally measured by comparing the frequency of health outcomes in vaccinated and unvaccinated people. We sought to determine the laboratory positivity rate amongst the vaccinated patients attending Nyahera sub county hospital. Kenya adapted and administered 4 vaccines namely AstraZeneca, Moderna, Johnson and Johnson and Pzer. An individual is expected to be fully vaccinated if he/she receives 2 doses and a booster dose except for Johnson and Johnson which is given as a single dose.

Methods: This was a retrogressive study conducted from June 2021 to October 2022 by abstracting data from Covid 19 laboratory register. The data obtained was analyzed in Microsoft excel and presented in percentages.

Results: Of 435 of patients tested for COVID 19, 58(14.3%) tested positive, 19(32.8%) were male, while female 67.2% (n=39) while children >5 years were 3(8.6%) and were both female, 24(41.3%) were partially vaccinated having got one to 2 doses of the vaccine, of the 58 positives 16(27.6%) had received 2 doses of AstraZeneca, while only one had received Pzer vaccine 1.7%(n=1), of the laboratory tests done 4(6.9%) were confirmed by PCR test while the rest were done by rapid antigen test.

Conclusion: Timely completion of vaccine doses is very key and paramount in offering the required body protection and should be observed alongside other public health interventions like hand hygiene, proper masking and waste management. Vaccination alone does not protect one from contracting the disease.

Recommendations: Further research investigations need to be conducted to explain further any relationship whether one develops immunity after full vaccination.

138. Laboratory and Public Health Collaboration in Prompt Management of COVID- 19 Cases, through Home-based Care at Nyahera Sub County Hospital, Kisumu County, Kenya

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Background: COVID 19 pandemic posed a lot of danger and led to influx of patients in hospitals leading to scarcity in the bed capacity in several facilities. With the second and third wave of COVID which were a little bit mild, homebased care played a major role in patient care since most of the patients who didn't meet the case definition threshold were discharged and monitored through homebased care with the assistance of community health volunteers. The Laboratory department played a very key role by conducting a prompt referral of clients who tested positive for COVID 19 immediately to public health department for line listing of contacts and homebased care assessment for further management.

Methods: This was a retrospective study conducted from July 2021 to September 2022 by abstracting data from covid 19 laboratory register and DHIS platform .The data was obtained and analyzed in Microsoft excel and presented in percentages.

Results: of the 45 people followed up, 27(60%) were female 15(33.3%) were males while 3(6.7%) were children of median age of 9.59%(n=16) of females were fully vaccinated while only 33%(n=15) of males were fully vaccinated by AstraZeneca vaccine and progressed well, 41% (n=11) had received only one dose. None of the children 3(0%) had been vaccinated. Of the 45 positives 7(15.6%) were confirmed by PCR While 38(84.4%) were confirmed using rapid test.

Conclusion: prompt referral of patients to Homebased care led to clients accessing COVID 19 services at home hence an important strategy to achieving pandemic control without

139. Trends in Case Detection Rate for Leprosy and Factors Associated with Disability among Registered Patients in Zanzibar, 2018 to 2021

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Background: Leprosy is still the disease of public health concern. Globally, 2 to 3 million people are thought to be affected by leprosy's disease-related disabilities. Regarding leprosy status in Zanzibar, limited information is available. Determining changes in detection rates and factors associated with disability is crucial for treatment and preventative strategies for this debilitating disease. This study aimed to determine trends in case detection rate for leprosy and risk factors for disability among registered patients in Zanzibar, 2018 to 2021.

Methodology: The study included all leprosy patients who received treatment in Zanzibar's 11 districts between 2018 and 2021. An analytical cross-sectional study design was used. Prevalence and new case detection rate (NCDR) was calculated. Multivariable Poisson regression analyses were used to identify factors associated with leprosy disability. Crude and adjusted prevalence ratios (APR) and their respective 95% confidence intervals (CI) were reported. P-values ≤ 0.05 was considered significant.

Results: Out of the 490 leprosy cases reported between 2018 and 2021, 95.7% were new patients, and 71.2% were multi-bacillary. The disease was found to be more common in male (60.4%). The average prevalence was 7.43/100,000 population while the average NCDR was 7.13/100,000 from 2018 to 2021. There was a significant decrease in disability grades from diagnosis to the end of treatment over a 4-year period ($P < 0.001$). Male sex (APR=1.55; 95% CI: 1.18-2.04), advanced age (APR=5.01; 95% CI: 1.91-13.17), multi-bacillary (APR=6.99; 95% CI: 3.16-15.44) and HIV negative patients (APR=1.51; 95% CI: 1.11-2.06) were more likely to develop physical disability.

Conclusion: This study found that leprosy disability grades at diagnosis compared to the end of treatment declined. There was no significant change in point prevalence and NCDR. Disability was associated with male sex, advanced age, multi-bacillary, and HIV-negative patients. To prevent leprosy-related disability and transmissions, health education, early case detection and adequate multidrug therapy should be prioritized.

140. 'Cross-neutralizing Antibodies against Selected Omicron sub-lineages among Infected and or Vaccinated Individuals in Dar es salaam Tanzania

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Background: Tanzania was unique during the pandemic in that, the population remained widely diverse along the spectrum of exposure to- and coverage against- *SARS-CoV-2*, because we did not implement population lockdowns and the vaccine coverage remained persistently low (5.1%). Hence, we conducted a study to profile cross-neutralizing antibodies against the *XBB 1.5* and *BQ.1.1* omicron sub lineages that were unexperienced by this population and reported alarming levels of resistance to immune response globally, even after 4 doses of vaccination.

Methods: A cross-sectional study was conducted at Muhimbili-National-Hospital and Aga Khan Hospital. Plasma neutralization was determined at 50% inhibition dose (ID₅₀), using pseudo-virus-neutralization assay against BA.1, BQ.1.1 and Xbb1.5. Neutralization titers are reported in median (IQR) and were compared between groups using Wilcoxon rank sum test, p-values <0.05 were considered statistically significant.

Results: The study participants (N=121), were categorized into three groups; the vaccinated-individuals n=73, 60% males, median-age[IQR]=40[30,51], 84% received one-dose of Jansen (Ad26.COVS.2.S); the infected-vaccinated; n=26, 56% males, and median-age[IQR]=50[40,70], 100% received one-dose of Ad26.COVS.2.S; and infected only, n=26, 54% females, median-age[IQR]= 40 [31,54]. Cross-neutralizing antibodies significantly declined with each consecutive variant with reference to the ancestral strain. The *XBB 1.5* variant had the highest immune escape, whereby more than half of the vaccinated participants 64% (47/73), 57% (15/26) of the infected participant, and 31% (7/22) of the infected-vaccinated did not mount antibodies to neutralize the variant. Moreover, Hybrid immunity improved the median cross-neutralizing titers slightly above the assay cut off whereby participants who were BA4/5 infected after Ad26.COVS.2.S pre-vaccination (breakthrough infection) significantly improved the median ID₅₀ for the *XBB 1.5* (p=0.03) compared to those who were infected and then vaccinated. Furthermore, every unit increase in BMI from 30kg/m² and age from 50 years increased cross-neutralization titers by two (p=0.03) and three times (p=0.001) respectively.

Conclusion: Our results indicate severely reduced median (ID₅₀) against BQ.1.1 and Xbb1.5 variants with reference to the ancestral strain, more so among the vaccinated group compared to those infected-vaccinated and infected only group. Hybrid immunity improved the median cross-neutralizing titers slightly above the assay cut off, after BA4/5 breakthrough infection. The impracticability of the variant-chase approach in the African setting highlights the need to develop the next generation vaccines that are durable from conserved epitopes, because none of us is safe until all of us are safe.

141. Health care workers' Self-efficacy to manage COVID-19 patients in Central Uganda

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Background: Fighting Coronavirus disease 2019 (COVID-19) requires health care workers (HCWs) with a high level of self-efficacy (self-confidence) to rapidly identify and treat patients with COVID-19 infection. We aimed to determine the level of HCWs' self-efficacy to manage patients with COVID-19 and associated factors in Central Uganda.

Methods: A two-months multicenter cross-sectional study was conducted among HCWs in Central Uganda. Data was collected using a pre-tested self-administered questionnaire. Data was analyzed using STATA version 16.0. Multivariate linear regression analysis was utilized to determine factors associated with self-efficacy to manage COVID-19 patients.

Results: Of the 418 study participants, 61.7% were female, average age was 36.3 (standard deviation (SD) = 10.0 years), and in 47.1%, highest level of education was a bachelor's degree. HCWs reported moderate overall self-efficacy to manage COVID-19 patients (mean score of 5.4, SD = 2.3) which gradually decreased with increase in disease severity. Having a PhD ($\beta = 2.80$; 95% Confidence Interval (CI): 1.00 - 4.60; p = 0.002), being a doctor ($\beta = 0.88$; 95%CI: 0.31 - 1.45; p = 0.003), having complete knowledge about COVID-19 ($\beta = 1.85$; 95%CI: 1.11 - 2.57; p <0.001), and COVID-19 training ($\beta = 0.80$; 95%CI: 0.42 - 1.19; p <0.001) were significantly associated with self-efficacy to manage patients with COVID-19.

Conclusion: This study highlights the unsatisfactory moderate overall self-efficacy among HCWs in the management of patients with COVID-19 in central Uganda. The health sector should focus on improving HCWs' self-efficacy through continuous training of all HCWs in the clinical management of COVID-19. Lower cadre HCWs should be given priority as they were less-efficacious in management of COVID-19; yet they are the corner stone of the primary health care system and make majority of the health human resource in Low- and Middle-income countries.

142. Knowledge, Attitude and Acceptability of COVID-19 Vaccine among University students in Moshi Municipality

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Background: COVID 19 vaccine is one of the approved keys interventions against coronavirus disease. Until July 2022, about 9,285,517 of Tanzania population have received complete COVID 19 vaccine doses. However, knowledge, attitude and acceptance towards COVID 19 vaccine among university students have not been explored. We aimed to determine the knowledge, attitude and acceptability of the COVID-19 vaccine among university students in Moshi municipal.

Methodology: This descriptive cross-sectional study was conducted from 1st to 31st July 2022 in Moshi Municipality, Kilimanjaro region, Tanzania. The study population consisted of university students from MWECAU, KCMUCo, and MOCU. Data were collected using questionnaire. Ethical approval was obtained from KCMUCo research and ethical committee. Data analysis was performed using SPSS version 20.

Results: This comprehensive study examined COVID-19 vaccine knowledge, attitudes, and acceptance among university students. The findings demonstrated a commendable level of knowledge, with 96.4% of participants exhibiting awareness of COVID-19 vaccines. Among approved vaccines, Johnson & Johnson Janssen (73.6%) was most recognized. While 67.3% understood the vaccines' limitations in providing full protection against COVID-19, 84.9% acknowledged the efficacy of additional preventive measures. Vaccine acceptance was moderate, with 86% of respondents yet to receive the vaccine; however, 75.9% of those vaccinated expressed intent to persuade family and friends to get vaccinated. The study highlights the need for targeted interventions to address misconceptions and promote broader vaccine acceptance among students, contributing to overall pandemic control efforts.

Conclusion: This study reveals encouraging levels of COVID-19 vaccine knowledge among university students, with 96.4% exhibiting awareness of the vaccines. Although vaccine acceptance is moderate (86% unvaccinated), the enthusiasm of vaccinated students (75.9%) to influence peers is promising. Effective communication strategies and peer-led initiatives can optimize vaccine uptake among students, contributing significantly to pandemic control efforts.

143. COVID-19 Outbreak among Refugees at Nyakabande Transit Centre, Kisoro District, Uganda, June–July 2022

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Background: Nyakabande Transit Centre (NTC) is a temporary shelter for refugees arriving in Kisoro District from the Democratic Republic of Congo (DRC). Due to conflict in DRC, approximately 34,000 persons arrived at NTC between March and June 2022. On June 12, 2022, Kisoro District reported that there had been >330 cases of COVID-19 among NTC residents over the last two months. We investigated this outbreak to assess its magnitude, identify risk factors, and recommend control measures.

Methods: We defined a confirmed case as a positive SARS-CoV-2 antigen test in an NTC resident during March 1–June 30, 2022. We generated a line list through medical record reviews and interviews with residents and health workers. We assessed the setting to understand possible infection mechanisms. In a case-control study, we compared exposures between cases (persons staying ≥5 days at NTC between June 26 and July 16, 2022, with a negative COVID-19 test at NTC entry and a positive test at exit) and unmatched controls (persons with a negative COVID-19 test at both entry and exit who stayed ≥5 days at NTC during the same period). We used multivariable logistic regression to identify factors associated with contracting COVID-19.

Results: Among 380 case-persons, 206 (54.2%) were male, mean age was 19.3 years (SD=12.6); none died. The attack rate (AR) at NTC was higher among exiting persons (3.8%) than entering persons (0.6%) ($p<0.0001$). Among 42 cases and 127 controls, close contact with symptomatic persons (aOR=9.6; 95%CI=3.1-30) increased odds of infection; having a face mask (aOR=0.06; 95% CI=0.02-0.17) decreased odds. We observed overcrowding in shelters, poor ventilation, and most NTC residents not wearing face masks.

Conclusion: A COVID-19 outbreak at NTC was facilitated by overcrowding and failure to use facemasks. Enforcing face mask use and expanding shelter space could reduce the risk of future outbreaks. The collaborative efforts resulted in successful health sensitization and expanding the distribution of facemasks and shelter space.

Disclaimer: The conclusions, findings, and opinions expressed by the authors do not necessarily reflect the official position of the U.S. Centers for Disease Control and Prevention or the authors' affiliated institutions.

144. Placental Malaria Infections Dynamic Risk Factors in Antenatal Visitors in Kator Primary Health Center in South Sudan

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Introduction: The measures taken by Malaria Control programs to reduce the Malaria community's transmission yield minimal results in decreasing Placental Malaria Parasitization in the study population within South Sudan. In malarious areas, Placental malaria Parasitization leads to low birth weight, perinatal morbidity, intra-uterine death, and maternal Anemia. This study aims to describe the prevalence of Placental Malaria in the Kator area of South Sudan.

Methods and Materials: An observational follow-up study to assess the Placental Malaria prevalence and risk reduction factors in pregnant women from June 2017 to May 2018 for the first time at Kator Primary Health Center in Juba. All pregnant women attending antenatal care clinics are eligible based on the inclusion and exclusion criteria set protocol. Furthermore, 120 participants signed consent forms and were enrolled in the study only 99 reached the delivery stage; the SPSS version 21.0 statistical software was the primary tool to analyze the raw data. In addition, all variable comparisons used p-values ≤ 0.05 as statistically significant, adjusted odd ratio, and confident interval of 95%.

Results: Peripheral Malaria prevalence at enrolment was 27.2% (27/99) while immediately after delivery it was 30.3% (30/99) using RDT kits. Furthermore, Placental Malaria Parasites species detected (Falciparum, P. Vivax, P. Ovale, and P. malariae) account for 28/99 (23.2%) using Rapid diagnostics Test kits. Multivariate analysis showed younger maternal age and peripheral malaria parasites during antenatal services visits OR 1.3 and 95% CI (1.12-1.19) with P-value 0.005. this study revealed forceful displaced women tend to report more placental malaria parasites with OR 2.2 and 95% CI (2.96-7.9) with P-value 0.0012. this study noted a correlation between birth weight and the type of mosquito bed net used by the pregnant mother during pregnancy with OR 4.12 and 95% CI (3.9-9.8) with P-value 0.002.

