

# ABSTRACT BOOKLET



UNIVERSITY OF NAIROBI

## 7<sup>th</sup> AFREhealth ANNUAL SYMPOSIUM

Theme: Progress towards SDGs in Africa:  
Celebrating Milestones and  
Overcoming Challenges

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### **SUBTHEME 1: Harnessing Digital Technology and Innovation for Health Professions Education towards attainment of SDGs**

**Title: Medical students' experiences with ChatGPT and other AI tools in education: a qualitative Study**

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### **Background:**

ChatGPT and other Artificial Intelligence (AI) tools are powerful tools with the potential to transform medical education. Evidence reveals that medical students are actively using them in education. However, there are concerns that medical students could be using ChatGPT and other similar AI tools to cheat in assignments. Currently there is no reliable way to differentiate between ChatGPT written text and human written text. This poses a great challenge to educators when marking essays.

### **Objective:**

To explore experiences of medical students using ChatGPT and other AI tools in education in order to inform the design of guidelines for responsible use of AI tools.

### **Methods:**

This was a qualitative study among medical students at Busitema University, in eastern Uganda borrowing upon the phenomenological strategy of inquiry. We conducted five focus group discussions comprising of 8-10 participants and 7 in-depth interviews. Participants were purposively chosen across all courses and study years. The data were analysed using thematic content analysis with the aid of Atlas ti.9 software.

### **Results:**

A total of 49 participants participated. Four sub themes emerged from the analysis including awareness about AI tools, perceived benefits of AI tools, fears regarding AI use, and recommendations for responsible use of AI. Participants cited friends, family, lecturers and social media as their source of information about AI. Perceived benefits included easy access to information, time saving, summarizing and simplifying information, academic and non-academic support. Fears regarding use of AI tools included unreliable information, generalized answers, nonspecialized to medical education, kills creativity, promotes laziness and being addictive. Recommendations for responsible use were using AI as a supplement to traditional modes of learning, limiting online exams, and use of AI software detectors.

### **Conclusion:**

Participants had positive perceptions about use of AI but also expressed fears regarding its use in medical education. Structured curricula, formal policies and guidelines are needed to adequately prepare medical students for the integration of AI in medical education.

**Title: A digital neonatal clinical decision support tool, PRISMS reduces in-facility neonatal mortality despite COVID-19 disruptions in rural South Western Uganda.**

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**Background**

Neonatal mortality remains high in many low and middle-income countries (LMICs). Neonatal clinical care in these LMICs is often provided by health providers with limited training in neonatal care who are often challenged with clinical decision making. We aimed to evaluate the effect of a clinical assessment framework and decision support algorithm, called PRISMS, on in-facility neonatal outcomes in Ugandan health centers.

**Methods**

We conducted a cluster randomized trial at 36 health facilities in southwestern Uganda over 12 months. The intervention arm received Protecting Infants Remotely by SMS (PRISMS) technology for use in routine neonatal assessment and management. Health care providers in both intervention and control arms received Helping Mothers Survive (HMS), Helping Babies Survive (HBS), and peer to peer learning. Planned quarterly onsite post training mentorships delayed due to COVID related travel restrictions. The secondary and primary outcome measures were rates of neonatal referral and in-facility mortality.

**Results**

In 18 intervention centres, PRISMS average monthly utilization rate was 30% (Range: 22% - 100% per month) for the regional referral hospital, 12.5% (Range: 8 - 17% per month) for district hospitals and 21% (Range: 3% - 66% per month) for health center IV facilities. Due to covid-19, mentorship happened once at the 11th month. The likelihood of referral was nearly twice in the intervention compared to control facilities with an odds ratio of 1.845 (95% CI: 1.55 - 2.19). In the intervention arm, the risk of death was 20% lower compared to the control arm with an odds ratio of 0.808 (95% CI: 0.68-, 0.949).

**Conclusion**

The use of PRISMS for neonatal clinical assessment and management is associated with a higher referral rate and lower in-facility mortality.

## **Title: Virtual Reality as a Nonpharmacological Strategy in Pediatric Pain Control During Procedures with Needle Use**

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### **Background and Objectives**

Needle procedures can be very painful for children and generate stress and anxiety. Healthcare professionals therefore are strongly encouraged to use pharmacological and nonpharmacological strategies to prevent pain associated with needle use. As a nonpharmacological strategy, virtual reality (VR) has been used to enhance a child's distraction for pain control during these procedures. VR is an immersive experience characterized by the possibility of transporting children to a three-dimensional scenario that incorporates an environment completely different from the one where they are located. It may use goggles, headsets, or a helmet to immerse the patient in this alternate VR. This study aims to identify the advantages and limitations of VR used for pain control in procedures using needles in pediatrics.

### **Methods**

This integrative review followed a six-step methodology: (a) research question, (b) search of the literature, (c) categorization of the studies selected, (d) evaluation of the selected studies, (e) results interpretation, (f) and presentation of reviews.

The research question followed the PICO strategy: "What are the advantages and limitations of VR used for pain control in procedures requiring needle use in pediatrics?" Studies were limited to children aged 4–18 years undergoing a procedure involving needles and the use of VR with goggles, headset, or helmet. A comprehensive search strategy using CINAHL Complete, MedicLatina, Medline Complete, B-on, LILACS, and SciELO databases was undertaken to find relevant studies published from January 2015 to April 2022. The retained studies included experimental and quasi-experimental, randomized controlled trials and on randomized controlled trials as well as prospective and retrospective studies.

### **Results**

The search yielded 80 articles. Of these, six articles met the inclusion criteria. Advantages found with the use of VR were (a) decrease of pain; (b) improvement of communication; (c) increased probability of success in performing the procedures; (d) reduction of anxiety, stress, distress, and fear; (e) easier handling of equipment; (f) almost complete isolation

of external noise; and (g) low cost, lightness, and ease of transportation. Disadvantages reported were goggles' size and annoyance from repeated play and the occasional side effect of nausea.

## **Conclusions**

VR is an interactive digital therapeutic toy used with positive effects in clinical practice. As children become calmer, VR can also reduce nursing stress and improve communication between children and nurses.

All studies mention that pain was significantly lower in children who experienced VR during procedures using needles. As a source of pain relief and prevention, VR is a promising technology offering a unique experience to children. Based on these six studies, a positive relationship was found between the use of VR during needle procedures and the reduction of pain. We suggest that the future primary studies take into account the developmental characteristics and child ages when implementing and evaluating VR interventions. Child age can influence the efficacy of VR use as a strategy to prevent pain during procedures using needles.

## **Title: The Student Ribbon: Empowering Students of Health Professions with a Platform for Health Education.**

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## **Background and Objectives:**

The Student Ribbon, an electronic newsletter launched in January 2023, addresses the lack of accessible and engaging health education resources for youth in Uganda. It also aimed to provide students of health professions with a platform to share accurate and credible health information with their peers.

**Description:**

The Student Ribbon is a bimonthly newsletter featuring articles written by students from 8 Ugandan medical schools. It covers often misunderstood health topics and includes interviews with inspirational health professionals. The content is fact-checked, cited from credible sources, and presented in an easily readable format. The newsletter is published on Issue and shared on social media platforms like Twitter and Whatsapp to reach the target youth audience effectively.

**Lessons learned:**

6 issues of the Student Ribbon have been published, focusing on sickle cell disease, cervical cancer, asthma, plastic pollution and health, and nutrition with articles written by over 30 students from nine different institutions in Uganda. This initiative has empowered students in health professions to actively participate in health education, improving their confidence, writing and communication skills. These issues have reached over 3000 readers by September 2023, equipping them with valuable health information and inspiring interest in health-related fields. Gathering feedback through online surveys and polls has allowed the newsletter to adapt its content based on the evolving needs and interests of its readers.

**Next steps:**

To further enhance its impact, the newsletter plans to collaborate with health organizations and explore partnerships with educational institutions for wider outreach by publishing printed and locally translated copies of the newsletter that can reach young people without smartphones, and those without English fluency.

**Conclusion:**

The Student Ribbon initiative has successfully empowered Ugandan health professions students with a platform and other youth with valuable knowledge and health education through its student-written articles and inspiring interviews with established health professionals. The project's adaptability based on reader feedback and its potential for future collaborations hold promising implications for improving health literacy among the youth population in Uganda.

**Title: Utilisation of ChatGPT and other Artificial Intelligence tools among medical faculty in Uganda: a cross-sectional study**

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### **Background:**

Chat Generative Pre-trained Transformer (ChatGPT) is an open-source large language model that uses deep learning techniques to generate human-like texts. ChatGPT has the potential to revolutionize medical education as it acts as an interactive virtual tutor and personalized learning assistant. We assessed the use of ChatGPT and other Artificial Intelligence (AI) tools among medical faculty in Uganda.

### **Methods:**

We conducted a descriptive cross-sectional study among medical faculty at four public universities in Uganda. Participants were recruited consecutively. We used a semi-structured questionnaire to collect data on participants' socio-demographics and the use of AI tools such as ChatGPT. Our outcome variable was the use of ChatGPT and other AI tools. Data were analyzed descriptively in Stata version 17.0. We conducted a modified Poisson regression to explore the association between the use of AI tools and various exposures.

### **Results:**

We recruited 224 medical faculty, majority [75% (167/224)] of whom were male. The median age (interquartile range) was 41 years (34-50). Almost all medical faculty [90% (202/224)] had ever heard of AI tools such as ChatGPT. A total of 142 out of 224 participants (63.4%) had ever used AI tools. The most commonly used AI tools were ChatGPT (56.3%), Quill Bot (7.1%), Desktop AI (6.3%), and Bing AI (4.9%). 56 faculty used AI tools for research writing, 37 for summarizing information, 28 for proofreading work, and 28 for setting exams or assignments. Forty faculty used AI tools for non-academic uses such as recreation and learning new skills. Faculty older than 50 years were 40% less likely to use AI tools such as ChatGPT as compared to those aged 24 to 35 years (Adjusted Prevalence Ratio (aPR):0.60; 95% Confidence Interval (CI): [0.45, 0.80]). There was variation in AI use across universities with medical faculty at Makerere University being 32% less likely to use AI tools as compared to those at Gulu University (aPR: 0.68 95% CI: [0.60, 0.78]).

### **Conclusion:**

The use of ChatGPT and other AI tools was high among medical faculty in Uganda. Older faculty (>50 years) were less likely to use AI tools compared to younger faculty. Training on AI use in education, formal policies, and guidelines are needed to adequately prepare medical faculty for the integration of AI in medical education.

### **Keywords**

ChatGPT, medical faculty, Bing, Bard, Uganda, generative AI, medical education

**Title: An assessment of self-directed learning among undergraduate health care professionals from three higher education institutions in Malawi**

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**Introduction:** Self-directed learning (SDL) is a critical competency for undergraduate health care professionals to achieve their professional development. Thus, it is an active process in which students take an initiative for their own learning regardless of the presence or absence of the support of their educators. In Malawi some stakeholders have voiced on the low performance levels of some undergraduates pointing the gaps in clinical learning environment. Self-directed learning approaches empower students to actively search for, examine, understand, and utilise information to achieve learning needs. However, some students find it challenging to acquire self-directed learning skills in clinical setting due to the dynamic nature of clinical environments.

**Objective:** To analyse self-directed learning abilities among the undergraduate health care professionals in practice.

**Methods:** A survey, part of sequential explanatory mixed methods design was deployed to uncover the undergraduates' self-directed learning abilities in clinical learning environment. Undergraduate students at level three and four were invited to participate in the survey. Simple random sampling was used to recruit 405 participants at level three and four from Kamuzu University of Health Sciences (KUHEs), Mzuzu University and Malawi College of Health Sciences (MCHS). Data were analysed using SPSS version 23.0 where the subscales of self-directed learning were quantified to find mean scores and standard deviations and the Cronbach alphas for SDL.

**Results:** There was an overall total mean score of 165.15 on the self-directed learning scores among the participants, this signifies presence of readiness for self-directed learning to navigate the clinical learning environment. Subscale mean scores showed that students had high scores on self-control (63.89±7.00) followed by self-management (52.08±6.00) and lastly self-desire for leaning (49.18±5.71). Overall, the Cronbach alphas for SDL was 0.85; with scores for subscales of SDL of self-control (0.72), self-desire for learning (0.63) and self- management (0.61). Students from MCHS had higher total mean scores (168.9), followed by KUHEs (163.8) then Mzuzu University (161.5). Students over 40 years of age had higher mean scores (177) and students aged between 15 to 20 had lower total mean scores (163). Further findings for the study revealed that 14. 1% (n=57) were not ready for self-directed learning reflecting a gap that can be supported with the use of clinical learning indicators.