Conclusion: This study recommended the proper use of treated bed nets including guidelines for treatment schedules for Mosquito bed nets in rural settings during pregnancy within the study population.

145. Prevalence and Factors Associated with Anaemia in Children Aged 6–24 Months Living a High Malaria Transmission Setting in Burundi

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Background: In very young children, anaemia has been linked to increased morbidity, mortality and poor cognitive development. Although Burundi has a high burden of anaemia, which may be worsened by the high burden of malaria, little is known about the extent of the problem in very young children who are most at risk of severe disease. We estimated the prevalence, and assessed the factors associated with anaemia in children aged 6–24 months using baseline data collected as part of an ongoing study evaluating the effect of Micronutrient supplementation on anaemia and cognition among children in high malaria transmission settings in Burundi.

Methods: Between February and March 2020, surveys were conducted in 498 households within the catchment area of Mukenke Health Center. One child aged 6–24 months was selected per household to participate in the survey. Following written informed consent, we administered a questionnaire to the child's primary caregiver to capture information on child's demographics, nutritional status, food intake, health (status, and morbidity and treatment-seeking practices), as well as the household markers of wealth. A physical exam was conducted, and a blood sample was collected to: 1) assess for presence of plasmodium infection using a rapid diagnosis test; 2) estimate the haemoglobin levels using a portable haemocue machine. A stool sample was also collected to examine for the presence of helminth infections.

Results: The prevalence of anaemia was 74.3% (95% confidence interval [CI] 61.5%-84.0%), with most of the anaemic study participants classified as having moderate anaemia (59.2%). A total of 62 (12.5%) participants had positive malaria rapid diagnosis tests. Factors significantly associated with higher odds of developing anaemia included not receiving deworming medication (adjusted Odd ratio [aOR] = 3.54, 95% CI 1.79–6.99, $p < 0.001$), the child's home location (Mukenke II: aOR = 2.22, 95% CI 1.89–2.62, $p < 0.001$; Mukenke: aOR = 2.76, 95% CI 2.46–3.10, $p < 0.001$ and Budahunga: aOR = 3.12, 95% CI 2.94–3.31, $p < 0.001$) and the child's age group (Children aged 6–11 months: aOR = 2.27, 95% CI 1.32–3.91, $p < 0.001$). Education level was inversely associated with less odds of anaemia: child's primary care giver with a secondary (aOR = 0.67; 95% CI: 0.47–0.95, $p = 0.024$) and tertiary education level (aOR = 0.48; 95% CI: 0.38–0.61, $p < 0.001$).

Conclusion: Anaemia is highly prevalent among young children in high malaria transmission setting. Anaemia is more prevalent among children who not dewormed and those with malaria. To prevent the long-term adverse outcomes of

the anaemia in children, policy makers should focus on improving uptake of the deworming and malaria prevention programs, promote preventive interventions and improve the education of women especially in families with very young children.

146. Quality Healthcare Redefined: NHIF's Influence on Service Standards at Public Hospital in Kenya

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Background: The National Hospital Insurance Fund (NHIF) has been credited with improving access to healthcare in Kenya, particularly for low-income earners.

Objective: To assess the impact of NHIF coverage on the quality-of-service standards at the public hospitals in Kenya; identify specific areas where NHIF coverage has had an impact on service standards; recommend ways in which NHIF can further improve the quality of service standards at the public hospitals.

Methodology: The study used a mixed-method approach, which involved collecting both quantitative and qualitative data. The quantitative data was collected through a survey of patients who are receiving care at the hospitals. The qualitative data was collected through interviews with staff members. The quantitative data was analyzed using descriptive statistics, such as means, standard deviations, and frequencies. The qualitative data was analyzed using thematic analysis, which involved identifying and coding recurring themes in the data.

Results: The study's findings have the potential to inform policy decisions and improve the quality of healthcare in public hospitals in Kenya. NHIF provides financial support to public hospitals through the contributions made by its members. This financial assistance helps public hospitals improve infrastructure, acquire medical equipment, and enhance their overall capacity to deliver quality healthcare services. NHIF may implement quality assurance programs to monitor and assess the performance of public hospitals. These programs include regular inspections, audits, and patient satisfaction surveys

Conclusion: NHIF has the potential to influence service standards at public hospitals in several ways. By providing financial support, establishing accreditation standards, creating provider networks, implementing quality assurance programs, and offering capacity building initiatives, NHIF can contribute to improving the quality of healthcare services at public hospitals.

147. Evaluating the Quality of Health Care Workers' Communication and Relationship-building Skills to Strengthen Maternal Engagement in Health Decisions

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Background: Since the Sustainable Development Goals were launched in 2015, Rwanda has made remarkable strides in reducing maternal mortality by 21% (from 328 to 259 per 100,000 live births) and under-5 child mortality by 16% (from 55.2 to 39.4 per 1000 live births). Success is linked to improved quality of care for pregnant women and young children and an enhanced healthcare experience that boosts utilization. A positive care experience is associated with effective communication, emotional support, and health workers' demonstrated respect toward beneficiaries. This study was conducted to understand the current healthcare experience for families in Rwanda.

Methods: A cross-sectional design was employed, utilizing a structured survey to gather data from 300 pregnant women and mothers of children under five years old. The survey was administered across 14 health centers situated in both rural and urban areas of Rwanda.

Results: Notably, 94.6% of women reported feeling warmly welcomed and comfortable in the presence of healthcare workers (HCWs). While 64.3% of participants expressed willingness to openly communicate their health concerns to HCWs, only 52% of respondents conveyed that HCWs dedicated time to address their anxieties regarding their health conditions and actively engaged in discussions about treatment plans. Additionally, 58.3% of women mentioned that HCWs are not aware of their current lifestyle which includes their psychosocial needs and social determinants of health.

Conclusion: Following semi-structured conversations that reinforce mothers' openness to fully discuss their health beyond their immediate health concerns, would strengthen their care experience. It is imperative to explore these findings from the HCWs' perspective, considering their often-constrained resources and heavy workloads, which can limit opportunities for open communication with patients.

148. The Roles of Community Health Workers in Pandemic Preparedness: A COVID-19 Case Study in Areas Surrounding the Bwindi-Mgahinga Conservation Area in Uganda

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Introduction: The COVID-19 pandemic emphasized the indispensable community health workers (CHWs) pandemic preparedness and response roles, especially in ecologically sensitive areas like Uganda's Bwindi-Mgahinga Conservation Area (BMCA), home to endangered mountain gorillas.

Objective: This study examined the contributions and challenges faced by CHWs in enhancing COVID-19 preparedness within BMCA communities, focusing on potential virus transmission to wildlife.

Methods: In this qualitative study, CHWs engagement in pandemic response and preparedness was explored. Dynamic roles in mitigating COVID-19 transmission risks and challenges were analysed, focusing on areas proximate to the BMCA where the human and wildlife populations coexistence heightens disease vigilance, thus impacting wildlife conservation. Data collection utilized purposive sampling to select CHWs from sub-counties adjacent to BMCA who consented to share information and their photos. Focus Group Discussions (FGDs) were conducted: 12 in Kisoro, 8 in Rubanda district, and 15 in Kanungu district. Additionally, semi-structured interviews with CHW coordinators in various sub-counties were conducted, with qualitative data analysed using the QDA Miner Lite (Version 1.4.1).

Results: CHWs' played a crucial role in ensuring uninterrupted Health Care service delivery during the pandemic. They significantly raised community awareness about COVID-19 transmission risks through educational efforts, thereby mitigating the potential for inter and intra-species transmission. CHWs actively participated in contact tracing, and surveillance, and promoted adherence to Infection Prevention and Control guidelines. They facilitated referrals hence fostering collaboration for a coordinated pandemic response network, including vaccine awareness promotion. During FGDs, CHWs reported challenges, such as limited access to protective gear, personal protective equipment (PPE) insufficiency, and evident deficiency in pandemic-specific training that indicated by the knowledge gap about COVID-19. Stigma, resistance from community members, insufficient proper transportation means, and limited incentives were also reported.

Discussion: CHWs services optimization through their strategic utilization and proactive resolution of the challenges they encounter is paramount to fully harness their potential in pandemic preparedness and COVID-19 transmission risks mitigation to both human and wildlife populations.

Recommendations: We recommend integrating CHWs into health infrastructure, formulating CHW streamlined policies, increasing recruitment, providing transportation, enhancing incentives, offering pandemic-focused capacity-building, conducting ongoing program evaluation, raising community awareness, and equitable resource allocation to enhance CHWs' effectiveness.

Conclusion: Collaboration among CHWs, health practitioners, conservationists, and local communities, plus adopting the One Health approach, is pivotal in establishing resilient health systems capable of responding effectively to future pandemics while safeguarding both human and wildlife populations.

149. Water and Foodborne Bacterial Pathogens Isolated from Hospitalized Children are Extensively Resistant against Commonly Used Penicillin-type Antibiotics in Developing Countries

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Background: Diarrheal diseases pose a significant threat to children under five years, ranking as the second leading cause of death in this age group. This is partly attributed to the rise of multidrug-resistant enteric bacteria that has further exacerbated the current global health crisis.

Objective: This study aimed at identifying common diarrhea-causing bacteria and assessing their antibiotic susceptibility patterns in children under five, seeking medical care at Muhoroni County Hospital, Kisumu County Kenya.

Methods: Between January and June 2016, a total of 196 under-five children seeking medical care were enrolled with parental or guardian consent. Stool samples were collected and subjected to culture and biochemical tests using standard protocols. Susceptibility testing was performed using conventional antibiotics.

Results: Among the participants (196), 125 (63.8%) were from pediatric outpatient departments, while 71 (36.2%) were from pediatric emergency departments with 105 (53.6%) being males and 91 (46.4%) females. Enteric bacterial pathogens were identified in 43 (21.9%) of the samples, with *Escherichia coli* accounting for 25 (12.8%), *Shigella* spp. for 11 (5.6%), and *Salmonella* spp. for 7 (3.6%). All isolated *E. coli*, *Shigella* spp., and *Salmonella* spp. exhibited susceptibility to Ceftriaxone. Notably, 14 (56%) and 13 (52%) of *E. coli* isolates demonstrated resistance to Amoxicillin and Ampicillin, respectively.

Conclusion and Recommendations: The findings provide insights into the distribution of bacteria causing diarrhea in children under five, and associated antibiotic resistance profiles. The investigation highlights an urgent need for effective surveillance on bacterial pathogenicity among children below 5 years, antimicrobial stewardship, and alternative treatment strategies to combat the growing threat of multidrug-resistant enteric bacteria in this vulnerable population.

150. Prevalence and Perceptions of Voluntary Male Medical Circumcision among University Students: A Cross-sectional Assessment at the University of Juba, South Sudan

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Affiliation: University of Juba, South Sudan

Introduction: Voluntary Medical Male Circumcision is one of the key interventions adopted by the international community to fight heterosexual spread of HIV. The technique has been shown to reduce the heterosexual spread of HIV by 60%. Despite being a cultural practice in some parts of South Sudan, male circumcision prevalence is not clearly understood across the country. In addition, it is not currently in the national health policy. This study aimed to assess the prevalence and perceptions of voluntary medical male circumcision among the students of the University of Juba in South Sudan.

Method: This cross-sectional study involved collection of data from respondents randomly selected from six schools. We sought to answer questions on prevalence and factors associated with VMMC. Respondent-administered semi-structured questionnaires were used for data capture. The software SPSS 23 was used for data analysis. Descriptive statistics and cross tabulations were carried out and frequency tables and pie charts were used for data presentation.

Results: 391 students were interviewed for this study. The prevalence of VMMC was 83.6%. Majority of the students have positive attitudes and perceptions towards VMMC. The decision to get circumcised is influenced by age, marital status, religion and state of origin.

Conclusion: Most participants are circumcised and have positive perceptions towards VMMC. Age, marital status, religion and state of origin influence VMMC uptake. The study recommends a countrywide study, scale up of the current VMMC program in addition to tailored health education and awareness to influence behavioural change and thereby create demand for VMMC services among those still opposed to the service.

151. Leveraging Faith Communities for Rapid Messaging and Adoption of Infection Prevention Measures in Emergency Response Situations in Kenya

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Background: On March 11, 2020, the World Health Organization declared Coronavirus Disease (COVID-19) outbreak a global pandemic; with over 6,070 confirmed cases and 143 deaths in Kenya by June 2020. Misinformation and containment measures such as curfews, mandatory quarantine and isolation of confirmed cases and contacts resulted in COVID -19 related fears and stigma. Faith communities have historically been at the center of epidemic responses, providing a trusted information source, role modeling and psychosocial support to Kenyans, who over 88% affiliate with a religious community.

Objective: To review the contribution of faith communities towards rapid messaging and adoption of infection prevention measures in the national COVID-19 response.

Methods: Riding on the Christian Health Association of Kenya Faith Communities Initiative, joint HIV-COVID messaging was conducted in the period June 2020 to June 2021. County level mapping and modular sensitization of Christian and Muslim inter-faith leaders on COVID-19 Messages of Hope; COVID-19 fact sheets, protocols, and national interfaith guidelines for places of worship was done through in-person and virtual trainings. Dissemination of messages to congregants was conducted through in-person gatherings, social media, radio, and television platforms. Twelve-month post training progress review with monitoring of adherence to COVID-19 infection prevention control (IPC) guidelines was conducted, purposively sampling one congregation per county whose leaders were trained. Nairobi had four congregations sampled due to the high burden of COVID-19.

Results: A total of 4,259 religious leaders were mapped and sensitized across all the 47 counties in Kenya, with cascade down of dissemination to 11,718,017 congregants and community members. A total of 3,730 copies of the interfaith guidelines on phased reopening of places of worship and 11,640 HIV/COVID fact sheets were distributed. 50 congregations were sampled, whereby 27 (54%) had constituted formal infection prevention committees, 14 (28%) had developed IPC work plans, 37 (78%) maintained congregant registers, 50 (100%) incorporated HIV/COVID 19 messaging in their sermons and had a focal person for IPC observance. Functional handwashing stations and temperature monitoring were sustained in 50 (100%) of the congregations. Self-perceived efficacy among the faith leaders to address COVID-related myths during social gatherings increased from an average of 5(10%) to 50(100%) post training.

Conclusion: Faith communities form a critical link for rapid and accurate mass messaging, and adoption of preventive measures in emergency response situations.

152. Malaria Prevalence, Transmission Potential and Treatment Efficacy in the Central Kenya Highlands - A Zone Previously Categorized as Malaria free

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Introduction: Emerging infectious diseases are infections that have recently appeared or those whose incidence, range is rapidly or threatens to increase soon. The current study sought to re-evaluate malaria prevalence, susceptibility to ACTs, transmission patterns and the presence of vectors in Kikuyu area of the Kenyan Central highlands, a non-traditional transmission zone.