**Conclusion:** The survey has revealed that the undergraduate health care professionals have self-directed abilities to enable them utilize clinical learning indicators guide learning in clinical practice settings. However, some students have minimal self-directed learning abilities reflecting the need for support in terms of guidance to navigate the landscape in the clinical learning environment. It is important that clinical learning among the undergraduate students should be structured to support self-directed learning. To this end, the use of clinical learning indicators should be promoted to advance clinical learning among undergraduate health professionals in clinical learning environment.

**Key words:** Self-directed, learner, clinical learning, clinical learning indicators

**Title: Quality Assurance of e-Learning in Health Sciences: The use of Project Based Learning (PBL) among Public Health students of Clarke International University, Uganda.**

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**Background:** In recent years, institutions of higher education have evolved and are providing students with both hard and soft skills, to enhance cognitive knowledge and professional skills, problem-solving skills, and teamwork (Vogler et al., 2018). From the onset of online learning, QA systems in online education have been designed to be preoccupied. Project Based Learning (PBL) stimulates learners to use correct disciplinary frames to identify a real problem, apply theories or clinical principles in a context relevant strategy to propose feasible solutions identified by the end of the course. PBL increases opportunities for learners to participate in sustainability projects that engage in critical and contextualized understanding of the Sustainable Development Goals (SDGs) in educational settings; This fosters educational innovations towards the realization of SDGs through community engagement, operations research and education (Cörvers et al., 2019). The study aimed at assessing online learning in health sciences with Project-Based interventions that created social interaction between experts (online tutors), Public Health students and the local community at Clarke International University (CIU); to construct sustainable and impactful solutions in Higher Education Institutions in Uganda.

**Methodology:** The case study employed a qualitative method of data collection in which Focused Group Discussion with 15 Public Health students and Key informant interviews with faculty instructors. Results: Five themes emerged from the study findings; PBL facilitates gain of confidence and retention of concepts; Participating in PBL improves skills, judgment and critical thinking; and PBL fosters teamwork and interdependence. Positive predictors: Students support

system and Quality Control while Negative predictors; High cost, poor internet connection and Community Attitude.

**Conclusion:** The use of online Project-Based Learning is a great strand of integration within educational practices and the idea of using real-world sustainable programs into student-centered learning. This will foster the attainment of SDG 4 by developing and making connections between Higher education and environmental, economic, social, and political systems; and envision a better future through creative problem-solving.

**Keywords:** Project Based Learning, Online Learning, Health Sciences, SDGs, Public Health Student.

**Title: Assessing the Perceptions and Practices of Community Pharmacy Workers in Harare Central Business District in Zimbabwe: A Cross-Sectional Survey.**

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### **Background:**

Antimicrobial resistance is a global public health concern that has led to increased morbidity, mortality, and healthcare costs. Community pharmacists play a critical role in the safe and effective use of antimicrobials by dispensing and providing advice to patients. However, inappropriate use of antimicrobials, including overuse, misuse, and underuse, can contribute to the development and spread of antimicrobial resistance.

Antimicrobial stewardship programs have been implemented to promote the appropriate use of antimicrobials and reduce the emergence of resistant organisms. Despite the importance of community pharmacists in antimicrobial stewardship, there is limited research on their perceptions and practices in low- and middle-income countries such as Zimbabwe.

Understanding the role of community pharmacists in antimicrobial stewardship and their perceptions and practices in low- and middle-income countries, as addressed in this study, is crucial for promoting effective and sustainable healthcare interventions in Zimbabwe.

### **Methods**

This cross-sectional study design was conducted among community pharmacists, pharmacy technicians, and dispensary assistants in their respective pharmacies around Harare Central Business District using questionnaires. Descriptive and inferential statistics were used to analyse the data. The study was approved by the Pharmacy Council of Zimbabwe and the Medical Research Council of Zimbabwe MRCZ/B/2442). The study prioritized data privacy through stringent measures such as secured data handling, storage, anonymization, and strict compliance with ethical guidelines and data protection regulations.

### **Results**

Among the 110 community pharmacy workers that participated it was found that 70% of community pharmacy workers consistently dispense antimicrobials with complete prescription information. However, a small portion (5.6%) dispenses antimicrobials without a prescription, indicating accessibility to antibiotics without proper prescription in community pharmacies. In

the context of participation in antimicrobial stewardship programs, while over 75% of individuals are engaged to some degree, a minority, specifically fewer than 30%, express confidence in their level of involvement. Approximately 25% rarely or never participate, highlighting the need for more programs targeting community pharmacy workers. The majority of participants (over 80%) believe that pharmacists play a pivotal role in antimicrobial stewardship and infection prevention and control. Furthermore, nearly 87% agree that attending relevant conferences, workshops, and educational activities is crucial for enhancing their understanding of antimicrobial stewardship. Additionally, factors such as patient counselling, skills and knowledge of prescribers, and inadequate supervision in medicine administration were identified as potential influences on poor antibiotic use and Handling.

### **Conclusion**

The study found that community pharmacy workers in Zimbabwe have positive perceptions of antimicrobial stewardship. However, there are still factors that contribute to irrational prescribing practices, such as patient demand for antibiotics, financial motives, and fear of losing clients.

### **Public Implication**

The study identifies that patient counselling might improve antimicrobial resistance awareness within patients, the importance of getting prescription and adherence with their medication. The study also give policy makers a leeway to allow community pharmacists to prescribe antibiotics for minor illnesses since they carry a lot of medical consultations as compared to physicians.

### **Title: Acceptance, Perceptions, and Attitudes of Medical Students and the General Population on COVID-19's Existence and Vaccination: A Comparative Cross-sectional Study**

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### **ABSTRACT.**

Due to its high mortality and rapid spread, COVID-19 has propagated around the world, affecting all continents, and has impacted several sectors of society. In DRC, poor barrier measures adherence and low vaccination coverage have been some of the challenges during COVID-19. Despite numerous data on the population's attitudes toward COVID-19 and the vaccine, no evidence explicitly defines the gap between medical students and the general population. This study aimed to evaluate and compare the acceptance, perceptions, and attitudes toward the existence of COVID-19 and the vaccine against COVID-19 between medical students and the general population. An onsite cross-sectional survey was conducted in late 2021 among medical students from the University of Kinshasa and the general population of Kinshasa. A 23-item questionnaire was administered to available and consenting participants as the convenience sampling was employed. The questionnaire focused on sociodemographic data, perceptions, and attitudes around COVID-19 and vaccine acceptance. Mann-Whitney U and Pearson chi-square tests were used to determine associations between different variables, and multivariate regression was used to determine

predictors of vaccine acceptance. Of the 439 respondents, 223 (50.8%) were medical students, and 181 (41.2%) were women. The median age was 23 years old. Overall, perceptions and attitudes were better among medical students. The acceptance rate of a free, approved, and effective vaccine was 51.5%, significantly higher among medical students ( $p < 0.01$ ). However, only 6.8% of the population reported having received the vaccine. Believing the vaccine is beneficial (OR=4.4; CI: 2.8-6.8;  $p < 0.001$ ), accepting that the vaccine is compulsory (OR=4.0; CI: 2.5-6.5;  $p < 0.001$ ), and believing the existence of COVID-19 in DRC (OR=3.1; CI: 2.0-5.0;  $p < 0.001$ ) were the most associated with COVID-19 vaccine acceptance. Awareness-raising actions, medical education, and access to information have a crucial role in managing health crises. More effective strategies are a priority to strengthen community engagement and adherence to the health measures established in the health policy.

**Key Words:** COVID-19, vaccine acceptance, perceptions, attitudes, medical students.

**Title: Development of an m-Health intervention to reduce loss to follow-up among patients undergoing treatment for cervical lesions at MRRH**

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**Background:** Loss to follow-up (LTFU) in individuals undergoing cervical cancer treatment is a major challenge. We describe development of a customized and tailored mHealth intervention for reducing LTFU among patients undergoing cervical cancer treatment at Mbarara Regional Referral Hospital (MRRH).

**Methods:** We interviewed all health care providers (HCPs) at the cervical cancer clinic of MRRH between April and May 2023 to understand challenges/facilitators of LTFU and develop an appropriate mHealth intervention to re-engage patients in care. Transcripts were derived, reviewed and coded to generate themes and categories using inductive content analytic approach. Four medical experts used this data to develop relevant SMS content, which was incorporated into an app designed through partnership with Ucatch Technologies Limited.

**Results:** The main challenge to re-engagement was absence a reminder mechanism between HCPs and patients. HCPs preferred text and or audio messaging to improve responsiveness to LTFUs. Key messaging content included; the importance of follow-ups, visit date, clinic and recipient customization. SMS content was uploaded onto the cc-follow-up app platform and customized according to preferred language, day, frequency and time of delivery.

**Conclusion:** Tailoring mHealth messaging interventions could be an important strategy to reduce LTFU. Our intervention's feasibility and acceptability needs to be evaluated.

**Keywords:** Mobile Health, SMS messaging, Cervical cancer treatment, loss-to-follow-up, Uganda

**Title:** Creating a parent-focused app promoting health in children aged five and under.

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**Objective:** To develop an application that assists parents in promoting the health of children under five years of age.

**Introduction:** According to the United Nations Inter-agency Group for Child Mortality Estimation, the global child mortality rate remains a significant concern, with 5 million children dying before reaching the age of five. However, it is essential to note that access to quality primary healthcare could prevent all these deaths (Biermann et al, 2017). In 2016, the World Health Organization

(WHO) underscored the potential of digital health in improving healthcare outcomes. The widespread accessibility of digital technologies enables the timely and widespread dissemination of health-related information. Therefore, mobile applications, as digital health technologies, have emerged as promising tools for promoting health equity and self-care due to their accessibility through smartphones (Biermann et al, 2017); Henni et al., 2022).

**Methods:** This qualitative study follows the Design Science Research (DSR) approach to elucidate the process of developing a digital application. Recognized as the optimal methodology for technological development research (Lacerda et al., 2013), DSR endeavors to address genuine societal problems by creating innovative artifacts (Lacerda et al, 2013). This approach involves eight distinct stages: 1) Identification and awareness of the problem, 2) Identification of stages and configuration of problem classes, 3) Design and development of the artifact, 4) Evaluation of the artifact, 5) Explication of learnings and conclusion, 6) Generalization to a class of problems, and 7) Communication of results.

**Conclusions:** The findings of this study make a valuable contribution to the pursuit of the third Sustainable Development Goal (SDG), which aims to ensure access to quality healthcare and promote well-being for individuals of all ages. Specifically, the objective of ending preventable deaths among newborns and children under five, as well as reducing neonatal mortality to 12/1000 and mortality among children under five to 25/1000 (United Nations, 2023), can be advanced through the active involvement of families throughout the research development process. This inclusive approach recognizes the significance of family engagement in constructing and implementing technology that can bring about meaningful improvements in child health and, most importantly, foster the overall well-being of children.

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**Title: Pompes à efflux et multirésistance aux antibiotiques des souches de Staphylococcus aureus isolées à Bamako, Mali.**

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**Staphylococcus aureus**, responsable des infections humaines, constitue un problème majeur de santé publique à cause de l'augmentation de sa résistance simultanée à plusieurs antibiotiques. L'expression des pompes à efflux est l'une des principales causes de cette multirésistance. La présente étude visait à étudier la résistance aux antibiotiques et rechercher les pompes chez les souches multirésistantes de *S. aureus*. La culture a été effectuée sur une gélose Chapman. Le Pastorex™ Staph-Plus a été utilisé pour l'identification des souches. Chaque souche fut confrontée à un test de sensibilité aux antimicrobiens par la méthode de diffusion sur gélose. L'interprétation des diamètres d'inhibitions a été effectuée selon CA-SFM (2022). La méthode de la roue de chariot au BET a été utilisée pour détecter la présence des pompes. Les gènes de pompes exprimés ont été recherchés par RT-PCR. Au total, trente souches de *S. aureus* ont été isolées principalement des suppurations, des voies nasales et des liquides pleuraux. Les staphylocoques méticillino-résistants (SARM) représentaient 60% des souches isolées. En effet, 86,7% des souches étaient résistantes à la pénicilline G, 70% à Triméthoprim. Une proportion variable des souches de SARM présentait une résistance à d'autres familles d'antibiotiques notamment la doxycycline et fosfomycine à 43,3 % respectivement, lincomycine à 36,7 %, erythromycine à 33,3 %, gentamycine et ciprofloxacine à 26,7 %, chloramphénicol à 20 % et vancomycine à 10 %. En somme, 43% des souches testées étaient multirésistantes et présentaient toutes une forte activité d'efflux. Les gènes *norA* et *norC* codant pour la résistance aux fluoroquinolones étaient exprimés chez 40%, tandis que le gène *norB* était exprimé chez 37% des souches testées. L'activité d'efflux n'étant pas spécifique à une pompe, sa présence chez les souches de *S. aureus* pourrait intervenir d'autres types de pompes expliquant leur multirésistance.