Methodology: Vector sampling was carried indoors while mosquito larvae were sampled outdoors. Mosquitoes were identified by morphology and subsequently using PCR and parasites presence investigated using ELISA. The clinical study was an open label nonrandomized where AL was evaluated. Microscopy was used at the health facility and nested PCR targeting 18S rRNA gene confirmed positivity in the lab. Isolates were genotyped to determine the MOI and characterize any subsequent infection. Resistance gene markers Pfk13 and Pfmdr1 were analyzed.

Results: A rich repertoire of mosquito vector species was identified from the area, with the Anopheles funestus group comprising 76.35% of all collections. Of the 838 patients screened, 471, with a slide positivity rate of 2.1%. Parasitological analysis of microscopy outcome of the 41 cases revealed 100% ACPR. There was probable delayed parasite clearance (parasites present on Day 3) in 3(7.3%) of the cases. Analysis of the Pfk13 gene in the positive P. falciparum cases from the study sites revealed no SNP associated with artemisinin resistance. The pfmdr1 86Y mutation was found in 0% (0/41) of the isolates.

Conclusion: The positivity rate was very low but with 87% of participants testing positive not reporting recent history of travel and the finding of highly competent vectors suggest a changing malaria transmission scenario requiring further investigations.

153. Hazardous Effects of Malaria for Patients Residing in Low-probability Malaria Areas: A case Report and Critiques of the Literature for Cerebral Malaria

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Affiliation: Independent

Background: Despite decades of global and countries commitments towards eradicating malaria, malaria remains the most hazardous parasitic disease and the most common cause of fever for humans, especially in tropical countries. *Plasmodium falciparum* causes 90% of malaria cases. Coma [cerebral malaria (CM)], acidosis, hypoglycemia, severe anemia, renal dysfunction, and pulmonary edema are the most common complications and the major cause of deaths related to malaria caused by *Plasmodium falciparum*.

Case presentation: A 16-year-old male from low malaria transmission area (Kabale) presented with a one-week history of fever and a two-day history of altered mental status. He lost the ability to walk, and he could not sit unaided. Physical examination revealed a very sick-looking young male in respiratory distress with altered mental status. Temperature: 38.5°C [36.1-37.2], RR: 24 cycles per minute [12-18]. Five episodes of nose bleeding were noticed. The malaria rapid diagnostic test was positive. His hemoglobin level was 6 g/dl [8.0-17.0]. CM was diagnosed. Prior to developing CM, he was treated with Coartem. Further, treatment included oxygen therapy, the transfusion of 4 units of packed red blood cells, tranexamic acid, and intravenous Artesunate. He improved and was discharged after 4 days of hospital stay.

Conclusion: Globally, malaria remains the most commonly occurring infectious disease. Dwellers in areas with higher malaria transmission may acquire immunity that may be important for fighting malaria. However, dwellers in low malaria transmission areas do not acquire such immunity. CM is a medical emergency and one of the forms of severe malaria. CM has high mortality and morbidity. Yet, international health-related agencies, funders, and policymakers are unfamiliar with it. The continuous occurrence of CM validates considerable need for global investment in malaria control and elimination programs. Early administration of Artesunate to all patients suspected of having severe malaria would reduce global malaria-related mortality and morbidity. Simple tests, such as the determination of malaria parasitic density either with thin or thick blood smears, may influence the proper management of all severe malaria cases. However, in clinical practice, the determination of malaria parasitic density is not routinely done. Further commitments are needed to ensure routine determination of malaria parasitic density for all suspected severe malaria cases. Moreover, further commitments are needed to guarantee proper management of CM because it is a major cause of reversible encephalopathy in tropical countries.

154. Place of Death, Certification of Deaths and Associated Factors in Uganda, January 2017 to March 2023**Corresponding author:** Elizabeth B. Katana**Co-author:** Job Morukileng, Ignatius Wadunde, Esther Kisakye, Daniel Kadobera, Benon Kwesiga, Lilian Bulage, Richard Migisha, Petronilla Nakamya, Dominic Kizza, Innocent Ssemanda, Edith Namulondo, Susan Waako, Dorothy Aanyu, Adams Kamukama, Benigna Namara, Mariam Komugisha, John Rek, Yasiini Nuwamanya, Lawrence Tumusiime, Daniel Orit, Brian Kibwika, Vivian Ntono, Carol Nanziri, Emily Cercone, Emily Carter, Alex R. Ario, Julie R. Harris**Affiliation:** Uganda National Institute of Public Health, Uganda**Background:** Complete registration of deaths is crucial for designing public health interventions and policies. Most deaths in Uganda occur outside the health system and are not certified. We assessed factors associated with place and certification of death to inform mortality surveillance efforts.**Methods:** A national mortality survey was conducted in 14/15 sub-regions of Uganda in March 2023 (excluding Karamoja). Household heads were asked about household deaths during January 2017-March 2023, place of death (community vs health facility), and certification. Multivariable logistic regression was used to identify factors associated with place and certification of deaths.**Results:** Among 6,469 households, 616 (0.9%) reported 693 deaths, including 348 (50%) community deaths. While 83 (12%) deaths were reported as certified, death certificates were available for only 6 (0.87%) community and 19 (2.7%) facility-based deaths. Compared with households with no monthly income, odds of dying in a health facility were higher among households with monthly income 200,000-600,000 UGX (OR=2.2, 95%CI=1.3-3.9), or 600,000-1,500,000 UGX (OR=2.5, 95%CI=1.3-4.8). Females had lower odds than males of dying in a health facility (OR=0.82, 95%CI=0.68-0.98). The odds of reporting a death as certified were higher among households with monthly income 200,000-600,000 (OR=4.5, 95%CI=1.5-13.3) than households with no income, and for persons aged ≥ 6 years (OR=37.8, 95%CI=4.9-289.8) vs. ≤ 5 years.**Conclusion:** Half of the deaths in Uganda occur in the community; few are certified. Income, age, and sex are associated with place of death and likelihood of certification. Targeted interventions for low-income households and child deaths could improve death registration in Uganda.**155. Characterisation of Methicillin Resistant *Staphylococcus aureus* Isolated from Urine Samples of Patients Attending Adewole Cottage Hospital Ilorin, Nigeria****Corresponding author:** Bale Muritala Issa**Co-authors:** Israel Adesina Ayodeji, Muritala Wakil Okanlawon, Adegboyega Taofeeq Tope, Adeyemo Rasheed Omotayo, Akinola Adekunle Saheed, Adebayo Abiola Ismail**Affiliation:** College of Medicine and Health Sciences University of Rwanda, Rwanda**Background:** Urinary tract infection is one of the most frequently acquired infections in both community and hospitals and is common among the adolescents and the old genders.**Aim and Objectives:** This study is aimed at determine antibiotics susceptibility profile of *Staphylococcus aureus* bacteria among patients attending Cottage hospital Ajikobi Ilorin.**Methods:** In this study, a total of 1110 mid stream clean catch early morning voided urine samples for two consecutive days were collected from patients attending Adewole Cottage Hospital. They were randomly screened for the presence of *S* bacteria using standard microbiological procedures such as growth on CLED, mannitol salt agar, Gram reaction, catalase and coagulase tests. The Kirby-Bauer disk diffusion method was used to determine the antibiotic sensitivity profile of *S. aureus* isolated using oxoid antibiotic discs.**Results:** Out of 1110 samples screened 447 samples (40.3%) showed significant bacteria, A total 12 percent of the total participants were between the age of 15-20 years, 24.9 percent are between 21-25 years, 31.6 percent are 26-30 years of age, 18.8 percent are 31-35 years of age, and 12.7 percent were 35 years and above. The isolated bacteria include: *Staphylococcus aureus* (10.3%), *E. coli* (15.6%), *Pseudomonas aeruginosa* (5.8%), *Enterococcus* (5.8%), *Klebsiella pneumonia* (6.7%), *Proteus* (4.6%) and CONS (13.6%) of the total isolates. A total of 12 (26%) methicillin resistant *Staphylococcus aureus* were isolated. Antibiotic sensitivity against the isolated *Staphylococcus aureus* shows that 33% resistance to Ciprofloxacin was recorded, cefuroxime has 100% resistance, gentamicin has 15.2% resistance, erythromycin (32.6%), meropenem (41.3%), ofloxacin (100%), amoxicillin/clavulanic acid (32.6%) while 100% susceptibility to nitrofurantoin was recorded.**Conclusion:** The study shows the prevalence of MRSA and high susceptibility of nitrofurantoin and ofloxacin to all the *S. aureus* isolated.

Sub-theme 3: Addressing Social, Economic and Political Impacts Caused by COVID-19 Pandemic

156. Food Systems Profile Study and Their Adaptation to Shocks in the Post-COVID-19 Period for Strengthening Nutrition in Burundi in 2022

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Abstract: Through transformational and exemplary leadership, Burundi is determined to strengthen food systems in order to progress towards a Burundi where each mouth has food in quality and quantity and where each household has sufficient and sustainable means to meet basic needs and family investment.

Objective: The objective was to examine Burundi's food systems in terms of strengths, weaknesses, opportunities and threats in order to develop reformative actions towards healthy, nutritional, affordable, sustainable and resilient food systems, while facing the post-COVID constraints.

Methodology: This evaluative study was conducted in collaboration with food systems stakeholders. Secondary data, interviews with focused groups of producers, agricultural products sellers, government technical services, administrative staff were conducted at central, intermediate, and peripheral levels. Measures taken to mitigate and strengthen shock resilience, how to protect vulnerable people, and how stakeholders are involved in the response, were the criteria used to appreciate food systems' adaptation to COVID-19 pandemic shocks.

Results: The internal strategic diagnosis made it possible to determine the strengths, in particular, the multisectoral governance of food and nutritional security strengthened through the Multisectoral Platform. It also allowed us to highlight weaknesses, in particular, the availability of food products which is highly dependent on the seasons and post-harvest losses. The external strategic diagnosis made it possible to identify opportunities, in particular the African free trade area; good rainfall, and an abundant hydrographic network. As for the threats, our study found in particular the phenomena of climate change; physical, climatic, and biological degradation of ecosystems. This analysis was important to build tangible reforms of Burundi's food systems. To strengthen resilience in the post-COVID-19 period, new approaches have been adopted, including strengthening local production, local production of chemical fertilizers, cooperatives supervision and purchasing of the surplus of the harvest by the Government to return it to the market, if necessary, in order to regulating prices. Stakeholders were involved by strengthening the multi-sectoral and multi-stakeholder platform for better synergy at the national level.

Conclusion: Our study showed that the great challenge is feeding the Burundian population through an increase in factors of production and effective and rational management of resources while facing demographics galloping and phenomena linked to climate change.

157. COVID-19 Pandemic Disruptions on Utilisation of Maternal Healthcare at the Sub-national level: Evidence from Health Management Information Systems (HMIS) in Ethiopia and Kenya

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Background: Lockdowns and fear of COVID-19 may have reduced access to antenatal care (ANC), skilled birth attendance (SBA) and child health in sub-Saharan Africa, potentially undermining progress towards maternal and child survival and Sustainable Development Goals. This study assessed COVID-19's impact on maternal healthcare (ANC and SBA) utilisation coverage, focusing on sub-national levels (regions or counties) to identify healthcare disruption hotspots that require targeted interventions and help policymakers prioritise resources to accelerate progress.

Methods: Monthly health management information system (HMIS) data were used to track changes in healthcare access at sub-national levels in Ethiopia and Kenya during the pandemic. ANC and SBA service utilisation (i.e., coverage and trends) were compared before and during the pandemic. Interrupted time series (ITS) and counterfactual analyses were used to evaluate the pandemic's impact on healthcare utilisation trends. Geospatial mapping was performed to identify hotspots in the affected areas.

Results: The results show significant changes at sub-national levels. ANC declined in several Kenyan counties during the pandemic. Specifically, the counties of Kiambu, Kajiado, and Nairobi, among others, experienced a decline. At the same time, improvements were observed in other counties including Nyamira and Trans-Nzoia. SBA disruptions were observed in two counties, namely Turkana and Embu. In Ethiopia, ANC declined in some parts of the North but remained unchanged in most areas in the South, with some improvements observed in other parts of the country. Southern regions showed resilience in SBA, experiencing gains, while northern regions showed no change. Overall, HMIS data depicted quality issues, i.e., incomplete and implausible data values.

Conclusion: This analysis highlights the low resilience of sub-national health systems to shocks, underscoring the need to strengthen healthcare systems and HMIS data capturing for better data quality. In certain areas, it is believed that conflicts

and climate-related issues had a greater impact on social, economic, and health outcomes than the pandemic. For instance, acute food shortages and a protracted civil conflict in Tigray and other regions impeded access to healthcare in northern Ethiopia, prompting a reprioritisation of relief efforts. At the same time, the COVID-19 pandemic has not affected all regions and counties similarly in terms of cases and deaths due to the varying socioeconomic statuses of the areas. Evidence-based research is essential in identifying hotspots and supporting targeted interventions to achieve SDGs and improve maternal and child health outcomes.

158. Challenges in Research Oversight During the COVID-19 Pandemic at the Kenya Medical Research Institute

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Background: The Scientific and Ethics Review Unit (SERU) of Kenya Medical Research Institute (KEMRI) hosts three Research Ethics Committees (RECs) that provide research oversight. The corona virus disease of 2019 (COVID-19) pandemic disrupted many sectors including ethical review and implementation of research. Measures such as social distancing and remote working were introduced to contain the disease. In response, KEMRI SERU introduced e-mail submission of research protocols and virtual REC meetings. We describe the challenges that impacted research oversight at KEMRI SERU.

Objective: We explored challenges that impacted research oversight during the COVID-19 pandemic.

Methods: In this cross-sectional qualitative study conducted between October 2020 and March 2021, a total of fifty participants were interviewed purposively. 18 were REC members (from a total of 57 (31%)), 8 were SERU research administrators (from a total of 12 (66%)), 18 were Principal Investigators (PIs) employed by KEMRI (from a total of 198 (9%)) and 6 were PIs who are not employed at KEMRI (from a total of 30 (20%)). Audio-recorded data was transcribed, coded, and entered in unique files in NVivo 12. The coded data was organized, explored in themes, and interpreted.

Results: Working in a virtual space was embraced, with key challenges relating to adoption of technology identified. These included intermittent internet connectivity and frequent glitches that disrupted meaningful engagements during virtual REC meetings. Sometimes, voluminous review documents shared through email were corrupted or failed to deliver thus reducing efficiency and productivity. Using email to share documents for review was efficient, however there was no real-time tracking of review process. Additional costs were incurred by REC members and research administrators to enable internet access when working remotely. Lastly, virtual meetings reduced personal social interaction among REC members.

Conclusion: Addressing challenges to improve internet connectivity, secure access to appropriate documentation, tracking of review processes, addressing financial burden and improving social connectedness in virtual meetings may improve REC output and effectiveness.

159. Utilization of Family Planning Services and Associated Barriers Among Women of Childbearing Age with Hearing Impairment, in Two Eastern Districts of Rwanda

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Background: Globally over 70 million people have hearing impairment and beyond 70 thousand Rwandans are deaf. Irrespective of the insistent growth of the deaf population, evidence revealed extensive barriers in accessing family planning services amongst deaf women nevertheless, health care and other services providers do not hold the relevance of their efforts and interventions in addressing the family planning services needs of deaf women. This study, therefore, intended to determine the utilization of family planning services among deaf women of childbearing age in two selected eastern districts of Rwanda.

Methodology: A quantitative, cross-sectional study was used to collect data. A sample included deaf females aged 16 to 49 selected using a non-probability, convenience sampling technique. The intended sample size was 237 however, only 174 participants assisted in filling the questionnaire. The study started from June 2022 to April 2023. Data was analyzed using SPSS version 23.

Results: The findings showed very few respondents (5.7%) have access to family planning. Nearly a third of participants (30.5%) had heard of family planning before. Pertaining to the usage of family planning services, only (11.5%) used contraceptive methods. Condom and emergency pills were relatively used more than other methods with 8(4.6%), and (2.3%) respectively. The most commonly reported barriers were lack of sign language interpreters (21.8%), inability to communicate with care providers (29.9%), and lack of information regarding family planning methods (34.5%).

Conclusion: Accessibility and utilisation of family planning services among the deaf is low owed basically to communication breakdown between deaf and health care providers, and lack of information on family planning methods as languages of

instruction do not include the sign language of the deaf. Thus, the government and concerned organizations need to address all the barriers deaf women face while seeking, accessing, and using family planning services.

160. The impact of COVID-19 Pandemic on Reproductive, Maternal, Neonatal and Child Health Care Services: A case of Kiambu County, Kenya

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Background: The global response to the COVID-19 epidemic has inadvertently undermined established public health goals such as reduction of mother and child mortality and morbidity, particularly in low- and middle-income countries. The extent to which control measures e.g. cessation of movement, enforcement of a night to day curfew among others had impacted service delivery had not formally been investigated. This study investigated the impact of the pandemic on reproductive, maternal, neonatal, and child health (RMNCH) care services in Kiambu County, Kenya.

Methods: This was a retrospective cross-sectional study, data for selected RMNCH indicators in antenatal care (ANC), delivery, postnatal care (PNC) and family planning (FP), before COVID-19 (2018 and 2019) and during COVID-19 (2020) was retrieved from the Kenya Health Information System (KHIS) and compared using either t-test or Mann-Whitney U for the normally distributed or non-normally distributed data respectively. A $p < 0.05$ was considered significant and all data were analysed using SPSS version 24 software.

Results: ANC attendance for new clients, revisits and women completing 4 ANC visits decreased by 2.9%, 8.7% and 17% respectively. The new clients attending PNC significantly increased by 13.3% ($p = 0.007$). While there was a reduction by 0.3% in the number of skilled deliveries, maternal deaths, neonatal deaths and fresh stillbirths reduced by 0.7%, 23.9% and 15.8%. There was a 6.7% increase in macerated stillbirths and a 12.7% rise in caesarean sections that was statistically significant ($p=0.001$). The number of new clients for Family Planning, revisits and women receiving FP commodities reduced by 15.4%, 6.6% and 2.4% respectively. There was no change in child immunization indicators in the COVID 19 versus pre-COVID 19 period. While cervical cancer screening was noted to have stalled, this trend was observed from the two years prior and could not be attributed to the effect of COVID-19.

Conclusion: The measures put by the Government to control the pandemic adversely affected the delivery of most of the RMNCH services offered in the county, services such as childhood immunisation were unaffected though. Therefore, there is need for Governments to develop and institute robust strategies to prevent service interruption during pandemics/outbreaks to ensure that the gains made through the years by various programs such as the RMNCH program are not lost in the long term. Besides, there is need for health departments to find a fairly practical balance in controlling pandemics/outbreaks against continuity of essential services.

161. Social Stigma and Anxiety Disorders and their Related Risk factors among COVID-19 Survivors in Kigali City, Rwanda

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Background: Rwanda reported its first Covid-19 imported case on 14 March 2020 and since there, many cases kept increasing both imported and locally transmitted. Fortunately, many cases have recovered and discharged from Rwanda Covid-19 treatment centers and or from their home settings. However, Psychologists intend to ensure social reintegration of Covid-19 survivors but little was known on the magnitude of anxiety disorder and effect caused by outbreak fearing. Findings from this study could inform psycho-clinicians and entire health system the way of overcoming this issue. The present study aimed to determine factors associated with social stigma and anxiety disorder among Covid-19 survivors in Kigali City.

Methods: A cross sectional study design was used and simple random sampling technique was applied to select 425 people as sample size and structured questionnaire used to interview study participants. Data was analyzed using Statistical Package for Social Scientist (SPSS) version 21.

Results: The study findings show that 50.6% of respondents were male while 49.4% were female and the mean age of respondents was 37.5years. Generally, results revealed that 50.1% of respondents presented high level of social stigma and 48.5% shown high level of anxiety disorders. Among risk factors associated with Covid-19 survivors in Kigali City, respondent living in smaller house with 1-3bedrooms were statistically risky to have social stigma while lower educational level (illiteracy) was statistically associated with anxiety disorder (Chi-square of 28.2 and P-value <0.001). Job discontinuation was relatively a

common risk factor to both social stigma and anxiety disorder (Chi-square=54.47 and P-value <0.001). Similarly, people with lower education level (illiterate) are more likely to have anxiety disorder with [AOR=19.45; 95% CI= 3.92-96.79; P<0.001] than those with tertiary education. Thus, as much the family is bigger as they are at risk of having anxiety disorders where the family with ≥ 6 household members are more likely to have anxiety disorders [AOR=6.42; 95%CI=2.72-15.15; P<0.001] than those with 3 to 5 household members [AOR=2.16; 95%CI=1.20-3.88; P=0.011].

Conclusion: Discontinued job had greater association with stigma and anxiety disorders and this means that they faced economic related challenges while they were sick and supposed to be confined to their houses. To address this health pattern, researcher recommends the Rwandan government and its organs to solve the issue related to the job continuation as consequence of Covid-19 and provide financial support to those who lost their job and reinforce the community awareness about mental health problem for early detection.

162. Assessing the Resilience of Child Immunisation Programs in sub-Saharan Africa amidst the COVID-19 Pandemic: Tracking Coverage and Identifying Key Challenges

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Introduction: The COVID-19 pandemic had significant repercussions on healthcare accessibility and delivery in sub-Saharan Africa (sSA). Governments implemented various measures to contain the virus, such as lockdowns and travel restrictions, leading to disruptions in healthcare services, particularly for women and children's health, and affecting progress toward sustainable development goals (SDGs). This study examines the impact of the pandemic on child immunisation in Ethiopia and Kenya at the national and sub-national levels.

Methods: The research employed routine health management data to analyse changes in child immunisation coverage. The mean differences in immunisation coverage between the pre-COVID-19 and during COVID-19 were tested at a 5% significance level to detect changes. Geospatial maps illustrated coverage variations and changes between the two periods. Counterfactual coverage evaluations were conducted using Interrupted Time Series (ITS) analysis, assuming no COVID-19 impact.

Results: National-level data indicated minor, statistically insignificant disruptions in coverage during COVID-19 peaks in both countries. Sub-national analysis in Ethiopia highlighted relatively stable full vaccination coverage, with significant shifts in the Somali and Dire Dawa regions. Notable vaccine coverage changes were observed across Ethiopian regions except Oromia, Gambela, and Sidama. Measles vaccine coverage saw significant changes throughout Ethiopia. In Kenya, eight counties experienced significant shifts in full vaccination coverage, including Kisii, Turkana, and Marsabit, with most counties also displaying significant changes in measles vaccine coverage.

Discussion: Routine immunisation services in Ethiopia and Kenya faced short-term disturbances at the national level due to pandemic-related fears and restrictions. Sub-national disruptions were witnessed in specific regions and counties, attributed to apprehension about virus exposure during facility visits and logistical challenges from pandemic controls, like inter-regional travel constraints and business closures. Notably, conflicts and climate-related issues influenced social, economic, and health outcomes in certain areas more than the pandemic itself. Northern Ethiopia grappled with healthcare access disruptions due to conflict and food shortages in Tigray, prompting a shift towards relief efforts. Conversely, some regions and counties maintained or improved coverage owing to adequate vaccine stocks and campaigns.

Conclusion: This study reveals that routine immunisation services endured temporary disruptions at the national level in Ethiopia and Kenya. Notable disturbances were observed in specific regions and counties at sub-national levels, attributed mainly to pandemic-related fears and control measures. Conflict and climate-related challenges also played a more substantial role in specific areas' health outcomes compared to the pandemic. While some regions adapted well, others faced exacerbated issues necessitating reprioritisation of efforts.

163. Effect of COVID-19 Pandemic on Routine Childhood Vaccination in Kenya

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Background: Over 228 million people globally are at risk for vaccine-preventable diseases due to disruptions to vaccination programs during COVID-19 era. The exact extent of under- vaccination due to COVID-19 pandemic in Africa is unknown but

will likely result in substantial mortality. Concerted efforts to narrow the vaccination gap must be well informed and targeted to specific contexts and challenges faced.

Objective: Our study aimed to estimate vaccination coverage for Kenyan babies born during the COVID-19 pandemic, and understand correlates; mothers' attitude, social norms and causes of under- vaccination.

Methods: The study leveraged on a previous project that was conducted among women who delivered in 2019 & 2020 in Nairobi and Kiambu counties of Kenya to investigate their experiences of antenatal and childbirth care. Women who had consented to being re-contacted were invited to participate. For quantitative data, which was collected through phone surveys, of the total 1251 telephone numbers dialed, 94% (846) of those reached completed the survey. In-person four focus group discussions were conducted with a sub-set of women who reported under-vaccination.

Results: The results showed that 7.1% of babies were reported to have missed a vaccine, 13.8% had days unprotected from a vaccine-preventable illness, the average number of unprotected days being 6.9. Our results indicate that 10.9% of children born in 2017-19 were under-vaccinated vs. 15.6% of those born in 2020 and 19.3% of those born in 2021-22. There was no significant correlation with mothers' attitude, norms, access or socio-demographic characteristics. Majority of the women participating in the FGDs perceived vaccines as beneficial to their child's health while a substantial proportion had concerns over the number of vaccines administered, short term problems like fever, and side effects. Under-staffing, overcrowding, strikes, stock outs and experiences of disrespect were reported as reasons for staying away from the health facilities.

Conclusion: These findings are suggestive of a pandemic-related vaccination gap. There is need to conduct community outreaches to build trust around vaccine safety and develop and implement strategies that improve relationships with health workers and trust for health institutions. More studies that are context specific, have local involvement, that inform design of interventions to apply during future pandemics, and calamities are needed.

164. Physical Activity and Anxiety During the COVID-19 Pandemic in Tanzania: Does Health Status Matter?

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Background/Aim: Numerous studies exist on the influence of physical activity PA on anxiety, and both positive and negative effects have been reported. Hence, it is important to examine potential factors that may determine how engagement in PA influences mental health status. The present study examined whether health status moderated the association between perceived health status and anxiety among the general population in Tanzania.

Methods: Participants ($N = 213$, mean age = 28.06 years, $SD = 8.11$; 54% men) were recruited from community settings in Tanzania by means of an online survey posted on various social media platforms and through direct e-mail invitations. They completed the International Physical Activity Questionnaire (IPAQ) and the Generalised Anxiety Disorder (GAD-7) Scale as well as self-rated health status.

Results: Participants who engaged in vigorous PA and moderate PA reported less anxiety. Walking and sitting did not have a significant relationship with anxiety. Optimal health status was also related to lower anxiety levels.

Conclusion: Findings support the beneficial effects of vigorous and moderate exercise in reducing anxiety, as well as the relative importance of health status ratings in mental health outcomes.

165. Effect of COVID-19 on Child Mortality in Rwanda

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Background: The COVID-19 pandemic has presented unparalleled challenges to healthcare systems globally, sparking worries about the sustainability of vital services, including child healthcare. The pandemic's potential for disruption demands an understanding of its impact on child healthcare, which is crucial for effective public health planning and resource allocation. Our study examines the pandemic's effects on child healthcare in Rwanda.

Method: We examined data from the National Health Information Management System spanning the years 2015 to 2022, and utilized an interrupted time-series analysis to determine the effect of COVID-19 on stillbirth, neonatal, and infant mortality rates. We used R version 4.2.3 for the data analysis.

Results: The rate of stillbirth (2.4 per 1,000 live births 95% confidence interval (CI):0.06 – 4.24, $p = 0.011$) and neonatal mortality (1.4 per 1,000 live births (95% CI:0.32 – 2.4), $p = 0.012$) significantly increased after the confirmation of the first COVID-19 case and the initiation of the lockdown. Notably, the trend of neonatal mortality continued to decrease significantly (-0.23; 95% CI: -0.29 - 0.17, $p < 0.001$). Over time, the rate of stillbirth maintained its pre-COVID level (0.01; 95% CI: -0.09 - 0.11, $p =$

0.867). On the other hand, the level (-0.29; 95% CI: -1.12 - 0.54, $p = 0.494$) and trend (0.00; 95% CI: -0.04 - 0.05, $p = 0.926$) of the rate of infant mortality was not significantly affected by the COVID-19 disruption.

Conclusion: The initial surge in stillbirths and neonatal deaths upon the confirmation of COVID-19 cases and the implementation of movement restrictions highlights the need for special consideration for this vulnerable group in the event of a health crisis that could disrupt medical care or movement. It is encouraging to note that infants were not affected by COVID-19-related disruptions and that over time, the healthcare system was able to provide services comparable to or even better than those offered prior to the pandemic for neonatal mortality.

166. Effect of COVID-19 on Maternal Health Services in Rwanda

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Background: The COVID-19 pandemic has posed unprecedented challenges to healthcare systems worldwide, raising concerns regarding the continuity of essential services, including maternal services. Given the potential disruption caused by COVID-19, understanding its effects on maternal health services is crucial to public health planning and resource allocation. We studied the effect of COVID-19 pandemic on the provision of maternal health services in Rwanda.

Methods: We analyzed data from the National Health Information Management System between the years 2015 and 2022, and conducted an interrupted time-series analysis to evaluate the impact of COVID-19 on the number of women who received their first antenatal care visit (ANC) during the first trimester of pregnancy and the percentage of those who delivered via caesarean section. The data analysis was performed using R version 4.2.3.

Results: We observed a significant uptake of first antenatal care (ANC) visit in the first quarter of the pregnancy (1,755 pregnant women, 95% confidence interval (CI): 474 – 3036, p value = 0.009) and in the rate of caesarean delivery (1.92%, 95% CI: 1.31, 2.54, p value <0.001) after COVID-19 disruption. Over time, the number of pregnant doing their first ANC in their trimester (66; 95% CI: -5, 136, p value: 0.071) and the percentage of birth by caesarean section maintained its pre-COVID level (0.02; 95% CI: -0.01- 0.05, p value: 0.246).

Conclusion: The notable increases in ANC utilization and Caesarean delivery rates during the pandemic reflect adaptive healthcare responses. Implementing measures to ensure consistent access to essential services and fostering responsive healthcare systems will be instrumental in safeguarding maternal health in the face of uncertainties.

167. Access to Specialized Eye Care in Rural Settings during 2020 to 2021 COVID-19 Lockdown: A Case at Rural Primary Health Facilities in Southwestern Uganda

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Background: In 2020 and 2021, Uganda faced COVID-19 lockdowns limiting access to specialized healthcare typically available at tertiary level facilities. In 2019, 5 Ophthalmology PG specialist trainees from MUST had a two-week experiential program at 5 rural health care facilities. The PGs actively participated in providing health care services at the primary care facilities. The study aims to assess the impact of PGs' placement on access to specialized eye care services during COVID-19 peak years at two primary care facilities in rural southwestern Uganda.