**Title: Evidence Based Practice and Critical Thinking in Nursing Education Scoping Review of Literature: Towards Integration into the BSc and MSc Nursing Curricula.**

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### **Background**

Evidence-Based Practice (EBP) in health is important for patient safety and quality care while Critical Thinking (CT) has been acclaimed as a vital prerequisite and a key element essential to evidence based nursing practice. Despite the importance of the two concepts, in some settings neither EBP nor CT is comprehensively taught, assessed or implemented in practice. This scoping review was conducted to examine literature related to teaching, learning, assessment and implementation of EBP and application of CT by nursing students and graduates to inform integration into the BSc and MSc Nursing Curricula.

### **Methods**

Arksey and O'Malley framework was used to conduct a scoping review of literature. A number of electronic data based were searched for the review including; CINAHL, PubMed, EMBASE and Joanna Briggs Institute EBP Data Base for studies conducted between 2000 and 2020. Only studies written in English were included. Inclusion criteria was adapted from the - Population, Intervention, Professionals and Patients, Outcomes, Health Care settings) (PIPOH) framework. Search terms included; evidence based practice, nursing education, nursing practice, critical thinking skills in nursing education and practice, methods, barriers, facilitators to teaching, learning, assessing and implementing EBP and CTS.

### **Results**

From the data bases searched 2,303 articles were retried, eventually 37 met the inclusion criteria for review. Use of non-traditional instructional methods for teaching EBP and CT have been documented including Problem Based Learning, concept mapping, simulation, think aloud, critical incidence technique, videos, debates and role-plays, reflective journaling and article analysis, simulation, nursing journal clubs and participation in multidisciplinary clinical rounds. Commonly used tools for assessing EBP and CT Skills include; California Critical Thinking Skills Test, Upton and Upton 2006 EBP questionnaire and Yoon's 2004 Critical Thinking Disposition Inventory. There are varying levels of EBP and CT application from different clinical settings with a number of challenges and distractors.

### **Conclusion and way forward**

Teaching and assessing EBP and application of CT skills has been reported to be challenging. Consequent to the lessons learnt from the scoping review, the BSc and MSc Nursing curricula at the University of Zambia were enhanced by inclusion of content on EBP and CT in research, and selected clinical, education and leadership courses. Further, innovative teaching methods were adopted to promote learning. Implementation of curricula changes will require on-going monitoring and application of strategies to mitigate challenges and minimize Detractors.

**Key Words:** Evidence-Based Practice Nursing, Critical Thinking, Teaching, Learning, Assessment, Scoping Review, Nursing Curricula.

## **Title: The Agility of Project ECHO as a Solution for Human Resources for Health Challenges in Africa: The Sudan ECHO Center of Excellence Experience**

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### **Background and Objectives**

Sudan, like many other low-middle-income countries has faced many challenges in responding to the covid-19 pandemic. The country is now facing challenges in responding to the health crisis created by the armed conflict. One of the most significant challenges is human resources for health (HRH). Project ECHO, an online tele-mentorship program has been shown to be effective in reducing healthcare disparities in low-resource settings in the US and globally. It was leveraged to train community-engaged healthcare workers (HCW) to address the HRH crisis. The objective of this paper is to describe implementation of a Sudan ECHO Center of Excellence platform and how it was utilized during COVID-19 and the armed conflict by providing digital tele-mentorship for HCW.

### **Description**

A collaboration between the University of Nebraska Medical Center, Project ECHO, the Federal Ministry of Health (FMOH), the Sudan Medical Specialization Board (SMSB), and the and the Community Medical Response Team (CMRT) was initiated in February 2021 leading to the launch of Sudan's first ECHO Program to train healthcare personnel and students on community response and vaccination for COVID-19. This effort was expanded in 2022 to train the CMRT on community oriented primary care (COPC). After the armed conflict in May 2023, the same ECHO platform was able to quickly shift to train CMRT personnel on emergency and trauma Response.

### **Lessons Learned**

The CMRT program was established using the Center of Diseases Control and Prevention Community Health Worker's checklist, which follows a "plan-implement-evaluate-sustain" framework. Evidence-based curricula from WHO and FMOH were used to develop training material on community engagement, COVID-19 home management and vaccination. The FMOH and SMSB served as local hubs and consultative bodies. The training was delivered by

diaspora and other subject matter experts (SME) from inside and outside of Sudan. Over a period of 3 years, the Sudan ECHO Center of Excellence ECHO platform provided training on the following healthcare priorities leading to the outcomes below:

1. CMRT and COPC ECHO: leading to community implementation of 150 awareness campaigns, home management of 77 patients, and delivery of 25,000 doses of vaccine by the CMRT between May 2021-December 2022.
2. Emergency Response ECHO: leading to community implementation of 413 days of CMRT mobile emergency clinics, mostly in displacement regions treating 20,637 patients between May 2023-February 2024

In addition to these major programs, the Sudan ECHO Center of Excellence platform was leveraged to provide leadership, peacebuilding, soft skills, and HIV prevention ECHO training to healthcare workers to address the training needs that we reported during sessions or through post-session feedback.

### **Way Forward**

Our experience suggests that the ECHO platform is agile in responding to emerging community and learners' needs. The interactivity of the platform allows for an exchange of knowledge between learners, SME, and organizers which allows for fast adaptability. In addition, the platform is a great way to engage diaspora SME which can help reduce the brain drain. These combined strengths can further address the HRH crisis in Africa.

**Title: Evaluation of an online platform for continuous professional development of healthcare workers in Kenya**

**Authors:** Elijah Misheck<sup>1,3</sup>; Bernice Njoroge<sup>1,2</sup>; Kenneth Miriti<sup>1</sup>; Ibrahim wako<sup>2</sup>, Jon Fielder<sup>1</sup>

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**Background:** Continuous professional development (CPD) is essential for all healthcare practitioners. Clinical officers are required to obtain CPD points for license renewal. Time constraints, cost, irrelevant material, and a lack of access are the main reasons for poor participation. Medicalcpd.Africa aimed to address these barriers by providing well-designed, authorized CPD content via an online learning platform. We conducted a survey of learners to identify gaps and assess learner receptivity to the platform and content.

**Materials and methods:** We conducted a cross-sectional survey alongside an in-depth review of the online platform since its inception in 2018 through August 2023. The quality improvement

survey was conducted from August 1st to October 11th, 2023. Participants were contacted via email and clinical officers' WhatsApp groups.

**Survey results:** A total of 1,898 Clinical officers participated in the survey. 72.3% of the participants indicated they had accessed and utilized the online courses. Most of the participants were from private clinics (29.1%) followed by sub-County hospitals (19.5%), and county referral hospitals (11.2%) with the least participation from community clinics (2.2%) and national referral hospitals (2.5%).

Highly rated courses were “Clinical Management of Covid-19,” “Overview of Type 2 Diabetes,” and “Side Effects of 1st Line ART in Kenya.” The least rated were “Medical Record Keeping,” “What’s the Rash?,” and “Multisystem Inflammatory Syndrome in Children.” When asked why they took the course, learners responded that the course addressed learning needs (38.6%), need for CPD credits (40.2%), and convenience of online learning (35.5%).

Challenges included slow (28.8%) or limited access (32.1%) to Internet connection, interrupted electricity (8.6%), and lack of time (26.0%). Recommended topics for future courses were mental health, TB management, cancer screening and treatment, and more modules on hypertension. Additional suggestions included offering more CPD points per module as well as case-based modules.

**Online platform review:** The online platform has grown rapidly, from 288 users between August and December 2018 to 17,659 users by the end of September 2023. There are 77 available courses on the online platform. The most frequently utilized courses were “Clinical Presentation of COVID-19” (64.8% of users), “Diagnosis of Cryptococcal Meningitis” (63.0%), and “Otitis Media” (61.1%). The least utilized courses were “Approach to Diffuse Lung Infiltrates on Chest X-ray” (11.3% of users), “Community-acquired Pneumonia in Adults” (10.3%), and “Basics of Menopause” (6.6%). A modest amount of fraudulent activity was detected by Clinical Officers Council staff and online review of utilization patterns. Abuse declined significantly following mitigation measures and warnings to participants.

**Conclusion:** The rapid increase in the number of users is an indication of the accessibility and acceptability of the platform. An online medical CPD platform is a viable way to keep primary healthcare workers skills up-to-date and meet modern licensing requirements. Challenges include fraudulent use of the platform and financial sustainability.

### **Title: Leveraging an Established Virtual Community of Practice for Rapid Capacity Strengthening in Sudan**

**Authors:** Shawn D’Andrea, Abrar M.A. Abdelrahim, Hadeel Abdelseid, Fajr Abdalhakam, Reel Abubakar, Nafisa Mustafa, Bayadir Mohamed Osman, Rowaie Mohamed, Nada Fadul

### **Background and Objectives:**

For decades digital education has supported healthcare capacity building though its use in humanitarian crises is less well understood. With the outbreak of war in Sudan in 2023, healthcare workers (HCWs) received a sudden increase in patients with traumatic injuries and medical emergencies. This paper describes the Sustainable Development Response

Organization (SUDRO) and its use of a pre-established virtual network through the Telegram Messenger app to deliver emergency care training to HCWs in Sudan and the role of a preexisting virtual community of practice (VCOP) describe key programmatic elements of adaptability and accessibility for effective capacity building in emergency settings.

### **Description:**

Prior to the war SUDRO and its Community Medical Response Team (CMRT) program worked on primary care capacity strengthening for several years. Through this program a VCOP was cultivated using the Telegram messenger app for a community of over 5000 HCWs. With the outbreak of violence an emergency care curriculum was rapidly designed in collaboration with Project ECHO, WHO-EMRO, and brought through this network to HCWs in Sudan. The curriculum was regularly adapted to address the specific needs observed on the ground.

### **Lessons Learned:**

Training was conducted from April to October 2023. After the announcement of the program membership expanded from approximately 5000 to over 13,000 within days. 44 sessions were delivered and recordings were shared through the network for asynchronous uptake.

An average of 58 participants per session attended live with an estimated 2,552 HCWs reached in total. An average of 1,700 views of recorded sessions were identified.

Examples of some lessons learned from the Sudan emergency ECHO include:

1. Access to over 14,000 HCWs provided unparalleled ability to reach HCWs despite security challenges and logistical barriers where in person-training would be very challenging.
2. The VCOP provided a platform for real-time communication and collaboration, allowing for swift adaptation of the curriculum to address emerging healthcare challenges.
3. Drawing on contextual awareness and cultural familiarity, Sudanese medical professional diaspora facilitated higher quality and resilient knowledge sharing.
4. Engaging HCW in the design and implementation of the program empowered frontline providers to contribute to the improvement of emergency care delivery in their communities.

### **Way Forward:**

Based on the experience of the Sudan Emergency ECHO, pre-established VCOPs may be beneficial in acute health emergencies such as conflict, natural disaster, or outbreak. When healthcare resources are difficult to reach due to geographic barriers or security challenges, the value of remote training may be even greater. , policy makers, and healthcare educators should consider prioritizing development of VCOPs in regions with high risk of health emergencies. preestablished VCOPs and their effectiveness to address public health emergencies should be studied to understand whether these observations can be replicated, generalized, and to identify best practices, and inform future efforts to strengthen healthcare resilience and preparedness globally.

**Title: Digital technology and partnership: Research strengthening among health care practitioners during armed conflict in Sudan.**

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**Subtheme:** Education and training for healthcare professionals in Africa

**Presentation Preference:** Oral presentation

**Key words:** Health research, capacity building, Conflict-affected, Health workers, digital Technology.

**Introduction:** Strengthening research capacity of healthcare workers in LMIC is not only affected by their institutions and health system but also by the external environment in which they operate. Conflicts results in more challenging environment to conduct research and adopt research capacity strengthening interventions at several levels: individual, organizational, and institutional. With the recent increase in conflict -affected areas in the world in general and in Africa in particular it is becoming very challenging to provide adequate scientific and research guidance to healthcare practitioners to conduct research effectively. Both the complexity of the external environment and the prioritization of humanitarian efforts in funding over research capacity strengthening, hinder the implementation of such efforts.

This study aims to identify barriers and constraints for healthcare workers to design and conduct research during armed conflict and identify effective strategies that enable healthcare practitioners at the front line to conduct research.

**Method:** The study applied a learner -centered methodology in which participants, healthcare practitioners working in armed conflict setting-in Umdurman Sudan, focus on reporting health consequences of armed conflict, investigating specific intervention, and providing evidence of new approaches. Support and supervision were provided by collaborative partnership of governmental, academic, and non-governmental organizations in diaspora. Training and supervision utilized the digital technology of WhatsApp, telegram and zoom. Through qualitative data analysis we examined the challenges, enablers and the proposed effective strategies implemented for enhancing research conduction in fragile setting during armed conflict.