Methods: We conducted a review of PG community placement reports to identify health facilities that had eye clinics established by PGs. Additionally, we examined the records of the eye clinics established by PGs at primary health care facilities during the peak years of the COVID-19 pandemic in 2020 and 2021. We extracted data on the number of patients treated for eye conditions during the study period.

Results: In 2019, PGs established two specialized eye clinics at Rugazi Health Centre IV in Rubirizi District and Rukunyu Hospital in Kamwenge District. Hands-on training sessions for ophthalmic clinical officers were provided to enhance their capacity in managing eye conditions. Each week, a dedicated clinic day was scheduled for specialized eye care services. From 2020 to 2021, a total of 3,244 patients received essential eye care, with 2,110 and 1,134 patients treated at Rugazi HC IV and Rukunyu Hospital respectively.

Conclusion: The PG community placement successfully established specialized eye care services at the grassroots level, even during peak COVID-19 years with movement restrictions. This ensured accessibility to essential eye care for rural communities during lockdown. Specialist PG trainees improved primary care facilities, delivering previously unavailable services and mitigating accessibility constraints in rural areas. Ongoing partnerships between academic institutions, health facilities, and the

community are crucial for establishing and sustaining specialized care, enhancing health system resilience during unforeseen pandemics like COVID-19.

168. Effectiveness of Peer-led HIV Self-testing on HIV Testing Uptake among Men in Two Fishing Communities: Early Results from the PEST4MEN Intervention in Uganda

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Background: HIV self-testing (HIVST) can improve HIV testing rates among highly mobile populations including men in the fishing communities, but this is not well documented.

Objective: We assessed HIVST uptake and linkage to HIV care among men in two fishing communities within the Lake Victoria basin in rural Uganda.

Methods: The pilot, peer-led HIVST intervention for men (PEST4MEN) was conducted among men living in two fishing communities in Kalangala and Buvuma island districts in central Uganda, between July and September 2022. The implementation of the intervention was led by trained male volunteers (“peer-leaders”) who were selected from existing social networks following pre-defined criteria. Each peer-leader nominated up to 20 social network members (SNMs), who were administered a baseline interview if they were eligible. Eligible SNMs had to be 15+ years, self-report a HIV-negative or unknown HIV status and not tested for HIV at least three months prior to enrolment. After the baseline visit, SNMs were oriented on HIV self-testing processes and requested to pick two oral HIV self-test kits from their peer-leaders. Enrolled SNMs were followed at 2-months post-baseline to assess uptake of HIV self-testing and linkage to HIV care and treatment, as appropriate. Data analysis was conducted using STATA (version 16.0).

Results: Of 475 SNMs screened, 400 (84%) were eligible and administered a baseline interview. Ninety percent (361) completed a follow-up interview. Of these, 98.3% (355) obtained at least one kit from their peer-leaders; 99.1% (352) self-tested for HIV. Of the 352 self-testers, 14.5% (51) tested HIV-positive; 31.4% (16) were first-time HIV-positive testers. Of the 16 first-time HIV-positive testers, 87.5% (14) went for confirmatory HIV testing; seven (7) were confirmed as HIV-positive and five (5) men were linked to HIV care. However, although >80% of self-test kits users were oriented in HIV self-testing processes by their peer-leaders, up to 12.2% (43) found difficulties in understanding the user instructions; 10.8% (38) found it difficult to read the test results; 7.1% (25) forgot what to do; 6.8% (24) forgot to time the testing exercise, while 6.0% (21) read the results before 20 minutes.

Conclusion: Our intervention achieved high HIV testing uptake among men in the fishing communities and identified men with previously undiagnosed HIV infections who were linked to HIV care. However, men still had challenges performing the self-testing exercise or interpreting results correctly. Additional efforts are needed to improve linkage to HIV care and men’s ability to perform the test and interpret results correctly.

169. Evaluating the Impact of COVID-19 on National HIV Treatment Services in Rwanda: An Interrupted Time-series Analysis

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Background: While SARS-CoV-2 arrived later in sub-Saharan Africa, response efforts to curb transmission have been successful in several African countries. However, with the health sectors stretched for resources, there are concerns that pandemic mitigation efforts may hinder the provision of other routine critical health services. Rwanda has one of the strongest HIV care and treatment programs in the region. The objective of our study was to analyze the impact of COVID-19 measures on the delivery of HIV care and treatment services.

Methods: We analyzed monthly data from the National Health Management Information System between January 2018 and December 2020 to examine the rates of new patients starting antiretroviral therapy (ART), number of patients who failed the first line and switched to second- or third-line of ART regimen, and number of patients who were lost to follow-up. We conducted a Bayesian interrupted time-series analysis to determine the impact of COVID-19 on each indicator after the first confirmed case of COVID-19 and the lockdown initiation in the country.

Results: The impact of COVID-19 on HIV treatment services was minimal, as seen in the initial decrease in the rate of new enrollment in ART (rate ratio [RR]=0.89, 95% Credible Interval (CrI):0.83 – 0.95). It is worth noting that over time, the rate of newly enrolled patients on ART increased (RR=1.02; 95% CrI:1.01 – 1.03). The rate of patients on second- or third-line

treatment (RR=0.99; 95% CrI:0.96 – 1.02) and lost-to follow-up (RR=0.98; 95% CrI:0.86 – 1.12) was not affected by the first confirmed case of COVID-19 and subsequent restrictions that were enacted or overtime (RR=0.99; 95% CrI:0.99 – 1.00) and (RR=0.98; 95% CrI:0.96 – 1.00), respectively.

Conclusion: Despite the immediate impact of the COVID-19 disruptions on routine health service delivery in Rwanda, the country's strong HIV program was not significantly affected. The matured clients follow-up, decentralised ART services at lower facility level, multiple months drugs pick-up and role of the peer educators at community level were enablers to the HIV treatment services continuity during COVID-19 pandemic.

170. Women in Health and their Economic, Equity and Livelihood statuses during Emergency Preparedness (WHEELER) Protocol: A Mixed Methods

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Affiliation: Aga Khan University, Kenya

Introduction: Kenya reported its first COVID-19 case on March 13, 2020. Pandemic-driven health system changes followed, as did mitigation measures. These measures had unintended health, economic, and societal consequences: Kenyan women in paid and unpaid employment bore the brunt. This project aims to identify potential gender equality and health equity gaps, and any possible disproportionate health and socio-economic impacts experienced by paid and unpaid female health care providers in Kilifi and Mombasa Counties during the COVID-19 pandemic. It will also identify evidence-based policy options for future safeguarding of the unpaid and paid female health work force during emergency preparedness, response and recovery periods.

Methods: Participatory mixed methods framed by a health equity, gender analysis and Human-Centred Design (HCD) approach will be used to engage the unpaid and paid health workforce. Research implementation will follow four of the five phases of the HCD approach: empathize, define, ideate & synthesis, prototype/critical review, and testing phase. Data collection in the empathize phase will utilize qualitative (focus group discussions and in-depth interviews) and quantitative (survey) to explore perceptions, experiences, needs and priorities of health care providers in relation to COVID-19. This will then be further explored and contextualized in the define phase. In the ideate & synthesis phase, workshops with key stakeholders and health care providers will result in gender equitable and transformative recovery solutions for future pandemic preparedness based on the findings from the define phase. In the prototype and critical review phase, the solutions proposed will then be critically appraised and packaged as policy and strategic recommendations that are gender-sensitive and transformative. Community research advisory groups and local advisory boards will be established to ensure integration and sustainability of the participatory research design.

Results: Preliminary analysis based on survey data has found that health care providers in the lowest income bracket, particularly women, reported that the pandemic had extreme effects on their livelihoods. More women reported additional unpaid responsibilities while more men reported additional paid responsibilities.

Discussion and conclusion: Globally, seven out of ten health workers are women. This study will generate evidence on root cultural, structural, socio-economic and political factors that perpetuate gender inequities and female disadvantage in the paid and unpaid health sector. Such evidence is critical for the realization of women's rights, well-being and livelihoods, and for the development of gender-sensitive and transformative health systems that can withstand future emergencies and structural shocks.

171. Lifestyle Practices Influencing Mental Health Issues Experienced by University Students During Covid-19 Pandemic Lockdown Period

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Background: Mental health issues continue to be of public health among the youth around the world. The emergence of the COVID-19 pandemic could have contributed to the incidence of mental health issues. The aim of this study was to determine the lifestyle factors influencing mental health issues experienced by university students during the COVID-19 pandemic lockdown period.

Methods: The methodology used in this study was a descriptive, quantitative and cross-sectional study design. The study had 293 participants as the sample size with cluster sampling, purposive and convenience sampling techniques being used to pick participants of the study. The data collection tool used was a self-administered online questionnaire. The data was managed and entered into SPSS version 25 and descriptive and inferential statistics were analyzed using Chi-square test at 95% Confidence Interval and a p-value of 0.05.

Results: The findings show that 55% of the respondents were males and 45% were females. The research found that 38% of the students had mild depression; with 11% had mild stress and 11% had mild anxiety with 23% had perceived stress. The study shows that most respondents (53%) did not get an average of 7-8 hours of sleep, 43% had trouble falling asleep, 71% never included any fruits in their daily meals and 63% never included meat and meat products in their daily meals. The main exercises engaged in: 50% were jogging or running and 43% were gardening, few did swimming (16%), bicycling (15%) and weight lifting (10%) minimal engaged in walking (4%). Besides, 46% of the respondents spent more than 8 hours listening to music, 53% spent 5-8 hours watching movies and 49% spent at least 2-4 hours watching TV. The relationship between the lifestyle practices and the mental health status was a significant one with the p-values of sleep being 0.000 for those who did not get 7-8 hours of sleep on depression, 0.000 for both stress and anxiety and 0.037 for perceived stress. The chi-square tests done showed that there was a significant relationship on all the mental health issues experienced and the various lifestyle activities engaged in ($p < 0.05$); except for engaging in compound work, walking, hours on tiktok, vegetable intake, skipping meals, frequency of exercise per week and trouble falling asleep and taking more than 30 minutes to sleep ($p > 0.05$).

Conclusion: the students experienced mild levels of stress, depression and anxiety during the COVID-19 pandemic lockdown. There was little change in sleeping patterns and eating habits with decrease in exercising and increase in time spent in electronic based -leisure activities. Therefore, it is recommended to carry out a study to determine if the students are still experiencing mental health issues due to experiencing them during the COVID-19 pandemic.

172. “Forgotten and Confused”: Community Health Volunteers’ Experience during the COVID-19 Pandemic in Kiambu County, Kenya

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Description: In the fight against COVID-19 community health workers were called upon to “play a critical role in enhancing continuity of community-based services (level 1)”. As part of Kenya’s COVID-19 Response Strategy, CHVs were recognized as agents of behaviour change, supporting the government in promoting patient education on COVID-19, demystifying misconceptions, and promoting hygienic practice.

Background: For already overburdened health systems in low- and middle-income countries, the coronavirus-19 (COVID-19) pandemic presented a challenge. In Kenya, the community health volunteers (CHVs) were at the forefront of this crisis. Through public awareness campaigns, home visits, and referrals for additional care, CHVs were meant to lessen the impact on the healthcare system as a whole.

Objective: This study aimed to understand community health volunteers’ experiences during COVID-19 pandemic in Kiambu County, Kenya.

Methods: We conducted 2 focused group discussions with 24 CHVs to capture plural perspectives of their experiences during the COVID-19 lockdown. This employed a phenomenological explorative qualitative study design. Data were digitally recorded, transcribed, translated, and coded before thematic analysis.

Results: Specific themes from the experiences of the CHVs during the COVID-19 lockdown were: (1) dedication and commitment to serving the community; (2) overcoming demoralization; and (3) barriers to health care delivery and access. In regards to the community perspectives of COVID-19, the CHVs relayed widespread misinformation among community members, with some experiencing stigma due to COVID-19 misconceptions. They also gave second-person accounts of the economic strife the community went through as a result of mitigation measures. The CHVs were skeptical about the county’s preparedness in dealing with the COVID-19 and future pandemics.

Conclusions: Community Health Volunteers (CHVs) demonstrated unwavering dedication and commitment during the COVID-19 pandemic, despite facing ongoing challenges such as limited resources and community stigma. These findings emphasize the crucial role of the community health approach in combating pandemics in underdeveloped nations. We strongly recommend acknowledging the efforts of CHVs and enhancing their training to actively engage in the fight against other diseases. It is imperative that CHVs are adequately equipped to fulfill their responsibilities.

173. SARS-CoV-2 Exposure in a TB and TB/HIV Co-infected Cohort through Antibody Assessment in Kenya Between 2019 and 2023

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Background: COVID-19 has increased complexities associated with TB and TB/HIV burdening the immune system. COVID-19 and TB affect respiratory airways having resembling symptoms, patients with similar symptoms may be misdiagnosed.

SARS-CoV-2 can affect patients with co-existing medical conditions. This study determined the presence of SARS-CoV-2 antibodies in the TB and TB/HIV cohort.

Methods: Study evaluated plasma samples that had been collected from participants from three clinical sites in Nairobi between October 2019 and June 2023 from 6 groups of adults; Group A (TB-HIV-), B (TB-HIV+ART+) and C (TB-HIV+ART-) n=22 each group, not COVID-19 vaccinated. Group D (TB+HIV-) n=247 visit 1 (7 vaccinated) and n= 243 visit 2 (15 vaccinated), Group E (TB+HIV+ART+) n=31 visit 1 (2 vaccinated) and n=30 visit 2 (2 vaccinated), Group F (TB+HIV+ART-) n=28 visit 1 (1 vaccinated) and n=28 visit 2 (3 vaccinated). Visit 1 sample taken at the start of TB treatment while visit 2 on completion of treatment. Samples were evaluated using WANTAI SARS-CoV-2 IgM ELISA, a kit pre-coated with recombinant antigen which is the receptor-binding domain of SARS-CoV-2 spike protein.

Results: Positivity rate of SARS-CoV-2 in groups was; HIV infected on ART (0%), healthy controls (13.6%), HIV infected not on ART (9.1%), TB infected starting TB treatment (38.1%) and 39.5% on TB treatment completion. TB/HIV co-infected participants on ART showed 51.6% positivity at beginning of TB treatment and 46.7% upon TB treatment completion. TB/HIV co-infected participants not on ART showed 1.4% positivity at beginning of TB treatment and 1.5% upon TB treatment completion.

Conclusions: Results show more SARS-CoV-2 sero-positivity in TB groups compared to healthy control or HIV groups. Lower SARS-CoV-2 positivity was observed in HIV+ groups, regardless of their ART status. Further evaluation of pre-existing respiratory infections like TB in COVID-19 patients is suggested to shed light on the correlation between SARS-CoV-2, TB and TB/HIV and disease outcomes. Such investigations will contribute to a better understanding of the complex interactions between these diseases and guide the development of effective strategies for their management.

174. COVID-19 Transmission Risk Factors among People Living with HIV and TB in Nairobi, Kenya

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Affiliation: Knya Medical Research Institute, Kenya

Background: The triple burden of COVID-19, TB and HIV infections poses several public health challenges. Individuals with pre-existing conditions are more susceptible to COVID-19 infection. Three major corona epidemics have been reported in the last two decades with their different causative agents; SARS-CoV) in 2002, MERS-CoV) in 2012 and the recent SARS-CoV-2 outbreak, known as COVID-19. COVID-19(Soriano V,et al 2020). Manifestation and immunological interactions in individuals co-infected with HIV/TB still remains uncertain (Jacques L T,et al 2020). The aim of this study was to provide evidence on unique risk factors influencing COVID-19 transmission among people living with TB and HIV to enhance informed public health intervention in preventing its transmission.

Methods: This was a prospective cross longitudinal cohort study of TB-HIV participants which was done between 2020-2022 in Nairobi Kenya. Blood samples were collected from 3 health facilities in Nairobi County for 3 years and transported to KEMRI laboratories for analysis. COVID 19 SANDWICH ELISA method was used for analysis. Plasma was used for analysis using WANTAI SARS CoV-2 Ab. Samples with greater absorbance values above or equal to cut-off values were identified as positive for SARS-CoV-2. Bivariate analysis was done using the Chi-square method to test for significance.

Results: Among 98 HIV/TB participants Assessed during the study, 60 (61.2%) were positive for Covid- 19. Thirty-three. (55.0%) were male and 27(45.0%) were female,48(80.0%) lived in semipermanent houses. Thirteen (21.7%) of the participants had a tertiary level of education and 26(43.3%) completed primary level education. Seven (11.7%) of the participants were formally employed and 43(71.7%) had informal employment. Ten participants (16.6%) had remittance sponsored form of employment. Seventeen participants (28.3%) were alcohol users. Male had odds of 1.74 [95% CI (0.99-3.05)] compared to female 1.42 [95% CI (0.79-2.56)] participants. There was an increased trend of likelihood of Covid 19 positivity among participants residing in semipermanent households compared to those in permanent houses odds 2.00 [95%CI (1.23-3.26)] vs 0.86 [95%CI (0.40-1.85)], P=0.066 respectively. Participants with tertiary education level had higher odds of Covid 19 positivity 3.25 [95% CI (1.06-10.0)] compared to other groups though not statistically significant. Participants who received remittance sponsorship had higher odds of Covid 19 positivity compared with other groups in this cohort 3.33 [95% CI (0.92-12.2)].

Conclusion: The findings indicate that participants residing in semi-permanent households had a 2.3-folds chance of testing positive for covid 19. Tertiary education level and remittance sponsored participants were both associated with higher odds of Covid-19 positivity though not statistically significant. The study provides an important insight into demographic and socio-economic factors that enhance COVID-19 transmission in this vulnerable population. Tailored public health interventions should be instituted to curb transmission. Further research is needed to determine the causal relationship and potential mitigation factors to these observed associations.

175. Tuberculosis Services Delivery Challenges and Mitigations During COVID-19 in Tanzania: A Qualitative Study of Providers of Healthcare

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Background: The WHO has categorized Tanzania among the 30 high TB burden countries that experienced limited disruptions to TB detection during COVID-19 pandemic. Although COVID-19 did not have detrimental effects, an understanding of services delivery was salient for future pandemic preparedness.

Objective: A qualitative descriptive study was conducted to explore challenges exerted by COVID-19 on supply of TB commodities, TB care cascade, and mitigations taken by healthcare workers (HCWs) and community health workers (CHWs) between March 2020- February 2021. HCWs and CHWs from 37 health facilities in seven highly COVID-19 affected administrative regions (Dar Es Salaam, Dodoma, Kilimanjaro, Arusha, Mwanza, Kigoma and Mbeya) were purposively selected for 25 in-depth interviews and 10 focus group discussions. Transcripts were analyzed using a framework approach.

Results: Many HCWs reported unusual stock outs and delays in receipt of GeneXpert cartridges and sputum containers. Few reported pediatric TB drugs shortages. A decline in clients attending TB services was reported by HCWs and CHWs. Clients' reluctance to TB screening, sputum sample collection and contact tracing were reported by some CHWs. Fear of contracting COVID-19 or being detected with COVID-19 with subsequent quarantine and subjection to COVID-19 vaccination were among the reasons for the observed challenges. Inadequate COVID-19 knowledge among CHWs and being unvaccinated against COVID-19 posed threats to sustaining TB services. To overcome the challenges, HCWs used other containers at their disposal for sample collection, sputum pooling method to minimize GeneXpert cartridges use, differentiated care per TB risk groups, extended drug refills to minimize COVID-19 risk exposure. Mobile communication was used for tracing missed clients while household visits were limited to TB risk groups. COVID-19 vaccination strategy for CHWs was implemented to minimize fear and sustain TB services.

Conclusions: The pandemic negatively affected healthcare-seeking behavior, procurement and distribution of TB commodities. However, adaptations in services operationalization, COVID-19 prevention strategies may have sustained delivery of services reflecting the resilience of the healthcare system.

Keywords: COVID-19, Tuberculosis services, challenges, mitigations, community health workers, qualitative, healthcare workers

176. Uptake of Human Papilloma Virus Vaccine during COVID 19 Pandemic among 10-Year-Old Girls in Baringo County, Kenya

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Background: Human Papilloma Virus (HPV) causes cervical cancer, which is the fourth most common cancer in women. On 18th October 2019, Kenya introduced the HPV vaccine into the country's routine immunization programme targeting girls aged 10 years. This was aimed at protecting around 800,000 girls against cervical cancer annually. The current study aimed at assessing the uptake of the HPV vaccine during the Covid 19 pandemic.

Methods: The study was a cross sectional study and looked at the uptake of this vaccine between the month of February to July 2020. The study utilized data from the hospital records for a period of six months.

Results: In the month of February and March only 52 (0.43%) and 31 (0.10%) girls respectively received the first dose of HPV vaccine. A total of 471 (3.9%) and 463 (3.85%) girls received the second dose of the HPV vaccine in the month of May and April respectively. The increase in the second dose of the HPV might have been attributed to the fact that it was already six months since the vaccine was introduced, hence the first cohort of girls were due for their second dose of the vaccine. However, this county's uptake of HPV vaccine was very low and below the country's target of 70%.

Conclusion: The Covid 19 pandemic greatly affected the uptake of the HPV vaccine in Baringo County. The vaccine had just been introduced in October 2019 and when the pandemic hit, the lockdowns and the closure of the schools resulted in a sharp decline in the uptake of this vaccine. There is still need to have sensitization on the HPV vaccine among the 10 year old girls and their parents to increase the uptake as a measure to reduce cases of cervical cancer in the future.

177. Patient Level Barriers to Accessing TB Care Services during the COVID-19 Pandemic in Uganda, a Mixed Methods Study

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Background: Lockdown measure has been utilized widely to mitigate COVID-19 pandemic transmission and recently during the 2022 Sudan Ebola Virus Disease outbreak in Uganda. These have setback effects on the continuity of essential health services such as tuberculosis (TB) care, reversing progress made in the fight against tuberculosis (TB) over the past decade. We set out to understand patient-reported barriers to accessing TB care services during the COVID-19 pandemic in Uganda.

Methods: Mixed methods study involving review of medical records of TB patients who received TB care from January to September 2020. We used quantitative and qualitative methods including phone questionnaires and in-depth interviews. We carried out descriptive statistics, a chi-square test and conducted a thematic analysis.

Results: We carried out phone interviews with 672 participants. The majority (60%) were male and with an average of 35 years (SD:11). A significantly higher proportion of patients reported a barrier to TB care access during the COVID-19 lockdown than pre-lockdown (79.9% vs 68.1% p=0.027). We carried out in-depth interviews with 28 participants (54% (15/28): male). Barriers experienced by these participants included lack of a means of transport to reach the health facility, lack of money to pay the transport fares, long distances to the facility, fear of COVID-19 infection, stigma due to overlap between TB and COVID-19 symptoms, and few health care workers available during the lockdown period.

Conclusion: Lockdown measures instituted to mitigate the transmission of COVID-19 affected access to TB care services in Uganda. Uganda is at risk of future emerging and re-emerging diseases of epidemic potential. Therefore, there should be measures to ensure the continuity of essential services such as tuberculosis care during the implementation of future epidemic response interventions such as a lockdown.

178. Peer Leaders and Mentorship to Enhance the Adoption of Quality Healthcare Delivered through Health Digitalization by Community Health Workers in Rwanda

Co-authors: Ishimwe Angele Bienvenue, Uwitonze Annick Gloria; Mukankuranga Alphonsine, Nsubuga Diana Nambatya, Leonard Wendy

Affiliation: TIP Global Health, Rwanda

Description Background: The Africa Center for Disease Control is actively advancing the adoption of Digital Health Technology (DHT) through a comprehensive digital transformation strategy, aligning with the WHO 2020-2025 target. However, successful DHT implementation necessitates more than mere training, device acquisition, and infrastructure development. Research highlights an 80% failure rate for DHT due to insufficient systemic support, leadership commitment, and abandonment. Studies emphasize that personalized interventions, peer learning, and peer leadership support can enhance health workforce performance. These principles were applied in implementing the E-Heza digital health platform within the Ntarama Health Center catchment area in Rwanda's Bugesera District.

Methodology: We conducted a desk review of E-Heza data reported in a six-month period. In June 2022, E-Heza training was conducted for all 88 Community Health Workers (CHWs) in the Ntarama Health Center catchment area. To enhance adoption, a peer learning exchange model focusing on maternal and child health services was initiated in January 2023. A proficiency assessment was administered by an implementation assistant to CHWs using E-Heza during healthcare delivery. CHWs consistently scoring over 95% for three consecutive months were recognized as super users. These super users undertook the responsibility of training their peers, tailoring the approach to individualized preferences for adopting innovations. Regular supervision and knowledge exchange ensured proficient utilization of E-Heza, aided by offline functionality and online data synchronization. CHWs were provided with internet access and utilized WhatsApp and SMS for troubleshooting with the implementation assistant.

Results: From January to June 2023 there was a 26% rise in the number of community members evaluated by CHWs (from 9,707 to 12,260), accompanied by a 43% surge in unique visits (from 20,822 to 29,862). Particularly notable was the 44% increase in home-based management of child illnesses (from 1,506 to 2,165).

Conclusion: The peer-to-peer training strategy has proven highly effective in optimizing E-Heza adoption. This approach empowers CHWs to deliver improved healthcare services, while facilitating direct data recording for child illness management, growth monitoring, case management, and pregnant women follow-up, aligning with WHO recommendations. The promising potential of DHTs to fortify healthcare delivery for universal health coverage is evident. However, realizing seamless integration of technology and healthcare demands targeted efforts to effectively embed these tools within the frontline health workforce.

179. Reliving Stigma: Following the Impact of HIV-ARV stigma on the consumption and uptake of COVID-19 vaccination (in) fertility Fear among Women in Kisa West in Kenya**Corresponding author:** Mariam Florence Yusuf**Co-authors:** Ruth Jane Prince, Washington Onyango Ouma**Affiliation:** University of Nairobi, Kenya**Description:** The study drawing attention to the HIV-antiretroviral stigmatization and its impact on the present COVID-19 vaccination (infertility) fear asks, “How does HIV-ARV stigmatization reproduce itself in future health interventions?” The study was in Kisa West in Khwisero, Kenya, where conversations about ARVS uptake and COVID-19 vaccination (in) fertility fears appeared entangled. Therefore, our work focused on COVID-19 vaccination uptake, not only on a recurrent (in) fertility fear that leads to hesitancy but also on memories and experiences of HIV-ARV stigmatization.**Methodology:** The study draws on a 10-month ethnographic work, highlighting continuous stories and narratives from Kisa West young women’s HIV and ARV experiences. We followed the relationship between HIV-ARV stigma, and COVID-19 vaccination infertility fear consumption by navigating the complex entanglements and the relation between them. We triangulated our ethnographic conversations with in-depth interviews with ten community health promoters (previously known as community health volunteers), two women mentor mothers (living with HIV) and working closely with young women living with HIV.**Results:** The study findings suggested, first, the convergence of the ARV uptake in connection with HIV and the rumor of COVID-19 vaccination infertility provided a porous space in which memories of Stigma materialized among the Young Women Living with HIV (YWLWHIV). Second, though infertility fear was a recurring issue in many new health interventions, the HIV-ARV experience had taught the women the complexity of Stigma and the losses it brings with it. Third, the openness of the COVID-19 inoculation in health centers and vaccination points created some form of uncertainty and fear of reliving Stigma for the YWLWHIV.**Conclusion:** The study unraveled multiple, complex, and layered perspectives of reactive women’s interaction with COVID-19 vaccination infertility fears and Stigma as one of the underlying factors influencing the women’s response to health interventions. Our work challenged public health interventionists to realize the need for reviewing HIV-related community experiences and how the experiences spill over to present or future health interventions for planning purposes.**180. Women in Health and their Economic, Equity and Livelihood Statuses during Emergency Preparedness (WHEELER) Protocol: A Mixed Methods Study in Kenya****Corresponding author:** Evaline Chepchichir Lang’at**Co-authors:** Bilali Mazoya, Pauline Oginga, Ferdinand Okwaro, Norah Matheka, Irene Kibara, Rhoda Otieno**Affiliation:** Aga Khan University, Kenya**Introduction:** Kenya reported its first COVID-19 case on March 13, 2020. Pandemic-driven health system changes followed, as did mitigation measures. These measures had unintended health, economic, and societal consequences: Kenyan women in paid and unpaid employment bore the brunt. This project aims to identify potential gender equality and health equity gaps, and any possible disproportionate health and socio-economic impacts experienced by paid and unpaid female health care providers in Kilifi and Mombasa Counties during the COVID-19 pandemic. It will also identify evidence-based policy options for future safeguarding of the unpaid and paid female health work force during emergency preparedness, response and recovery periods.**Methods:** Participatory mixed methods framed by a health equity, gender analysis and Human-Centred Design (HCD) approach will be used to engage the unpaid and paid health workforce. Research implementation will follow four of the five phases of the HCD approach: empathize, define, ideate & synthesis, prototype/critical review, and testing phase. Data collection in the empathize phase will utilize qualitative (focus group discussions and in-depth interviews) and quantitative (survey) to explore perceptions, experiences, needs and priorities of health care providers in relation to COVID-19. This will then be further explored and contextualized in the define phase. In the ideate & synthesis phase, workshops with key stakeholders and health care providers will result in gender equitable and transformative recovery solutions for future pandemic preparedness based on the findings from the define phase. In the prototype and critical review phase, the solutions proposed will then be critically appraised and packaged as policy and strategic recommendations that are gender-sensitive and transformative. Community research advisory groups and local advisory boards will be established to ensure integration and sustainability of the participatory research design.**Results:** Preliminary analysis based on survey data has found that health care providers in the lowest income bracket, particularly women, reported that the pandemic had extreme effects on their livelihoods. More women reported additional unpaid responsibilities while more men reported additional paid responsibilities.**Discussion:** Globally, seven out of ten health workers are women. This study will generate evidence on root cultural, structural, socio-economic and political factors that perpetuate gender inequities and female disadvantage in the paid and unpaid

health sector. Such evidence is critical for the realization of women's rights, well-being and livelihoods, and for the development of gender-sensitive and transformative health systems that can withstand future emergencies and structural shocks.