**Results:** The results of training utilizing digital technology prior conduction of research showed that online training added slightly to the pre-existing knowledge in research design and methodology among participants. However, the main challenges occurred during proposal writing and research conduction phases. Navigating the process of securing ethical approval from the institutional review board posed a significant obstacle in the research endeavor, exacerbated by the intricate ethical considerations inherent in conducting studies involving human subjects during wartime. Time constraints, infrastructural issues such as electricity and internet outages were major challenges as well, followed by security concerns and limited access to resources during data collections phases. The enabling factor of collaborative research supervision through the round table carried by telegram technology and the teamwork were emphasized. The later emphasizes the synergistic efforts of academia, governmental and non-governmental collaboration during Conflict.

**Conclusions:** This study underscores the importance of tailored approaches to improve the issues faced in conducting research in the conflict-affected area in Sudan. Providing evidence, and technical guidelines through research is of paramount importance to inform humanitarian efforts and policy makers in building resilience of healthcare system during conflict and influence post conflict policies.

**Title: Factors Contributing to Malaria in Pregnancy: A Cross-Sectional Study in Ghana Towards SDGs attainment**

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**Funding:** This study is supported and funded by Sudanese American Physician Association MERSI-SAPA

**Background and objectives:** Malaria remains a significant public health challenge globally, particularly among vulnerable populations such as pregnant women and young children. In Sub-Saharan Africa, malaria-related morbidity and mortality persist, despite existing interventions. Ghana, a malaria-endemic country, has implemented various initiatives to mitigate the burden of malaria, yet challenges remain. Limited recent data on malaria prevalence and associated factors among pregnant women underscore the need for updated research to inform policy and improve healthcare delivery, aligning with Sustainable Development Goals (SDGs) related to health and well-being. This study aimed to determine the prevalence and determinants of malaria infection among pregnant women, contributing to the achievement of SDG 3.

**Methods:** A cross-sectional study was conducted at the Antenatal Clinic of the Ejisu Government Hospital from October to November 2022. Data on sociodemographic characteristics, obstetric history, malaria prevalence, preventive measures, and factors associated with malaria infection were collected with structured questionnaires and medical records review. Descriptive and inferential statistical analyses were carried out to assess malaria prevalence and identify associated factors.

**Results or Lessons Learned:** Among 140 respondents, the prevalence of malaria infection was 17.1%. Multivariate logistic regression analysis showed that the chances of being infected with malaria is reduced by 95% in pregnant women who sleep under ITN ( $p < 0.001$ ). Despite pregnant women receiving counselling on malaria prevention, challenges such as ITN utilization persisted.

**Conclusion or way forward:** The study highlights the persistent challenge of malaria infection among pregnant women. Strengthening healthcare systems and enhancing community-based interventions are essential steps towards reducing malaria-related morbidity and mortality, aligning with SDG 3. Targeted efforts to improve ITN availability and utilization are crucial for achieving sustainable progress in malaria control. Strengthening midwifery services can

significantly contribute to achieving universal health coverage and improving maternal and fetal health outcomes in malaria-endemic regions. Future research should focus on exploring innovative approaches to improving the uptake and effectiveness of malaria prevention interventions among pregnant women. This could include studying the implementation of digital health technologies for education and behavior change communication, as well as assessing the impact of community-based interventions led by midwives and other healthcare professionals. Additionally, longitudinal studies are warranted to monitor the long-term effectiveness of preventive measures and their impact on maternal and fetal health outcomes. Furthermore, comparative studies across different regions and healthcare settings could provide valuable insights into contextual factors influencing malaria prevalence and intervention effectiveness. By addressing these research gaps, future studies can contribute to the evidence base for optimizing malaria prevention strategies and advancing progress towards achieving universal health coverage for pregnant women in malaria-endemic areas.

**Title: Experiences in using ChatGPT and other artificial intelligence (AI) tools among medical lectures in Uganda: A qualitative study.**

**Authors:**

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**Background and objectives:** ChatGPT, an open-source large language model that can produce human like text is being used widely, including in medical education. The use of ChatGPT in medical education has raised concerns that are related to lack regulation of its use. There is limited information about the use of ChatGPT and other AI languages among medical lecturers. We aimed to explore the; 1) experiences, 2) opportunities, 3) threats and 4) recommendations for responsible use of ChatGPT and other AI languages among medical lecturers.

**Methods and description:** We are collecting qualitative data using both in-depth & key informant interview of medical lecturers at Busitema University, in Eastern Uganda. The interviews are audio-recorded, and transcribed verbatim. We are using Atlas Ti version 9.1 to organize the data. Data is analyzed iteratively by thematic content analysis, following the six steps by Clarke and Braun. The study was approved by Busitema University REC.

**Results:** Four major themes have so far emerged from the data; experience of use of AI languages, opportunities and challenges associated with use of AI languages and the recommendations to promote responsible use of AI in medical education. Lecturers expressed experience of use of open AI languages with most of them having used ChatGPT. The AI is used for preparing for lectures, setting assignments, marking scripts among others. Participants cited easy access to information, giving more tailored information, and simplified information as opportunities for AI use. However, participants had fears of these AIs causing laziness among students especially when they depend on only AI as source of information. Participants recommended the incorporation of artificial intelligence in medical education. They suggest the development of guidelines to guide its use.

**Conclusion:** Lecturers have fears towards use of AIs in medical education particularly regarding misuse by students. Participants however believe that AI can be improved and used in medical education. There are currently no guidelines to the use of AI in medical education at the institution. We recommend the development of policies and the training of students and lecturers to guide responsible use of AI in medical education.

**Title: Modelling Efficacy and Immunogenicity of Measles Vaccinations in Vaccinated HIVInfected and un-Infected Children: A Systematic Review**

**Authors:** Priscilla N Gardner 1,2, Dr Jimmy Hangoma<sup>3</sup> Dr Brian Chiluba<sup>1</sup>,

1 University of Zambia; Zambia National Public Health Institute<sup>2</sup> ; Levy Mwanawasa Medical University<sup>3</sup>

**Background and Objectives**

The resurgence of measles poses a global public health challenge, particularly threatening children under five years of age. This study systematically reviews the efficacy and immunogenicity of measles vaccinations among HIV-infected and non-infected children at University Teaching Hospital in Lusaka, Zambia. It seeks to understand the complex interplay of demographic, clinical, and immunological factors influencing vaccine outcomes, aiming to enhance vaccination strategies and contribute to measles control efforts.

**Methods or Description**

Employing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, this study conducted a comprehensive literature search on measles vaccination. Using databases such as Google Scholar and PubMed, and focusing on publications from 2018 onwards, 50 studies met the inclusion criteria. The review integrated Bayesian network models to analyze the complex interactions affecting vaccine responses, particularly in HIV-infected children, and assessed the impact of factors such as CD4 cell count and viral load.

**Results or Lessons Learned**

Findings reveal significant variability in measles vaccine efficacy between HIV-infected and noninfected children, with HIV-infected children showing lower seroconversion rates. Bayesian network analysis highlighted the importance of factors like nutritional status and HIV-related immunosuppression in predicting vaccine outcomes. The review also identified vaccine hesitancy, driven by socio-cultural and political factors, as a significant barrier to achieving higher vaccination coverage.

**Conclusions or Way Forward**

The study underscores the necessity of tailored vaccination strategies to address the unique challenges faced by HIV-infected children and combat vaccine hesitancy. Future directions emphasize the potential of digital health technologies for improving vaccine surveillance and delivery, and the importance of equitable vaccine access. This systematic review contributes to a deeper understanding of measles vaccination challenges and opportunities, guiding efforts towards achieving a measles-free world.

**Title: Trying to stay focused in difficult times  
A study evaluates the continuous learning process of Sudanese medical,  
nursing and health students during the war.**

Dr. Ali Awadallah Saeed (NUSU), Dr. Lutz Mücke (Lecturio), Prof. Dr. Qurashi M. Ali (NUSU)

## **Background**

After the beginning of the civil war in Sudan on April 15, 2023, most universities and colleges were looted, buildings destroyed, libraries burned, laboratories and hospitals damaged. Around 600,000 university students are struggling with the closure of over 100 educational institutions. Despite all the difficulties in a war-torn society, the management of the National University of Sudan (NUSU) has decided to continue education. The use of electronic learning and teaching as a way out has become an emergency exit for hundreds of NUSU students.

## **Methods**

The survey was conducted in January to February 2024. It involved 42 NUSU medical, nursing and health education students who responded to a semi-standardized online questionnaire with 22 closed and partially open-ended questions. The main research interest was "What does studying and digital education look like in times of war?"

## **Results**

The survey provides insights into the following aspects, among others

1. Challenges and security situation of students
2. Difficulties with digital education in times of war
3. Successful sources and channels of digital learning in times of war
4. Special requirements for lecturers and university management in times of war (from the students' perspective)

Almost all students had to leave their residences in Khartoum and either went to the Sudanese hinterland or fled the country. 40% left Sudan and emigrated to Saudi Arabia, Egypt, the United Arab Emirates or Oman. About 50% of them have been severely affected by the war and have lost family members, friends and neighbours; more than 80% have lost their property. Although about 85% find it difficult to continue their studies during the war, only 5% have decided to "temporarily leave".

The challenges faced by students consist of a whole range of interlinked complexities. Although almost two thirds of students have had no major difficulties in reaching their NUSU lecturers, they state:

1. Technical issues are by far the biggest barrier to successful continuous digital learning (lack of connectivity and electricity, inadequate hardware and software).
2. Psychological issues and "constant worries about their families and food" can be summarized as a second complex.
3. And thirdly, "direct military operations" in the nearby areas play a much smaller role.

When asked how the university can best support the learning process during the war, students came up with an interesting list of priorities. Here are the four most important Aspects:

1. reducing the academic load
2. making study time/periods more flexible
3. availability of learning content and materials online and facilitating the learning process
4. mutual understanding between students and teachers

The main sources of learning for NUSU students have been:

1. the eLearning platform Lectorio (indicated positively by 83% of participating students)
2. recorded lectures from NUSU lecturers shared via Telegram & other social media (69%)
3. interactive online lectures via Zoom, Google Meets etc. (19%)
4. recorded lectures and materials via NUSU Moodle CMS (12%)

## **Conclusions**

The main goal of students is to pursue the education of their dreams. However, most of them were - or are - in situations where their motivation has waned. It is difficult to study during a war, and students often lack the necessary technical and financial resources. However, even under these extreme conditions, most of them try to stay focused.

In this situation, it is of utmost importance that the management of the institution and the teaching staff adapt their pedagogical role, they need to become more like "community keepers", guiding through difficult times and providing content for distance learning. Conversely, students understand very well that their teachers often struggle with the same difficulties as they do.

A mixture of live e-meetings, recorded lectures and the content offerings and functionalities of the Lectorio platform as a backbone form the basis for this successful process. Telegram also plays an important role as a communication channel. However, NUSU's efforts to continue the learning and teaching process in times of war rely on courage and hope on both sides - teachers and learners.

## **Title: Enhancing Nursing Education Towards Achieving SDG: Insights from eLearning Utilization Among Distance Nursing Students in Ghana**

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### **Background and Objective:**

Amidst the global push towards Sustainable Development Goals (SDGs) 3 and 4, leveraging digital technology for health professions education plays a crucial role in achieving SDG targets. Advancements in Information Communication Technology have revolutionized teaching and learning, particularly for professional nurses who are still working and seeking higher education through eLearning platforms. This study assessed satisfaction with the use of

eLearning resources among professional nurses seeking higher education through distance learning, specifically focusing on factors influencing satisfaction using the Sakai Learning Management System (LMS) at the University of Ghana.

#### **Methods or Description:**

A quantitative research approach employing a descriptive cross-sectional design was utilized. Data was collected via a structured questionnaire assessing various dimensions of eLearning satisfaction. The study targeted 288 distance education undergraduate nursing students with experience in using the Sakai LMS. Statistical analyses including Mann-Whitney U test, Kruskal–Wallis H test, and logistic regression were conducted to identify factors influencing participants' satisfaction with the eLearning system.

#### **Results or What Was Learnt:**

The study revealed that distance education nursing students who had low e-learning satisfaction (satisfaction < mean satisfaction) were 47.9% (n = 138) and those with high satisfaction (satisfaction > mean satisfaction) were 52.1% (n = 150). Factors such as the flexibility of e-learning courses, perceived usefulness, and learner interaction significantly contributed to satisfaction levels. The study further revealed a significant difference in e-learning satisfaction levels between learners who own a computer (Md = 39, n = 214) and learners who do not own a computer (Md = 34.50, n = 74), U = 6549.50, Z = -2.22, p = .027, r = .11, emphasizing the importance of device accessibility.