181. Evaluating the Impact of COVID-19 on HIV Testing in Rwanda: An Interrupted Time-series Analysis

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Background: As the coronavirus disease (COVID-19) pandemic began, there were concerns about its potential impact on HIV prevention efforts, particularly with regard to testing. Although HIV testing services in Rwanda have been effectively decentralized at lower level of health facility, there are fears that COVID-19 measures could significantly affect its routine implementation. This study aimed to evaluate the effects of COVID-19 restrictions on HIV testing services in Rwanda.

Methods: We analyzed monthly data from the National Health Management Information System between January 2018 and December 2020, focusing on the number of pregnant women who underwent prevention of mother to child transmission (PMTCT) services and the number of HIV tests conducted. To estimate the changes in each indicator before and after the COVID-19 pandemic, we utilized a Bayesian interrupted time-series analysis.

Results: HIV testing services were not negatively affected by COVID-19 disruptions when the first case was confirmed or when restrictions were enacted one week later. We observed an immediate increase in the rate of individuals aged 15 years and above tested for HIV (rate ratio [RR]=1.17, 95% Credible Interval (CrI): 1.11 – 1.22). In the way the ratio of pregnant woman tested for HIV was not affected increase over time (RR=0.99; 95% CrI: 0.96 – 1.02). Over time, the ratio of pregnant women tested for HIV maintained its pre-COVID level (RR=1.00; 95% CrI: 1.00 – 1.01), and we observed a mild decrease, in the ratio of individuals tested for HIV (RR=0.98; 95% CrI: 0.97 – 0.99).

Conclusion: HIV prevention services in Rwanda were not significantly affected by disruptions due to COVID-19. Strong and mature programs such as the PMTCT program maintained their pre-pandemic service levels immediately and over time, indicating that investing in health system strengthening and decentralizing routine programs in primary healthcare settings might be the best way to prepare for future pandemics in low- and middle-income countries like Rwanda.

182. Evaluating the Impact of COVID-19 on Voluntary Medical Male Circumcision (VMMC) Services in Rwanda: An Interrupted Time-series Analysis

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Background: The global community feared the potential negative impact of coronavirus disease (COVID-19) on non-urgent but necessary healthcare services. Despite having one of the most robust HIV prevention and treatment programs in the region, Rwanda faced the risk of undoing progress in controlling and eliminating HIV due to the pandemic. With this in mind, we aimed to assess the impact of COVID-19 restrictions on voluntary medical male circumcision (VMMC) services delivery in Rwanda.

Methods: We analyzed monthly data from the National Health Management Information System between January 2018 and December 2020 to examine the rates of VMMC among males aged 15 and above. We used a Bayesian interrupted time series analysis to estimate the changes in indicators before and after the COVID-19 pandemic.

Results: We observed a significant and sharp decline in the rate of VMMC coverage following the confirmation of the first SARS-COV-2 case in Rwanda and the implementation of strict restrictions in March 2020 (rate ratio [RR] = 0.76; 95% CrI: 0.66 - 0.88). It worth noting that the data also showed that there was a significant positive trend change (RR=1.07; 95% CrI: 1.05-1.09).; the rate of circumcision increase over time.

Interpretation: Voluntary medical male circumcision was the HIV prevention program most immediately impacted. The trend rapidly reversed, and we observed a positive trend surpassing the projected number of individuals aged 15 years and above using the service. These feats warrant a new study to understand how the Rwandan HIV program was able to adapt to inform and prepare other programs in the case of a new pandemic.

183. Effects of School Closure During Early COVID-19 Pandemic in an Informal Settlement in Nairobi, Kenya: Experiences and Key Lessons to inform Future Responses

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Background: The early phase of the COVID-19 pandemic led to the widespread closure of learning institutions globally, including in informal settlements where unique challenges were encountered. Understanding these challenges and responses is vital since disruptions exacerbate already existing disparities within the education system but also in other aspects of their lives. This abstract examines the specific challenges faced by informal settlement resident in Nairobi, Kenya, and the negative effects following schools closure.

Methods: We draw data from qualitative findings in a convergent mixed methods study conducted in December 2020. Source and method triangulation was applied, with purposive sampling to select informants. A total of 30 in-depth interviews (IDIs) with caregivers/parents and 15 key informant interviews (KIIs) with community representatives were conducted until saturation. Data were transcribed verbatim, translated where necessary and categorized into themes in line with the study objectives. The findings were presented in narrative form and supported by verbatim quotes.

Findings: School closure carried high negative social and economic effects. Parents and caregivers cited high economic costs, with those working missing work to take care of their children and resulting in wage loss. They also perceived children being out of school as extra burden, with limited resources to sustain them home, and food cited as a leading challenge. For working parents who rely on schools as safe spaces, discipline and safety concerns for adolescents were expressed with fears of exposure to risky behaviours, increased influence of peer pressure and substance abuse. There were fears of interrupted learning, concerns of stagnation, and delay in class progression. Parents and caregivers also expressed concerns on increased exposure to violence and exploitation with perceived increase in sexual abuse for the girlchild, including rise in teenage pregnancies becoming more common. Community representatives had concerns relating to the risk of children not going back to school, a rise in dropout rates, and the challenge of ensuring children and youth return and stay in school when they reopen after closures.

Conclusion: The experiences of this informal settlement shed light on the critical role of schools in marginalized communities and the need for targeted support during crises. There is need for localised initiatives, community involvement, and innovative strategies on effective and inclusive educational policies that address the needs of informal settlement residents during periods of pandemic vulnerability.

184. Estimation of the Impact of COVID-19 on All-cause Mortality in Uganda during April 2020 to March 2022

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Background: By February 2022, COVID-19 had caused more than 5.8 million deaths globally. Understanding the impact of COVID-19 on population mortality is vital for planning for future epidemics. We estimated excess mortality during the COVID-19 period in Uganda.

Methods: A mortality survey was conducted using household, parental and sibling methods in March 2023 in 14 randomly-selected districts in Uganda. We used multistage sampling (district, village and household) to select households. Household heads were interviewed about current and previous household member demographics and household deaths from 2017–2022 and asked them and their spouses about parental and sibling deaths. We recorded the number and ages of household members each year, including survival status (date of and age at death if died). Baseline death rates were derived from pre-COVID-19 (2017–2019) deaths and COVID-19-period deaths (2020–2022). We computed death rates by dividing all-cause deaths by the number of person-years. All-cause excess mortality was determined by comparing pre-COVID-19 and COVID-19 period death rates. All analyses were weighted to account for the multistage sampling.

Results: We accessed 6,153/6,532 targeted households with 33,893 household members. During 2017-2022, 693 household members died; 397 (57%) were males. The most common causes of death overall were malaria (42), cancer (40), and stillbirths (33), and COVID-19 (25). Cancer caused more deaths in 2020-2022 than in 2017-2019 (4.4 vs. 1.9/10,000 person-years, $p=0.004$). Death rates/1,000 person-years were non-significantly higher in 2020-2022 than in 2017-2019 for household deaths (4.2 vs. 3.2, $p=0.06$), higher for parental deaths (24 vs. 18, $p=0.002$) and higher for Sibling deaths (2.4 Vs. 3.2, $p=0.013$) between periods.

Conclusion: Excess mortality occurred in Uganda during COVID-19 pandemic, including mortality from COVID-19 and non-COVID-19 causes. Attention to continuity of routine health care may be warranted during similar future pandemics, with focus on the older population to minimize preventable deaths.

Sub-theme 4: Harnessing digital technologies for preparedness and responses to communicable and non-communicable diseases

185. Sickle Cell Disease Online Awareness and Learning

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Background: Sickle cell disease (SCD) is the most common inherited hemoglobin disorder globally. Surveillance in 2015 found 13.3% of Ugandans to be carrying the sickle cell trait United Nations-2009 recognized SCD as a global health problem; urged global health systems to build capacity to control the disease and do more research. WHO recommended member-states to have implemented SCD prevention and control programs like health education training, public awareness, screening by 2020. Unfortunately, Uganda has not implemented these; mostly medical education thus increasing Sickle cell-related deaths from poor management, hence the need for establish the educational training and learning Sickle cell Disease Infonet student-based initiative at MUST started in February, 2022 designed an online program to conduct online training on different aspects of SCD and patients.

Purpose: To promote online educational learning, awareness and knowledge about Sickle cell diseases among medical schools thus improve the healthcare quality for Sickle cell patients amidst the COVID-19 pandemic.

Methods: 6 online zoom teaching sessions were done on, SCD and Mental health session basics of SCD, SCD and herbal medicine, nutrition and sickle cell, student life and Sickle cell. from June 2022 to November 2022. Participating institutions were Gulu university, Kabale University, Makerere University, Busitema university, KIU, King Caesar University, Lira University, BSU, lira University, IUIU and MUST. Knowledge and awareness were assessed using self-administered questionnaires after every session.

Results: Average session attendance was 48 participants. From post session surveys, moderate to high level knowledge was acquired on comprehensive understanding of SCD, multidisciplinary approach to management and care of Sickle cell patients, attitude and practices about SCD, moderate awareness was created among medical schools on SCD burden in Uganda and Inter-institutional relations through online interaction was achieved.

Conclusions: There is demanding need to increase awareness, knowledge and better practices on SCD in institutions through online medical training.

186. Enhancing Digital Mental Health Research Through User Centered Design

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Introduction: Digital mental health research has faced challenges in implementation and sustainability in low- and middle-income countries. The bottleneck is attributed to poor infrastructure, unfriendly user systems and lack of skills to manage the system. Setting up infrastructure that is user centered is likely to speed up digital mental health research in the region.

Objective: To examine participants' perception on how user centered design has shaped their experiences and acceptability of mental health research.

Methods: We conducted qualitative in-depth interviews among 21 health care workers, 6 doctors, 13 nurses and 3 ancillary who had participated in a mental health longitudinal pilot study for one month. The study participants were using mobile applications to record daily mood, anxiety, depressive symptoms, and suicidality. A Fitbit inspire 2 fitness trackers also recorded their sleep patterns, cardiac frequency, and physical activity. Participants provided their experiences for participating in the study.

Results: Three major themes emerged; user friendliness, behavior change and self-applied interventions. 19/21 Participants found the instructions on how to operate the digital technology to be clear and easy to follow, which motivated them to complete the process of enrolling for the study. Being able to receive their data in real time and tracking their indicators on a dashboard was a motivator to adhere to the study. Participants became more curious and tracked additional indicators besides what the study was conducting, they reported to become more self-aware due to the daily reflections.

Conclusion: Applications developed through user centered design are more acceptable to participants as they feel they are part of the research process, and it reduces technical hitches that discourage participants from proceeding with the study. Ability to receive real time data increases possibility of prompt treatment seeking.

187. Bridging Gaps, Ending HIV by 2030: Leveraging mHealth for Self-Management, Stigma Reduction and Equitable Access in Nigeria

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Background: Public health systems have not adopted an inclusive mobile health (mHealth) application strategy in self-management of HIV as a tool to ending HIV by 2030, despite the gaps in diagnosis, testing and ART adherence in HIV high-prevalence countries. We explore the extent to which a mHealth supports self-management and access to care in Nigeria.

Methods: BSmart Chart App (BSCA) is an artificial intelligence-driven, user friendly, innovation that supports the complete HIV cascade. It covers prevention, helps locate missing clients (1st 95), facilitates treatment linkage (2nd 95), promotes retention, and reduces stigma and discrimination through continuous monitoring (3rd 95). BSCA was deployed in four health facilities across Lagos, Jos, Abia and Ekiti states. We used a cross-sectional design, and a structured questionnaire among randomly selected eighty-three people living with HIV (PLWH) (≥ 18 years) and eleven HIV service providers (HSP). Data was anonymously analyzed using the Kano model.

Results: In our study population, most were females (72.3%) and aged 25-54 (81.7%). The HSP have ≥ 10 years of experience rendering HIV services (81.9%) and were aware of digital health tools (90.0%). The results indicated that most HSPs used BSCA to improve retention especially among the youths and key populations (100.0%). BSCA supported self-management in many ways, e.g., disclosure of HIV status (81.8%), ART prescriptions (79.0%), up-to-date messages on HIV (88.9%), co-medication (76%), and data confidentiality for their clients (100.0%). PLWH adopted BSCA for monitoring health outcomes, including viral loads and cardiovascular disease risk (88.0%), improving ART adherence (82.0%), and real-time connections with healthcare workers (79.0%), and peers (70.0%).

Conclusion: The right mHealth can efficiently support the public health system in managing HIV, especially when developed with users in mind. Thus, empowering HSP and PLWH with an inclusive mHealth strategy is imperative in leaving no one behind to end HIV by 2030.

188. Clinical and Computed Tomography Features of COVID-19 Pneumopathy at Kira Hospital in Bujumbura

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Background: Lung involvement was common in covid-19. In Burundi, as in other countries, thoracic computed tomography has played a significant role in the management of Covid-19 pneumonia. In our study, we describe the clinical and computed tomography (CT) aspects of COVID-19 pneumopathy at Kira Hospital

Patients and methods: This was a retrospective, descriptive study covering one year in the Radiology Department of Kira Hospital and involving 393 patients tested positive for COVID-19 and underwent a thoracic CT scan. The data was collected using a survey form drawn up in advance and analysed using SPSS software.

Results: The mean age was 54 ± 13 years, with extremes of 19 and 89 years. Male patients accounted for 55.37% of cases. Patients in the 45-59 age group accounted for 37.58% of cases. Arterial hypertension (21.14%) and diabetes (16.11%) were the comorbidities found. Clinical symptoms were dominated by cough (45.49%), dyspnoea (35.07%), desaturation (43.12%) and fever (27.01%). Blood oxygen saturation, on arrival, averaged $91.8\% \pm 8.2\%$. Lung lesions were found in 347 patients (88.30%) after CT examination. Interstitial (67.70%) and alveolar (37.70%) lesions were the most common. They were bilateral in 93.89% of cases and peripheral in 71%. Lesions covered more than 50% of the lung volume in 44.48% of cases. At the follow-up CT scan, 22 patients had worsening lesions. There were 28 cases of death (7.12%). Death occurred in the setting of respiratory distress.

Conclusion: Computed tomography is very useful in the management of Covid-19 patients with signs of respiratory distress. The lesions are essentially interstitial, bilateral and peripheral, with moderate lesion extent.

189. Trends and Distribution of Severe Malaria Cases, Uganda, 2017-2021: A Descriptive Analysis of the Health Management Information System Data

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Background: Malaria remains the largest contributor to morbidity and mortality among children < 5 years in Uganda. We evaluated the trends and distribution of severe malaria from 2017 through 2021 to inform progress on current interventions to reduce malaria morbidity and mortality in the country.

Methods: We used secondary data from monthly malaria surveillance reports from the District Health Information System (DHIS2) for 2017-2021. Severe malaria was defined as any admission with confirmed malaria (by microscopy or rapid

diagnostic test). We calculated the proportions of malaria cases that progressed to severe malaria for each year using severe malaria cases as the numerator and total outpatient malaria cases as the denominator. We used Mann Kendall test for trend analysis to determine the trends and significance was considered at $p < 0.05$).