#### **Conclusion/Way Forward:**

Enhancing eLearning resources, particularly focusing on course flexibility and the usefulness of programmes to the target population, is vital for sustaining learner satisfaction. Findings underscore the importance of eLearning in nursing education and highlight the need for continuous improvement in eLearning platforms. Exploring innovative opportunities to increase interaction on learning management platforms, can enhance learners' experiences. This can improve health professions education and contribute significantly to the attainment of the Sustainable Development Goals of quality education and Good health and well-being of all people. Further research should explore challenges and success factors influencing academic performance and professional development in eLearning contexts, along with its impact on learners' academic and professional development, to inform future educational strategies of health workers to attain the SDGs

**Title: Stress Levels And Coping Strategies Among Women Diagnosed With Hiv During Pregnancy At Selected Health Facilities In Lusaka District, Zambia.**

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**Background:** In an effort to eliminate mother-to-child transmission of HIV, pregnant women undergo HIV testing during antenatal care. A diagnosis of HIV adds to the stress of pregnancy. When mothers diagnosed with HIV infection during pregnancy utilize effective coping strategies, the stress levels decrease.

**Objectives:** To measure the levels of stress and categorise the coping strategies among women diagnosed with HIV during pregnancy at selected Health facilities in Lusaka district, Zambia.

**Methods:** An analytical longitudinal study design was used. Panel studies were used to collect data in 3 stages. Census sampling was done in selecting 110 study participants. The levels of stress were measured using the Perceived Stress scale adapted from Cohen, 1983, and the coping strategies were categorised using the Coping Strategy Indicator adapted from Armikhan, 1990. The Statistical Package for Social Sciences Version 26 was used to analyse data.

**Major findings:** Majority of participants (57.3%, 65.6%, and 37.5%) had moderate levels of stress at stages 1, 2 and 3 of the study respectively. Majority utilised Problem focused (problem solving) coping (54.4 and 62.5%) at stages 2 and 3 of the study respectively. Kruskal-Wallis test indicated significant difference between the coping strategy used and the stress levels at stage 2 of the study [ $\chi^2 (2) = 23.708, p = .001$ ].

**Conclusion:** The study recommends the use of the Perceived Stress Scale and Coping Strategy Indicator at every antenatal and postnatal visit for women diagnosed HIV positive during pregnancy, to identify those who are stressed and those who use maladaptive coping in order to assist them to cope.

**Key words:** stress, HIV diagnosis during pregnancy, coping strategy

**Title: Employing online android phone as appropriate technology in educating frontline health worker on non-communicable disease prevention**

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**Background**

The growing surge of non-communicable diseases is a major contributor to the morbidity and mortality in Africa. This poses a huge problem on the already frail health system bedevilled with childhood diseases, pregnancy related morbidity/ mortality and communicable diseases. Frontline health workers are paramount in the control of non-communicable disease (NCDs); if timely interventions are instituted. The intervention at this pre-symptomatic period can be in the form of health education on regular screening, promotive lifestyle strategies and compliance with follow-up visits and compliance and adherence to Treatment. It is becoming difficult educating health worker from different Primary Health centres (PHCs) due to logistics, insecurity, cost of funding, convenience of the timing etc. However, android mobile phone served as the appropriate technology to educate the workers through the zoom platform.

### **Objective**

Aimed to assess knowledge and educate the frontline health workers on non-communicable disease via zoom platform.

### **Methodology**

Ninety two (92) staff of different cadre, were selected from PHCs across the 17 Local Government Areas by the State coordinator of the Monitoring & Evaluation unit, with permission sought and obtained from the State Commissioner of Health. A detailed training was given on NCDs (highlighting the risks, common types, prevention) via zoom online interaction after a pre-assessment of knowledge of NCDs. A post-assessment was conducted after the training.

### **Results**

Participants were 67 (67.4%) female and 30 (32.6%) male; they were from PHCs across all the LGAs of the State. There were significant differences in the knowledge assessed pre and post NCDs education. Knowledge on types/classification of NCDs (Pre 25/27.2%, Post 79/85.9%); associated risks (Pre 18/19.6%, Post 82/89.1%), early detection (Pre 59/64.1%, Post 84/91.3%), adoption of health promotive lifestyles (Pre 54/58.7%, Post 87/94.6% ) Improved.

### **Conclusion**

The Android mobile device was put to effective use in health educating PHC staff across all the local government of the State on NCDs, which improved their knowledge.

**Key words:** Health workers, Non-communicable disease, Primary Health Care

**Title:** Overcome virtual education challenges in low and middle-income countries: Sudan experience

**Authors:** Hadeel Mohamed Muaid Abdelseid, Yousra Mubark Mustafa Ahmed, Ana Carolina Barbosa De Lima, Nada Fadul.

**Abstract:**

Since the start of the COVID-19 pandemic, the world has seen significant changes in the education landscape, including a digital transformation. In low- and middle-income countries (LMICs), limited access to high-speed internet is a considerable challenge. In this context, the Community Medical Response Team (CMRT) responded by using social media apps (SMA) to conduct their ECHO sessions. This study compares digital learning participation and satisfaction using Zoom versus Telegram in Sudan. Seven CMRT virtual training sessions were conducted via Zoom between August and November 2022 and 14 sessions via Telegram between December 2022 and March 2023. Visual and audio materials were available for trainees using both platforms. A REDCap post-session survey assessed self-reported knowledge gain and satisfaction. Preliminary results indicate that Telegram may be a more suitable platform for online learning in Sudan. The average Zoom attendance was 35 versus 93 during Telegram sessions, and self-reported knowledge gain was not significantly different from participants in sessions using either platform. We will further analyze satisfaction and barriers to participation to explore opportunities and challenges for telementoring with these platforms. Our preliminary analysis showed that Telegram was more accessible to attendees and as effective as Zoom in delivering virtual inter-professional training in Sudan—future studies with rigorous research design are needed in LMICs to compare traditional digital platforms to SMA.

#### **Objectives:**

1. To share the experience of the CMRT program in Sudan using two online learning platforms
2. To discuss challenges and opportunities for telementoring in Sudan
3. To show evidence of the benefits of using Telegram in Sudan

#### **Title: Leveraging Project ECHO Platform and Community Engagement to Advance Health Related Sustainable Development Goals in Sudan**

#### **Authors**

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### **Background and Objectives:**

Project ECHO has demonstrated success in improving health outcomes. While its use has mainly focused on healthcare, it can be leveraged to train inter-professional teams and communities to advance all health-related sustainable development goals (SDGs). Our main objective was to evaluate the use of ECHO to train students, professionals, youth, and women on selected SDGs in Sudan.

### **Description:**

The initial stage between January 2021-March 2022, used a program life cycle of plan, implement, and evaluate. During 2023, we focused on sustainability. Between January-April 2021, we recruited an interdisciplinary team of students and practitioners and performed a situational analysis of community needs. We developed a curriculum aligned with SDGs and partnered with academic, governmental, non-governmental, and local communities. During May 2021-April 2022, we deployed trained volunteers to engage with communities and implement SDG-focused projects in underserved regions. Our evaluation phase focused on implementation output through post-ECHO session surveys and implementation reports.

### **Lessons Learned:**

We conducted focus groups as well as surveys to evaluate the needs of learners. Based on the feedback, we developed a framework that links the ECHO training programs to projects that address priority SDGs in the community. We prioritized the projects based on community needs identified by stakeholders and program members. The first ECHO, launched in May 2021 focused on training health professional and students (community medical response team, CMRT) to address COVID-19 management, prevention, vaccination, and primary care. The second ECHO, in July 2022, focused on training engineering students (community engineering response team, CERT) on waste management. The third, in August 2022 focused on training youth and women on leadership and peace-building. Majority of learners stated that they would use what they learned, found the sessions relevant, and 71% would recommend the sessions to colleagues. Community engagement activities included: 150 health awareness campaigns, home-management of 65 patients with COVID-19, delivery of 25,413 doses of COVID-19 vaccine in the community; supplying clean water to internally displaced people camps, implementation of waste management community project, and flood relief missions to disaster impacted areas. We established collaborations with peace

### **Way Forward:**

The ECHO model has been successful in establishing learning communities and inter-professional partnerships to work towards creating community-engaged solutions for health-related SDGs.

**Keywords:** SDGs, Community-engagement, Project ECHO

## **Title: Harnessing Health Information Systems to Enhance Tuberculosis Treatment Adherence and Completion**

### **Authors**

Joseph Mukiibi<sup>1</sup>, Dauda Mayambala<sup>2</sup>, Tadeo Tumusiime<sup>3</sup>, Moureen Nalweyiso.

### **Background**

Tuberculosis (TB) remains a significant global health threat, necessitating innovative approaches for effective control and eventual eradication. Information and communication technology present opportunities to address this challenge on different fronts. Electronic systems like the electronic case-based surveillance system (eCBSS) have been introduced at AHF clinic- Owino, supported by AIDS Information Centre as a CSO under the USAID LPHS TB Project to monitor TB patient data and appointments rather than using traditional methods like physical counting. Before this in April-June 2023, 21 out of 51 (41.2%) patients active in the quarter had treatment interruptions. Of these patients, 11 (52.3%) patients were successfully followed up within the reporting period. To better demonstrate the effectiveness of the eCBSS, a prospective study was used to monitor TB patients' appointments, adherence and treatment outcome using the electronic database.

### **Methodology**

The national eCBSS scale-up training by the Ministry of Health equipped health facility TB focal persons and data officers with the necessary skills to utilize and update the system. At AHF clinic-Owino, a data assistant was designated to enter TB patient data into the system and conduct weekly follow-ups on appointments, contact tracing, and treatment outcomes. Line lists were generated to identify patients due for appointments or follow-up services, facilitating targeted interventions by TB focal persons.

### **Result**

By the end of December 2023, TB patients with treatment interruptions greatly reduced to 9.8% (7/71), 100% (7/7) TB patients who interrupted treatment were followed up within the respective months. TB drug adherence also improved from an average of 67% (29/51) to 87% (62/71). TB Treatment success rates increased from 84.6%, 92.3% to 98% in April- June 2023, July- September 2023 and October – December 2023 respectively.

### **Conclusion**

The implementation of eCBSS has led to substantial improvements in TB treatment adherence and completion rates. Additionally, the streamlined projection of patient appointments has enhanced appointment keeping and alleviated healthcare provider workloads. Ensuring the continuous updating and maintenance of electronic databases is crucial for sustaining these improvements and fostering better treatment outcomes for TB patients.

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**Title: Cancer Stigma and Financial Toxicity as Barriers to Cancer treatment: Narratives of Kenyan Cancer Survivors and Supportive Care Providers.**

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**Background and Objectives:** Increasing incidence rates, late diagnosis, inaccessibility of care, high costs of diagnosis and treatment, high mortality rates, and cultural stigma characterize the current state of cancer in Kenya. This poses an urgent need to support cancer survivors and understand the sociocultural and psychological factors that contribute to their sense of stigma, heighten or mitigate their distress, and facilitate or prevent cancer treatment seeking. The aim of the study was to establish existing gaps in psychosocial support among cancer survivors in Kenya.

**Methods:** In collaboration with four non-governmental organizations (NGOs) that support cancer survivors in Kenya, 17 cancer survivors and 16 NGO supportive care providers were interviewed with an aim of assessing patient and supportive care provider perspectives on sociocultural and psychological facilitators and barriers to cancer treatment seeking. Interviews were transcribed and analyzed thematically.

**Results:** Cancer Stigma and financial toxicity were among the major themes identified. Patients' stigma was associated with low cancer literacy (for patient or family), cultural/ religious beliefs of cancer as caused by evil, family or community ostracism or rejection, lower economic and educational status, and high distress, including shame. Financial Toxicity was attributed to limited accessibility and high treatment costs, dwindling social support as well as the cancer related low quality of life. These factors contributed significantly to patients delaying or not seeking cancer treatment. Patient acceptance and coping with cancer as a medical disease was associated with increased family support, higher cancer literacy, less shame and distress, and, even among lower income patients, greater cancer treatment seeking and commitment to treatment.

**Conclusion and Recommendations:** Stigma remains a huge barrier to management of cancer while financial demands of cancer treatment to the survivor, family and the society in general cause a huge burden. Educational and supportive interventions targeting individual, family, community, and societal levels are needed to increase cancer literacy, reduce stigma, enhance acceptance, and facilitate treatment seeking.

**Key words:** Cancer, Stigma, Financial Toxicity, Cancer Treatment

**Title: 'And who will reward us?': Exploring Barriers and Facilitators for Village Health Teams in Hypertension Screening and Referral Activities in Eastern Uganda: A COM-B Model analysis.**

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**Background:** Hypertension (HTN) affects about one billion people globally. In Uganda, HTN has a high prevalence rate of 26.4%, but 76.1% of those affected are unaware due to low screening rates and limited medical professionals. Community health workers called Village Health Teams (VHTs) are crucial in primary healthcare and have improved maternal and child health outcomes. However, the utility of VHTs in HTN prevention and control remains underexplored. We explored the barriers and facilitators to VHTs' involvement in hypertension screening and referral to hospitals in Eastern Uganda.

**Methods:** We conducted an exploratory qualitative study in June 2023 in Bugembe town council, Jinja city, Eastern Uganda, as part of the formative study for assessing the feasibility of using the VHTs to screen and refer hypertensive patients from the community to the hospital. We conducted in-depth interviews with VHTs from four villages guided by the Capability, Opportunity, Motivation behavioral change (COM-B) model framework. Interviews were conducted in both English and Lusoga, the local dialect, and were audio-recorded, transcribed verbatim, and then translated into English. The data was thematically analyzed, with themes being mapped onto the COM-B model to identify barriers and facilitators in VHT involvement in hypertension management.

**Results:** We interviewed 12 VHT members, predominantly female (83.3%), with a median age of 48 years. The participants demonstrated various limitations in both knowledge and practical experience on hypertension screening. Notably, VHTs needed a comprehensive understanding of hypertension, especially in interpreting blood pressure readings, and many demonstrated inexperience with blood pressure devices. Other barriers included societal misconceptions and stigma about hypertension and the lack of blood pressure machines. Motivationally, VHTs expressed feelings of undervaluation and the impact of societal attitudes towards hypertension in their work. Despite these challenges, there were facilitators, such as a basic understanding of hypertension, community trust, and support from non-governmental organizations (NGOs). Their openness to training and intrinsic motivation to improve community health were notable Strengths.

**Conclusion:** Village health teams in Uganda need enhanced training on hypertension prevention and control, improved resource allocation, and motivation strategies to contribute to a reduction

### **Title: Nurse's adoption of healthcare technology to facilitate healthcare delivery in resource-limited settings**

#### **Author**

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**Background:** A series of studies found that nurses working in resource-limited areas have little or no access to healthcare technology to facilitate their healthcare practice. Access to the best available evidence-based health information enables professional nurses to make sound decision when providing healthcare. There are however barriers which exist hindering the adoption of healthcare technology by professional nurses working in resource constraints Settings.

**Aim:** The study investigated nurse's adoption of healthcare technology to facilitate the delivery of healthcare in resource-limited settings.

**Methods:** The study employed both quantitative and qualitative research approaches to investigate the adoption of healthcare technology by professional nurses. The quantitative data were collected using self-administered questionnaire from ninety-three (n=93) nurses. A descriptive statistical analysis was conducted to summarize the data using the SPSS version 27 program. Semi- structured interview questions were used to collect qualitative data from twenty (n=20) professionals nurses. Data were transcribed and analysed using inductive thematic analysis following the six-step process proposed by Braun and Clarke social science Research.

**Results:** Two-thirds of the respondents reported having positive attitudes towards the adoption of healthcare technology. About 58 % were confident to use healthcare technology for patient care, however, the actual usage of technology was less than 56%. More than three quarters 76.3% of the respondents reported that they did not have Internet, and 74.2 % reported no access to computer. Barriers to healthcare technology adoption were organizational barriers, such as restricted access to computer technology, workload, time constraints, and personal

factors, such as lack of skills in how to search for information, unfavorable attitude and the belief that the use of healthcare technology during the clinical practice affect nurse-patient interaction, and decrease productivity.

**Conclusion:** The study demonstrated that most of the professional nurses did not adopt healthcare technology in clinical practice, and they had limited access to computers technology at workplace. Therefore, professional nurses had low level of technology adoption due to both the organizational and personal factors. Providing appropriate technology access and computer skills training is vital to enhance nurse's adoption of healthcare technology to facilitate the delivery of their daily patient care.

**Title: Socially responsive medical education: Reframing what counts as powerful knowledge in medical education Authors:**

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## **Background**

The expansion of social inequalities and the interplay with ill health have reinforced the importance of preparing health professions students to respond effectively to issues of equity and social justice in health care. The literature argues that health professions curricula should strive to equip students to be socially responsive which requires that students are both clinically competent and critically conscious of the social contexts in which they provide healthcare. Through education, the fourth Sustainable Development Goal, specifically target 4.7. seeks to equip lifelong learners to promote equity and create a more just society and thus intersects with the domain of health. The quest to transform health professions education on this level necessitates a deeper scrutiny of the curriculum knowledge structures, content, teaching and learning opportunities and pedagogical approaches. Furthermore, reconceptualising curricula requires an understanding of the student experience. Currently little is known about the student perspective on how the curriculum is preparing them to be socially responsive to health inequities and advance a social justice agenda in health.

## **Aim/Objective**

This paper draws its data from a qualitative study that explored the understandings and experiences of final year undergraduate medical students regarding what within their medical curriculum has influenced them to become socially responsive. We explore the implications of these understandings and experiences for the transformation of the knowledge structures within undergraduate medical curricula.

## **Methods**

Qualitative data were generated using focus groups, rich picture drawings and interviews with twenty-seven purposively selected final year undergraduate medical students at a South African university. Data were coded inductively using reflexive thematic analysis.

## **Results**

Drawing on socially just pedagogies to offer insights into the understandings and experiences of final year undergraduate medical students, students expressed that the curriculum did provide opportunities to engage with concepts related to social justice and equity. However, these opportunities were less frequent and were considered less valued when compared to biomedical knowledge. The tension between the biomedical and social responsiveness was influenced by the cultures and traditions of medicine and medical education which create conditions that position biomedical knowledge as the only form of powerful knowledge in the medical curriculum.

## **Conclusion**

As health professions education shifts towards advancing social justice, there is a need to reframe what constitutes as powerful knowledge in medical education to include social justice. This may involve contesting the dominant forms of knowledge and ways of knowing in medical education as well as dismantling the systems and structures that continue to maintain injustice. In alignment with SDG4 it is essential that health professions curricula grant students access to the type of knowledge and skills that will empower them to tackle injustice and become responsive to health inequities.

## **Title: Amplifying Youth Voices in Strengthening Health Risk Management**

### **Author**

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### **Background and Objectives**

Target 3.d of the Health Goal- SDG 3, is to “strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks”. To support the attainment of this, Nigeria Solidarity Support Fund (NSSF) designed the annual, national WeNaija health advocacy campaign. This context-specific approach promotes youth participation in advocacy, leveraging their population

size and technology savviness. According to the United Nations, Youths make up 70% of the population<sup>i</sup>. Datareportal estimates 31.60 million social media users in Nigeria, 28.20 million of these are 18 years and above<sup>ii</sup>. By proactively investing in the long-term capacity development of youths, Nigeria will be better positioned to realise its demographic dividends<sup>iii</sup>. This paper highlights NSSF's approach to influencing public risk perception in the attainment of the SDGs over 3 years.

### **Methods or Description**

The WeNaija campaign took the form of a content creation contest using creative skills like photography, literature, and video creation to raise awareness on the management of individual and national health risks. It targeted youths 18-35 years in Nigeria. Youths were engaged in designing the contests to ensure they were relevant and appealing to the target audience. The campaign was launched through various channels including social media and traditional media outlets through a press briefing. To increase youth engagement, physical outreaches were conducted in tertiary institutions across the country in collaboration with student ambassadors. Virtual outreaches were also conducted via social-media platforms and online communities in collaboration with local social media influencers popular among the youth.

Youths created advocacy materials in line with the health risk management theme for the year and shared them via digital platforms including social media. The entries were judged by subject matter experts relevant to the competition format and theme. Exhibitions or youth festivals were conducted to allow physical engagement with the youth, networking, and capacity building on advocacy and creativity. During the festival, advocacy materials in the form of entries were showcased and critiqued. The winners were selected following real-time evaluations by the judges.

Finalists were given opportunities to apply for internship positions at renowned media institutions. A community was also established to ensure continuous engagement and capacity building of the youths.

### **Results or Lessons Learned:**

About 2000 youths registered for the campaigns, 1206 created and submitted advocacy materials, 125 youths received seed funding for their craft, 611 benefited from capacity building sessions, 9 internships were awarded. 3,047,997 were reached with advocacy materials and 75% of interns reported new skills developed.

### **Conclusions or Way Forward:**

Youths make up a significant population of Nigeria and are active users of digital platforms. It is therefore important to capture youth voices in advocacy and nation building as they transition into leadership roles. Creating fun and engaging models of participation and leveraging social media is critical to involving youth in supporting the attainment of the SDGs in Nigeria.

**Title: Phytochemical Profiling (GCMS) of the leaf extract of mangifera indica and its Hypolipidemic Effect on Serum Lipid profile in Streptozotocin induced diabetic Wistar rats.**

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### **Abstract**

**Objectives:** This research is aimed at profiling and investigating the hypolipidemic effect of ethanol extract of *Mangifera Indica* in streptozotocin induced diabetic wistar rats.

**Methods:** Thirty albino wistar rats weighing 110 to 242g were randomly distributed into six groups of five rats each. Group I served as normal control and was given feed and distilled water. Group II served as diabetic control and was given feed and distilled water throughout the study period. Those in groups III, IV, V, VI served as treatment groups and were induced with 40mg/kg.b.w of streptozotocin. Group III was treated with 5unit/b.w of insulin. Groups IV, V, VI were treated with 200, 300, 400mg/kg of *Mangifera Indica* extract respectively. The treatment was carried out for twenty-one days. On the twenty-second day, the rats were sacrificed and blood was collected by cardiac puncture into plain tubes for biochemical estimations. Extraction and biochemical analysis were carried out using standard laboratory techniques. The chemical components of the leaf extracts were characterized by GCMS analysis.

**Results:** Administration of the extract resulted in a significant ( $p < 0.05$ ) decrease in TG, TC, LDL concentrations in all experimental groups when compared to the control group but an increase in HDL and VLDL concentrations.

**Conclusion:** Based on the results obtained from this study, it may be concluded that the ethanol leaf extract of *Mangifera Indica* may possess hypolipidemic properties and could be used to regulate lipid levels. The plant extract's GC-MS examination revealed that the most prevalent compounds were oleic acid, 9,12-octadecadienoic acid, and 9,12-Octadecadienal, etc.

**Key words:** lipid profile, hypolipidemic, biochemical analysis, extract, medicinal plants

### **Title: Elderly people's perceptions of the use of mobile phones to support the self-management of long-term illnesses at Kiruddu National Referral Hospital**

**Authors:** Mulinde Peterson, Annabella Habinka Dorothy Basaza-Ejiri

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**Background:** The global estimate of the aging population is progressively increasing in low and middle-income countries and this is accompanied by the limitations associated with the need for equitable and efficient healthcare delivery among this dire population. Elderly people's adoption of mobile phones to support their long-term illnesses is still low resulting in inequitable healthcare access hence adoption of mobile phones is not balanced in the different populations

with research showing young persons' adoption rate is higher than that of elderly persons. We assessed Elderly people's perceptions on the use of mobile phones to support the self-management of long-term illnesses at Kiruddu National Referral Hospital.

**Objective:** This current study was conducted to identify elderly people's perceptions of the use of mobile phones to support the self-management of long-term illnesses at Kiruddu National Referral Hospital.

**Methods:** This descriptive-cross-sectional design study was conducted on a sample population of 30 elderly individuals older than 60 years admitted at the outpatient department of Kiruddu National Referral Hospital, Kampala, Uganda. We conducted face-to-face interviews following an interview guide and one focus group discussion. We later used a feature mobile phone and a tablet mobile phone to assess the individual ease of use of each device. The audio recordings were professionally transcribed and transcripts were coded into NVIVO version 12 analysis software for thematic analysis.

**Results:** Almost all of the respondents who visited the facility had an ailment that hindered their full utilization of the mobile phone to support their self-care. This together with other factors like financial constraints, lack of support from the health workers on how to use mobile phones to support health, inadequate support from the facility, and cost of mobile data among Others.

**Conclusion:** This study provides empirical evidence that there is hardly a known mobile phone adoption model to enable policymakers, systems developers, and health workers to promote the elderly population's use of mobile phones to manage their long-term illnesses in Uganda.

**Title: Innovative Competency Based Prehospital Provider Trauma Training Program in Kenya**

**Authors**

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**Background and Objectives:** Trauma is a leading cause of death and injury globally, with high mortality rates in Africa. Accordingly, item 3.6 of the Sustainable Development Goals (SDGs) highlights the need to reduce death by road traffic accident. Providing timely prehospital care for trauma victims is one way to combat trauma related mortality. Kenya has had significant development in emergency medical care over the past decade. Despite recent advances, training and education requirements for prehospital emergency medical service (EMS) providers are variable, with no defined national or county-level standards for EMS provider competencies or scope of practice. Additionally, there is no single national emergency response phone call line, making coordination of ambulances and prehospital care difficult. We partnered with Rescue.co, an emergency response organization in Nairobi offering nationwide emergency services, to develop a standardized trauma and injury training program for their contracted prehospital EMS providers. Through our innovative in-person two-day trauma training program and plan for online continuing education, we aim to address the knowledge gaps in prior trauma training amongst prehospital providers in Kenya.