Results: Overall, 2,957,672 severe malaria cases were reported; severe malaria cases as a proportion of all malaria cases decreased by 10% annually from 7.0% in 2017 to 5.0% in 2021 ($k\tau = -0.89$; $p\text{-value} = 0.07$). The proportion among children < 5 years reduced from 13% in 2017 to 10% in 2021 while that for > 5 years reduced from 4.4% to 3.5% ($k\tau = -0.08$; $p\text{-value} = 0.09$). The proportion for females reduced from 6.1% in 2017 to 4.6% in 2021 while males reduced from 7.2% in 2017 to 6.0% in 2021 ($k\tau = -0.08$; $p\text{-value} = 0.09$). Among the 15 regions, Karamoja and Tooro regions had a significant reducing trend in severe malaria cases over the years ($k\tau = -0.95$; $p\text{-value} = 0.04$). North central and Bukedi regions registered no trend ($k\tau = 0.0$; $p = 1$), all other regions registered non-significant reductions just like the national picture. At health facility level, regional referral hospitals ($k\tau = 0.06$; $p\text{-value} = 0.22$) and private clinics ($k\tau = 0.2$; $p\text{-value} = 0.81$) had a non-significant increase while all other health facility levels had non-significant reductions. Both private and public health facilities ($k\tau = 0.4$; $p\text{-value} = 0.46$) had non-significant increases.

Conclusion: The proportion of severe malaria cases nationally declined slightly over the review period suggesting slight progress in the control and management of uncomplicated malaria. However, Karamoja and Tooro regions experienced significant decreases. Strengthening efforts to improve management of uncomplicated malaria in the whole country could reduce the incidence of severe malaria in Uganda.

190. Going Virtual: Experience with Conducting Virtual Visits during COVID-19 Lockdown in Kampala Uganda

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Background: With covid-19 restrictions including country lock down, in person data collection for research was hindered. Virtual data collection and phone call-based interviews have been progressively used in multi-staged research studies globally. We describe our experience of virtual data collection after suspension of study clinic visits for participants in the Single dose liposomal amphotericin for asymptomatic cryptococcal antigenemia (ACACIA) trial during lockdown between March 18th 2020 until June 4th 2020.

Methods: The ACACIA trial is a randomized controlled trial of asymptomatic cryptococcal antigen (CrAg)+ persons where participants are randomized to preemptive treatment with 1 dose of liposomal amphotericin (10mg/kg) in addition to standard of care fluconazole vs standard of care fluconazole alone. During the lock down period, we conducted virtual activities such as follow-up visits for participants. This involved 3 stages: before, during and after obtaining the study data. Stage-1: (Pre-data collection) entailed making phone calls to all the monthly scheduled clinic participants at the beginning of the month and informing them about the virtual data collection. Stage-2: Involved confirmation of the participants' identity in line with the information reported at study enrollment. Data were collected and entered onto paper case report forms (CRFs) in real time. Stage-3 involved conducting Quality Assurance and Quality Control (QA/QC) on the data collected and later scanning of the completed CRFs and faxing data into the DFdiscover with use of DFsend software.

Results: We contacted 196 participants over 10 weeks, 186 (95%) of these participated in virtual visits, 50 (26.7%) had relocated to out-of-study catchment area. Nine (4.6%) had been chronically missing physical clinic visits, 159 (81%) of the virtual visit participants reported being always ready for the virtual visits. Virtual visits could be conducted at a convenient time for the participant, those who are out of the catchment area and those that had missed their previous study visits could be contacted and their data collected virtually.

Challenges included; poor/unstable phone network, long-phone calls for both participants and study staff, unreachable participants, busy participant work schedules, preference of face-to-face interaction for better emotional expression.

Conclusion: Conducting research study visits virtually is a data collection method worth incorporating within clinical trial conduct as a means to improve participants' follow-up and acceptable outcomes and largely, virtual data collection is feasible.

Sub-theme 6: Traditional and herbal medicines use, practices and believes during COVID-19 Pandemic

191. Use of Herbal Medicines for COVID-19 Management: Perceptions, Attitudes and Practices of Healthcare Profession Students in Uganda

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Background: Use of herbal medicine (HM) for the treatment and prevention of the coronavirus disease -2019 (COVID-19) has been reported worldwide. In this study, we aimed to assess the perceptions, attitude, and practices of health profession students (HPS) in Uganda concerning HM use in COVID-19 management during the second COVID-19 wave.

Methods: We conducted an online, cross-sectional study using quantitative methods among HPS across the 12 medical schools in Uganda. Undergraduate HPS from 1st to 5th year of study, pursuing various programs were recruited. Blooms cut-off of 80% was used to determine good perception and positive attitude towards HM use.

Results: Overall, 350 participants responded. Of this, 223 (63.7%) were male. The median age of all participants was 23 (IQR=19-56) years. Majority (n=234, 66.9%) were pursuing Bachelor of Medicine and Bachelor of Surgery (MBChB). All participants reported awareness on HM use for COVID-19 management. Fifty-four (15.4%) respondents had a good perception towards HM use. 43 (37.1%) of those who tested positive for COVID-19 had used HM. 207 (69.7%) participants had advised a friend or relative to use HM for COVID-19 treatment. Participants pursuing Bachelor of Pharmacy (BPHAR) had 4.2-fold higher odds (OR: 4.2, 95% CI:1.8-9.9, p=0.001) of having a positive attitude towards HM use compared to those pursuing MBChB and those in first year had 2.7-fold higher odds of having a positive attitude towards HM use compared to participants in fifth year of study. (OR=2.7, 95% CI=1.2-6.3, p=0.019). Participants with positive attitude (OR=63.7, 95% CI=12.8-316.4, p<0.001), good perception towards HM use (OR=3.3, 95% CI=1.6-6.5, p<0.001), and pharmacy students (OR=2.6, 95% CI=1.1-6.4, p=0.035) were more likely to recommend HM use for COVID-19 management.

Conclusion: Despite a high proportion of the HPS reporting negative perception and attitude towards HM use, at least one-third used or recommended HM for COVID-19 treatment. Incorporating course units about complementary medicine in the medical curricular could give better evidence-based patient guidance on the safe use of complementary medicine for the best treatment outcomes both currently and in case of future times of treatment uncertainty.

192. Effectiveness on Use of Traditional Medicines in Ameliorating COVID-19 Symptoms in Dar es Salaam, Tanzania

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Introduction: The use of traditional medicine to address COVID-19 symptoms in Tanzania was widespread based on government promotion in 2019. In this paper we present Tanzanian experience in the use of traditional medicines in the treatment and prevention of COVID-19 in the main city of Dar es Salaam.

Objectives: To identify traditional medicines used to treat COVID-19 symptoms and explore the perceptions, beliefs on effectiveness of public use of these products.

Methods: This study used qualitative data collection methods in Dar es Salaam, being the largest city with the highest rate of infections during the first COVID-19 wave. Study population included pharmacists, local vendors, scientific experts, health policy and most importantly, the public. We conducted key informant interviews, in depth interviews, and focus group discussions to gather this information. Thematic content analysis was used to analyze the data

Results: Nineteen herbs were identified as ingredients commonly used in addressing Covid 19. In addition, forty-eight participants were involved in this study and they highlighted significant growth in the use of traditional methods when the COVID-19 outbreak began in 2019. The main reasons for increased use were government under late President Magufuli instrumentality in promoting traditional medicines during this era, lack of effective biomedical solutions, and ability of traditional medicines to reduce fear and worry among the general public.

Conclusion: This paper is a documentation of most common herbs and products used during this era. The public testimonies show the effectiveness of use of traditional medicines in treating COVID-19 infection. In situations of lack of biomedical treatment, use of traditional medicines is important in ameliorating symptoms in prevention and treatment as revealed in this study as many people were helped during Covid 19 outbreak in Tanzania.

193. Prevalence of Herbal Medicine Use for Maternal Conditions in Tanzania: A Systematic Review and Meta-Analysis

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Background: In Tanzania, the prevalence of herbal medicine uses for managing maternal conditions varies between local communities. These variations affect policymakers, regulators, and healthcare practitioners' ability to make informed decisions on maternal healthcare. Hence, this meta-analysis synthesizes the prevalence of herbal medicine use for maternal conditions among local communities in Tanzania.

Objectives: The Overall objective of the study is to determine the pooled prevalence of herbal medicine use for managing maternal conditions in Tanzania. Other outcomes include establishing the spatial distribution of herbal medicine use for maternal conditions.

Methodology: Authors searched for published articles in PubMed, Google Scholar, Embase, African Index Medicus, CINAHL, and Scopus databases from inception to August 2023. Two independent reviewers assessed the risk of bias among included studies using the JBI critical appraisal tool. The prevalence of herbal medicine use for maternal conditions was pooled using the random-effects model. Subgroup, sensitivity, and meta-regression analyses were performed to explore the source of heterogeneity. The QGIS software used to display spatial distribution of medicinal herbs usage in Tanzania.

Results: About 19 studies with 5061 women were included. Overall, the pooled prevalence of herbal medicine use for maternal conditions was 47% (95% CI: 36% - 59%). The northern zone had the highest prevalence, at 88%, whereas Zanzibar had the lowest, at 8%. Furthermore, herbal medicines were frequently used during pregnancy, at 75% than in other stages. Labor induction was the leading maternal condition managed by herbal medicines, at 32% followed closely by the shortening of labor duration, at 26%.

Conclusion: The prevalence of herbal medicine use for maternal conditions is high, this implies that for every five Tanzanian women, at least two are using herbal medicine to manage a variety of maternal conditions. These findings highlight the need to enhance regulatory control of herbal medicines to ensure its quality and safety. Also, the provision of healthcare services among women should consider their history of herbal medicine use to avoid drug interaction. Systematic review registered at PROSPERO with ID CRD42023410082.

194. Exploring the Utilization and Attitudes towards Herbal Medicine Amidst the COVID-19 Pandemic: A Cross-Sectional Study among Postgraduate Lecturers and Students in Kenya

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Background: In the wake of the unprecedented global COVID-19 pandemic, societies around the world have been confronted with an urgent need to explore alternative approaches to healthcare. Amidst the chaos and uncertainty, herbal medicine has emerged as a topic of renewed interest and significance. With historical roots stretching back centuries, herbal remedies have been an integral part of cultural and medical practices across diverse communities. As the pandemic prompted a surge in health-related concerns, many individuals turned to these age-old practices in search of preventive measures, symptomatic relief, and holistic well-being.

Objective: The study aimed to investigate the prevalence and utilization patterns for herbal medicine use, factors associated with herbal medicine use, and attitudes towards herbal medicine among the postgraduate lecturers and students during the COVID-19 pandemic.

Methods: A cross-sectional online survey was conducted on 117 postgraduate lecturers and students across institutions of higher learning and research in Kenya between January and March 2021. Descriptive statistics and chi-square tests were performed using SPSS software to achieve the objectives of the study.

Results: About 60% of the respondents reported using herbal medicine for common ailments during the COVID-19 pandemic. The prevalence of herbal medicine was closely related to the field of study/research, religion, marital status, region, monthly income, and perception of health status. Ginger (*Zingiber officinale*), Garlic (*Allium sativum*), Turmeric (*Curcuma longa*), Lemon grass (*Cymbopogon citratus*), honey, neem (*Azadirachta indica*), Aloe vera, black seed (*Nigella sativa*), sugarless black tea, and herbal teas were the most commonly used herbal medicines mainly for the treatment of fever, muscle aches, sore throat, cough, and nasal congestion. Approximately 80% of the participants believed herbal medicines to be very safe, to have fewer side effects than allopathic medicines, and to be effective for mild health ailments.

Conclusion: The study presents a comprehensive perspective on how postgraduate students and lecturers in Kenya navigated herbal medicine during the COVID-19 pandemic. It contributes to the ongoing discourse on traditional healthcare practices, shedding light on the interplay between academic knowledge and personal beliefs.

195. Use of Intellectual Property System among Traditional Medicine Knowledge Holders and Practitioners in Tanzania

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Background: Sales of traditional medicine-based products provide important sources of income for local communities and can give them incentives to preserve their traditional knowledge and biodiversity resources. Thus, protecting intellectual

property arising from the use of traditional medicine knowledge is an important part of the process of bringing innovations to the market place. However, in Tanzania it is not known to what extent traditional medicine knowledge holders and practitioners are aware of and use the intellectual property systems.

Objective: This study aimed at exploring factors which influence use of intellectual property system among traditional medicine knowledge holders and practitioners in Tanzania.

Methods: Face to face and over the phone in-depth interviews were conducted with 12 traditional medicine knowledge holders and practitioners. The interviews focused on awareness and use of intellectual property systems, and factors which make traditional medicine knowledge holders and practitioners hesitate to use of intellectual property systems.

Results: Majority of the interviewed traditional medicine knowledge holders and practitioners were aware that there are intellectual property offices in the country but only 2 out of 12 have ever used intellectual property systems. Of those, 1 used intellectual property offices out of Tanzania. Costs, and mistrust and lack of understanding on how the system work emerged as main bottlenecks to the use of intellectual property system.

Conclusion: Awareness and knowledge on intellectual property systems among traditional medicine knowledge holders and practitioners in Tanzania is low, causing fear of disclosing to the intellectual property offices.

196. Traditional and Herbal Medicines Use among Prostate Cancer Patients in Kenya during the Era of COVID-19 Pandemic: Case of the Kenyatta National Hospital

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Introduction: The world is currently facing an unprecedented rise in health challenges, some in the form of pandemics and epidemics of a wide range of diseases. The rise of communicable and non-communicable diseases necessitates the search for diverse approaches to their treatment and management. Traditional Herbal Medicines and medicinal plants have played a pivotal role in the past as sources of therapeutic preparations, and in some cases, their isolated compounds have served as templates from which some of the current drugs have been synthesized. As witnessed during the wake of the recent COVID-19 Pandemic, use of herbal preparations such as *Allium sativum* (garlic), *citrus spp.*, *Ajuga remota* among others were widely used in its management. Use of complementary and alternative medicine (CAM) is commonly employed to address a variety of diseases including cancer. Nonetheless, a comprehensive lack of documentation characterizes this practice.

Objectives: To determine the prevalence, knowledge, attitudes, pattern of use and factors influencing decision making regarding CAM use in Prostate cancer (PCa) patients.

Methodology: Descriptive cross-sectional study was conducted from June to November 2020 at the oncology clinic at the Kenyatta National Hospital; Kenya's largest referral hospital using a structured questionnaire. The survey determined factors associated with CAM use and participants' socio-demographic profile. The total study population was 274 male respondents.

Results: Among the 274 respondents aged from 56 to 93 years (mean=71.6) were interviewed. 52.2% were on chemotherapy, 20.8% radiotherapy and 16.8% both treatments. 31.4% (n=86) included CAM in their treatment. Special diet and Herbal medicine (63.0% and 59.3% respectively) were the most frequent CAM used. Majority (70.9%) of CAM users cited the hope to alleviate their condition and symptomatic relief as the reason for use. Among the CAM users, 76.7% were satisfied with using CAM and would recommend CAM to other PCa patients. Notably, 75.6% of the CAM users had not disclosed the use of CAM to their medical doctors.

Conclusion: Prevalence of CAM use among PCa patients in KNH was moderate at 32%. The most common type of CAM in use was herbal products sourced locally such as moringa and Aloe vera. The level of satisfaction from CAM intervention among users was high. Most patients do not disclose CAM usage to their conventional health providers.

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