**Methods:** We launched our pilot training program in Nairobi, Kenya in January 2024. Our course was modeled off current Prehospital Trauma Life Support (PHTLS) guidelines and consisted of two days of in-person lectures, interactive case discussions, hands-on skill practice stations, and simulations. We emphasized a standardized, algorithmic approach to trauma patient care, focusing on traumatic shock. We administered a survey to collect demographics and data on prior training and education, along with a pre-course baseline knowledge assessment. A post-course assessment was administered immediately after the course to assess knowledge gain.

**Results:** The pre- and post-course knowledge assessments were compared for 26 prehospital providers who completed the two-day course. All participants in our study had improvement in post-course test results, except for two participants with no change in scores. There was significant improvement in test scores across participants, improving by 15% on average (pretest mean= 71.7%, SD=11.3%, post-test mean= 86.7%, SD=7.7%,  $p<0.001$ ).

**Conclusions:** Our pilot program showed promising improvement in knowledge on trauma care for prehospital providers. The next phase of our project will focus on expansion of the program by a training of trainers model and creation of online content to improve knowledge retention. We will train select prehospital providers who participated in the pilot program on how to teach the course to their peers, with the goal of having all prehospital providers contracted with Rescue.co complete the course. Online content, including videos of the core lectures from the course, procedural skills videos, and review questions, will be sent to participants at regular intervals after completion of the in-person course. We will assess knowledge retention from the course at 12 weeks and 6-month intervals. We will assess efficacy and clinical impact of the program by researching change in clinical behavior in the treatment of trauma patients. We believe this innovative model can provide standardized training and continuing education for prehospital EMS providers in Kenya to address current knowledge gaps and improve emergency care.

**Title: The Effect Of Hiv Infection And Antiretroviral Therapy On Bone Mineral Density In Northern Tanzania**

## Authors

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**Background:** In high-income settings, diminished bone mineral density (BMD) has been observed in persons living with HIV (PLHIV), possibly resulting from host and/or viral factors, and Antiretroviral Therapy (ART). However, little is known about BMD among PLHIV in sub-Saharan Africa.

**Objective:** To evaluate bone mineral density in PLHIV in Northern Tanzania.

**Methodology:** This cross-sectional study was conducted among adults aged above 18 years on ART attending the Kilimanjaro Christian Medical Center Care and Treatment Center, a Northern Tanzania tertiary hospital. All underwent standardized assessments using plain radiography to measure BMD with the Anburajan Empirical Formula. Both descriptive and logistic regression methods were used to identify alterations of BMD and associated factors.

## Results:

This study included a total of 188 PLWHIV on ART in Northern Tanzania. The mean age of the study participants was 51.5 years. Most of the participants were female (75.5%), non-smokers (95.7%) and not using alcohol (88.8%). A quarter of the participants had history of fracture (19.7%) and more than half had history of bone pain (53.2%). Majority of the participants had HIV and used ART for more than 6 years, 74.5% and 67% respectively. More than half had a viral load of <1,000 copies/mL (64.7%) and a CD4 count of less than 200 copies/mL (64.4%). Moreover, majority of the participants (71.3%) were on Tenofovir-containing ART. Sex was a significant predictor of decrease of bone mineral density, whereby males had higher change of having osteoporosis (60.9%). Patients with history of bone pain had higher chance of having osteoporosis (53.0%). Patients with a high viral load ( $\geq 1,000$  copies/mL) had significantly higher chance of having osteoporosis (59.1%). There were no statistically significant differences between patients taking TDF-containing regimen as compared to those on non-TDF containing ART.

Independently duration of having HIV infection and viral load count were significant predictors of bone osteoporosis. The odds of having osteoporosis increased by 18% per one- year increase in duration of HIV infection (COR 1.18; 95% CI 1.10,1.26). Having a viral load of  $\geq 1000$  increased the odds of osteoporosis by 2.2 times (COR 2.20; 95% CI 1.19, 4.05). In addition, a CD4 count of  $\geq 200$  decreased the odds of having osteoporosis by 43% though this was not statistically significant.

Independently, the odds of having osteoporosis increased by 18% per one-year increase in the duration of using ARTs (COR 1.18; 95% CI 1.09, 1.26). Furthermore, using Tenofovir-containing ART regimen was not a significant predictor of bone osteoporosis both in the crude and adjusted estimates.

**Conclusion:**

There was no statistically significant differences between patients taking TDF-containing regimen as compared to those on non-TDF containing ART. Independently, the odds of having osteoporosis increased by 18% per one-year increase in the duration of using ARTs. No association was shown between fracture history, BMD score, and TDF use. These results suggest that ART should aim to suppress viral loads to  $<1000$ , and a prospective study using DEXA should be done in the same setting.

**Keywords:** HIV, Tenofovir, Osteoporosis, Anburajan Empirical Formula, Bone mineral density(BMD)

**Title: Perceptions of health care professionals on interprofessional education after simulation training in Lesotho Authors**

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**Background:** Interprofessional education allows health care professionals to collaboratively work together as they share knowledge and ideas. Interprofessional education lead to a flexible healthcare force that is able to provide quality healthcare to its clientele.

**Objective:** To explore perceptions of health care professionals on interprofessional education after simulation training in Lesotho.

**Methods:** A quantitative descriptive design was adopted. The population was comprised of 21 student nurses, 14 student midwives, 45 nurse midwives, 4 professional counsellors, 6 laboratory technologists and 5 pharmacy technicians. In addition, 1 nutritionist, 1 social worker, and 1 dentist participated. Total population sampling was

used. Participants attended HIV simulation workshops and after each workshop they provided their workshop evaluation. Data was analysed statistically using SPSS version 28.

**Results:** Participants liked the HIV simulation training as they indicated that interprofessional education enhances teamwork, patient safety and makes one to understand his/her roles.

**Conclusion:** The study results shows that health care professionals at Scott Hospital have positive perceptions on IPE after being exposed to simulation training. The findings highlighted that the health care professionals would love to continuously learn with each other.

### **Keywords**

Interprofessional education; perceptions, health care professionals; simulation

### **Title: The temporal decrease in HIV viral load non-suppression among treatmentexperienced pre-teenage children in Kenya Authors**

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**Background:** Virological non-suppression (VLNS) in children is a major public health concern because of attendant HIV disease progression and risk of morbidity and mortality. Based on a nationally representative database we present estimates of the prevalence, trends and factors associated with VLNS in Kenyan pre-teenage children between 2015 and 2021.

**Methods:** Kenya National AIDS & STI Control Program's (NAS COP) maintains an early infant diagnosis and viral load (EID/VL) database for all persons living with HIV who are enrolled in the country's primary care clinics for purposes of monitoring progress towards achievement of the 95% viral suppression goals. Participants were eligible if they were children living with HIV (CLHIV), on combination ART (cART) treatment, and  $\leq 12$  years old. The modified Mann-Kendall trend test for serially correlated data was used to identify VLNS trends. Generalized estimating equations

(GEE) with a logit link was used to assess the effects of covariates on the odds of VLNS (VL  $\geq$ 1000 copies/mL) over repeated points in time, allowing for the correlation among the repeated Measures.

**Results:** Between January 2015 and December 2021, 508,743 viral load tests were performed on samples collected from 109,682 pre-teenage children. The prevalence of VLNS decreased from 22.9% (95%CI 22.4–23.3) to 12.5% (95%CI 12.1–12.9),  $p < 0.0001$ , and mean age increased from 3.1(4.2) to 8.0(3.2) years in 2015 and 2021 respectively. A modified Mann-Kendall trend test for serially correlated data denotes a statistically significant decreasing trend ( $\tau = -0.300$ ,  $p < 0.0001$ ) over the study period. In the multivariable GEE analysis adjusted for covariates, the odds of VLNS decreased by 11 % per year during the study period, (GEE-aOR 0.89, 95%CI 0.88–0.90;  $p < 0.0001$ ). Factors positively associated with VLNS were EFV/NVP-based firstline cART regimen (GEE- aOR 1.74, 95%CI 1.65-1.84,  $p < 0.0001$ ), PI-based cART regimen (GEE-aOR 1.82, 95%CI 1.72-1.92,  $p < 0.0001$ ), and children aged 1 to 3 years (toddlers) (GEE-aOR: 1.84, 95% CI: 1.79-1.90,  $p < 0.0001$ ). On the contrary, DTG- based cART regimen, were negatively associated with VLNS (GEE-aOR 0.70, 95%CI 0.65-0.75,  $p < 0.0001$ ).

**Conclusions:** There is a strong evidence of decreasing viremia between 2015 and 2021. To sustain the decreasing trend, accelerating the switch from the suboptimal EVP/NVP first-line regimen to optimised DTG regimen is Warranted.

## **Title: Nursing Students' Satisfaction with Clinical Learning Environment in A Private University Teaching Hospital in Nigeria**

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**Background and Objectives:** Placements in clinical learning environments give students the chance to hone their abilities, network with professionals, and bridge the knowledge gap between the classroom and the industry. This paper assessed the current level of satisfaction of nursing students with clinical learning environment and the associating factors that affected it.

**Method:** A cross-sectional design was adopted. Simple random sampling technique was used to select the respondents. A total of 130 nursing students participated in the survey in June, 2022. The main survey instrument was semi-structured questionnaire (CLES+T) incorporates contents from the Clinical Learning Environment, supervision, and nurse-teacher scales. Descriptive of general data. Chi-square was used to test the associations between variables with a 0.05 p-value using SPSS 20.0 software.

**Result:** The age of the respondents is  $21.76 \pm 4.39$  years. The majority (72.3%) had a good knowledge of Clinical Learning Environments. The majority were partly satisfied with the supervisory relationship (78.1%), the role of the nurse-teacher (64.8%), nursing care on the ward (78.9%), and the leadership style of the ward manager (68.8%) while half (50%) was satisfied with the pedagogical atmosphere. The major factor influencing students' satisfaction with the CLE was the duration of posting (77.7%). The results showed there were statistically significant associations between age ( $p = 0.005$ ) and the frequency of contact with the clinical instructors ( $p = 0.01$ ).

**Conclusion:** In Nigeria, nursing students have good knowledge of clinical learning environment and averagely satisfied with the pedagogical atmosphere. Duration of posting accounted for their average satisfaction. Based on the findings of this study, the organization of supervision needs to be re-evaluated and highlighted by educators to reduce the number of preceptors. Educators need to establish effective collaboration with healthcare service managers to develop strategies that support good clinical learning environments.

**Keywords:** Nursing Students, Supervision, Clinical learning environment, quantitative study, Nigeria

**Title: Using Authentication Techniques to enhance quality education in Health Institutions in Uganda Authors**

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## **Background**

The incredible technological advancements of the twenty-first century gave rise to e-learning and e-assessment, yet these systems are still susceptible to authentication problems. The largest problem is that there is no guarantee that the person taking an online test is the same person who enrolled for it.

## **Study Objective**

This study aimed at exploring authentication techniques used in e-learning platforms for health education institutions in order to enhance quality education.

## **Methods**

This study employed a hybrid (qualitative and quantitative) approach for data collection and analysis among 384 respondents. Surveys and interviews were utilised to understand the current authentication practices and their challenges.

## **Results**

According to the study's findings, password authentication was mostly used (90%) since it was affordable and required no new hardware or software. Biometrics were the least used technology (10%) because they were expensive to acquire and maintain in countries with limited resources.

## **Conclusion/Way Forward**

In order to address the problems of authentication in e-learning platforms in health profession education, there is a need to expand security considerations while taking into account; a combination of biometric characteristics, such as facial recognition and password authentication for stronger security. This combination (Multifactor authentication) can be added as a plugin to the various e-learning platforms and will aid in combating academic dishonesty like impersonation in health professional education institutions in Uganda.

**Keywords:** E-learning, Multifactor, Authentication

**Title: Overcoming Barriers to Organ Transplantation Implementation: Insights from Stakeholders involved in Botswana's National Organ Transplantation Policy**

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**Background:**

Despite provisions in the Botswana Public Health Act of 2013, which allows for organ donation for transplantation, the practice is not operational in the country. The National Organ Transplantation Policy (NOTP) was ratified in 2014 with the objective of facilitating organ donation and transplantation, yet it has remained dormant. This study investigates the factors hindering NOTP implementation, aiming to understand the perspectives of policy makers and intended implementers on organ donation and transplantation in Botswana. Organ transplantation is the gold standard treatment for patients with end organ failure. Therefore, the recommendations from this study will help in advancing the process of implementation of a sustainable organ donation and transplantation program in Botswana, contributing to the attainment of SDG 3 by reducing morbidity and mortality from organ failure.

**Objectives:** The study explored stakeholder perceptions on barriers to NOTP implementation in Botswana and gathered information on practical steps to address the barriers to NOTP Implementation.

**Methods:** This was a Qualitative Study guided by the Consolidated Framework in Implementation Research (CFIR) employing Oral semi-structured in-depth interviews with task force members responsible for drafting the NOTP in Botswana and other key stakeholders including health workers involved in implementing the policy. Transcribed audio-recorded interviews were thematically analysed using deductive coding under CFIR constructs, then categorizing them into major themes corresponding to CFIR domains in order to explore barriers to implementation of the NOTP. Ethical approval was obtained from the University of Botswana and Botswana Ministry of Health.

**Results:** Barriers to NOTP implementation included shortage of skilled man power, shortage of drug and non-drug supplies, ineffective organ procurement and retrieval processes, sociocultural beliefs, absence of official NOTP implementing teams, lack of high-level policy ownership and high cost of organ transplantation. Proposed solutions include leveraging on international and national partnerships, strengthening health sector partnerships including public-private-partnerships; addressing health system inefficiencies, capacity building of healthcare workers for organ transplantation and utilizing existing national processes in the country such as driver licensing, school curricula and community-based structures.

**Conclusion:** The NOTP requires a comprehensive review to assess its strengths and weaknesses. A needs assessment is essential to quantify the resources required for effective implementation. A strategic plan on organ donation and transplantation aligned with NOTP guidance, with clear aims, objectives, timelines and key performance indicators to serve as a road map for the effective implementation of the policy should be developed.

**Key words;** Implementation, Organ Transplantation, Organ Donation, Policy

**Title: The magnitude, risk factors, and oral health practices among people living with HIV in northern Tanzania Authors**

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**Background and objectives:** The HIV/AIDS pandemic has a severe impact on low-and-middle-income countries (LMICs) in Africa, Asia, and Latin America, leading to a significant human and social crisis. Approximately 50% of individuals with HIV develop oral lesions during the course of the disease. However, there is a lack of comprehensive studies on the prevalence and risk factors of oral lesions among people living with HIV (PLWHIV) in Tanzania. The aim of this study was to assess the magnitude and risk factors of oral lesions and oral health practices among people living with HIV in northern Tanzania who attended care and treatment clinics (CTCs) at Kilimanjaro Christian Medical Centre (KCMC) and Mawenzi Regional Referral Hospital (MRRH) from April 2022 to October 2022.

**Methods:** A cross-sectional analytical study was conducted among PLWHIV attending the CTC of KCMC and MRRH from April 2022 to October 2022. Demographics, knowledge, attitude, oral health practices, CD4 counts, and oral lesions data were collected and recorded using the WHO Oral Health Assessment form. A chi-square test was used to compare the proportion of participants with and without oral lesions. Multivariable logistic regression was done to determine factors associated with oral lesions with a 95% confidence interval (CI) estimation.

**Results:** A total of 374 study subjects were enrolled in the study and examined; 266 (71.1%) were females. A total of 257 (68.7%) had oral lesions, of which dental caries were the most common, at 140 (37.4%). The risk of oral lesions was associated with being aged 26-45 years (AOR: 0.12; 95% CI: 0.02, 0.54) and not brushing teeth regularly (AOR: 2.26; 1.09, 4.69), and highest risk was seen for those with CD4 counts <250 g/dl (AOR: 5.16; 1.63, 16.32).

**Conclusions:** The results suggest that individuals with advanced disease exhibit an increased prevalence of oral lesions, with reduced CD4 counts correlating with a greater likelihood of manifesting such lesions. The implementation of a training strategy aimed at facilitating routine oral hygiene assessments and counseling during CTC may effectively mitigate the incidence of oral lesions and the need for dental referrals.

**Title: Widespread use of ChatGPT and other Artificial Intelligence tools among medical students in Uganda: a cross-sectional study Authors**

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**Background:** Chat Generative Pre-trained Transformer (ChatGPT) is a 175-billionparameter natural language processing model that uses deep learning algorithms trained on vast amounts of data to generate human-like texts such as essays. Consequently, it has introduced new challenges and threats to medical education. In order to exploit the use of ChatGPT and other related Artificial Intelligence (AI) tools in medical education, there is an urgent need to develop guidelines. Knowledge on current use is key in developing guidelines for responsible use. We assessed the use of ChatGPT and other AI tools among medical students in Uganda.

**Methods:** We conducted a descriptive cross-sectional study among medical students at four public universities in Uganda. We used a semi-structured questionnaire to collect data on participants' socio-demographics and use of AI tools such as ChatGPT. Participants were recruited by stratified random sampling. Our outcome variable was use of ChatGPT and other AI tools. Data were analyzed descriptively in Stata version 17.0. We conducted a modified Poisson regression to explore the association between use of AI tools and various exposures.

**Results:** A total of 564 students were included in the final analysis. Majority [72.0% (406/564)] were aged between 18 and 25 years, and the median age (interquartile range) was 23 (22-26.5). Almost all 93% (522/564) had ever heard about AI tools such as ChatGPT and more than two thirds (75.7%) had ever used AI tools. Most (72.2%) had ever used ChatGPT, followed by SnapChat AI (14.9%), Bing AI (11.5%) and Bard AI (6.9%). Most students reported that they use AI tools to complete assignments (55.5%), preparing for tutorials (39.9%), preparing for exams (34.8%) and research writing (24.8%). Students also reported use of AI tools for nonacademic purposes including; as a personal assistant, for emotional support, recreation, counselling and spiritual growth. A quarter 26.6% (150/564) of the students reported use of AI tools more than once in a day and more than a third 43.6% (246/564) do not use AI tools every day. Medical students aged 35 to 46 years were 31% times less likely to use AI tools as compared to those aged less than 35 years (aPR: 0.69; 95% CI: [0.62, 0.76]). Students in Makerere University were 66% more likely to use AI tools compared to students in Gulu University (aPR: 1.66; 95% CI: [1.64, 1.69]). Year two medical students were 18% times less likely to use AI tools as compared to those in other years (aPR: 0.82; 95% CI: [0.72, 0.94]).

**Conclusion:** The use of ChatGPT and other AI tools was widespread among medical students in Uganda. AI tools were used for both academic and non-academic purposes. Younger students were more likely to use AI tools compared to older students. Our research adds further evidence to existing voices calling for regulatory frameworks for AI in medical education.

**Keywords**

ChatGPT, medical students, Bing, Bard, Uganda, generative AI, medical education

**Title: INVESTIGATING THE LARVICIDAL EFFECT OF SILVER NANOPARTICLES GREEN SYNTHESIZED FROM LANTANA CAMARA LEAF EXTRACTS AND KLEBSIELLA PNEUMONIAE AS POTENTIAL ACTIVE INGREDIENTS OF NANO-BIOPESTICIDE.**

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**Background and Objectives**

Since its invasion in 2016, *Spodoptera frugiperda*, commonly known as the fall armyworm (FAW) has caused devastating maize losses in Sub-Saharan African regions. Estimates states that the pest has the potential to cause maize losses of 4.1 to 17.7 million tonnes, valued at US\$ 1.1-4.7 billion yearly in Sub-Saharan African nations. Looking at Zimbabwe alone, the pest's potential to

cause maize losses is estimated to be over 264,000 tonnes per year, resulting in a revenue loss of US\$ 83 million. The current control methods applied in trying to deal with the pest are proving to be ineffective due to the pests developing resistance. With the current developments in nanotechnology, the project aimed at investigating the larvicidal effects of green synthesized silver nanoparticles (AgNPs) on 3 instar FAW larvae, which is the most troublesome stage of the Pest.

#### **Primary Objective**

- To investigate the larvicidal effects of green synthesized AgNPs on FAW larvae

#### **Secondary Objectives**

- To prepare Lantana camara leaf extracts, a broth culture of *Klebsiella pneumoniae*, and 1 mM stock solution of silver nitrate.
- To synthesize AgNPs using the Lantana camara leaf extracts and *Klebsiella pneumoniae* broth culture.
- To confirm the formation of AgNPs using spectrophotometric determination.
- To assess the larvicidal effect of AgNPs on FAW using the best synthesis results between Lantana camara and *Klebsiella pneumoniae*.

#### **Methods or Description**

The methodology used was derived from (Aritonang, et al., 2019), with adjustments made on the temperatures used, volumes and concentrations of the reactants, and the reaction times Used.

#### **Results or Lessons Learned**

Silver nanoparticles were synthesized from Lantana camara leaf extracts and a broth culture of *Klebsiella pneumoniae*. Under laboratory conditions, the collected FAW larvae were fed with maize leaves dipped in different concentrations of silver nanoparticles with the control samples being fed with non-treated maize leaves for a period of two weeks. The death rate of the larvae feeding on maize leaves dipped in different concentrations of silver nanoparticles was significantly affected, with  $p = 0.046$  ( $p < 0.05$ ) compared to the control.

#### **Conclusions or Way Forward**

The project demonstrated that plants and bacteria can be used to synthesize silver nanoparticles

in a low cost and environmentally friendly way and that silver nanoparticles have a potential to be used as an alternative of the synthetic pesticides to control the FAW.

**Title: Acteurs Influençant L'utilisation Des Méthodes Contraceptives Modernes Dans La Zone De Santé De Kisanga À Lubumbashi, République Démocratique Du Congo** Contexte: Pour diverses raisons, la prévalence de l'utilisation des Méthodes

Contraceptives Modernes -

MCM (9%) est parmi les plus faibles dans la province du Haut Katanga en République Démocratique du

Congo (RD Congo). Cette étude visait à déterminer les facteurs influençant l'utilisation des MCM par les

couples de l'Aire de Santé Kilimasimba, dans la Zone de Santé de KISANGA, Ville de Lubumbashi, province

du Haut-Katanga, RD Congo. Méthode : Nous avons conduit une étude observationnelle, transversale et

analytique sur deux groupes (femmes et hommes). L'échantillonnage en grappes (avenues) - à un degré -

a retenu 800 femmes et 760 hommes, ayant tous répondu à un questionnaire prétesté dans une autre

Aire de santé sur les variables de connaissance et d'utilisation des MCM.

L'analyse statistique des données

a consisté à calculer et interpréter des moyennes, des proportions, des rapports de prévalence (odds ratios, OR).

**Résultats** : La prévalence de l'utilisation des Méthodes Contraceptives Modernes (MCM) trouvée 28,2 %

dans le groupe des hommes et de 8,4% dans celui des femmes. Sur les 71,8% d'hommes n'utilisant pas,

31 % avaient pour principale raison la méconnaissance des MCM. Sur les 91,6% des femmes n'utilisant pas

les MCM, 40,8% ont mentionné la peur des effets secondaires rapportés comme raison principale. Chez

ces femmes, l'opposition des partenaires sexuels hommes (11,2%) était évoquée. Une régression

logistique réalisée séparément dans chaque groupe ; l'absence de discussion avec le (la) partenaire sexuel(le) sur les Méthodes Contraceptives (MC) ainsi que les avis neutre et contre sur les MC de l'interviewé étaient associés à la non utilisation dans les deux groupes. Un faible niveau d'instruction chez l'homme ; la religion, le nombre d'enfants en vie, le nombre d'enfants désirés au sein du couple et le rang de naissance dans sa famille chez la femme, étaient associés à la non utilisation des MCM.

**Conclusion :** Les facteurs influençant l'utilisation des MCM sont multiples, à l'instar du manque de discussion en la matière entre partenaires sexuels, des avis neutre et contre, du bas niveau d'instruction chez l'homme, la religion, le nombre d'enfants en vie ou désirés, et le rang de naissance en famille. En outre, la méconnaissance des MCM, la crainte des effets secondaires et l'opposition des hommes l'entravent. Les autorités sanitaires sont censées prendre en compte ces facteurs pour améliorer l'utilisation des MCM dans cette zone de santé de Kisanga .

Mots clés : Facteur Utilisation- Méthode contraceptive -planification familiale- zone de santé.

## **SUBTHEME 2: RESEARCH TOWARDS ATTAINMENT OF SDGS (SUSTAINABLE DEVELOPMENT GOALS)**

**Title:** Profitable self-employment in microenterprise for persons with disabilities in a rural setting – A qualitative study

**Authors' contributions**

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**Contribution:** Assisted with conceptualisation of the protocol, guidance and critical reviews throughout the writing process of the manuscript.

**Title:** Profitable self-employment in microenterprise for persons with disabilities in a rural setting – A qualitative study

**Background:** Although persons with disabilities are involved in self-employment (vocational rehabilitation), in microenterprises, key role players do not seem to be making valuable contributions or using self-employment as a placement option. Key role players in self-employment need to explore what suitable and profitable microenterprises are, how one initiates and sustains being self-employed, and understand the rationale for persons with disabilities to get into self-employment to make a contextual contribution.

**Objective:** This research aimed to explore profitable self-employment microenterprises for persons with disabilities in a rural setting in South Africa

**Method:** This qualitative research was conducted in a rural and low-resourced community in South Africa (KwaZulu Natal province). Purposive sampling was used to recruit ten participants who had been running profitable microenterprises for an average of five years each. Data was collected using in-person interviews using their preferred language. Data was analysed using thematic data analysis using Braun and Clarke's six stages. Ethical clearance was obtained from the university's Biomedical Research Ethics Committee (BREC), and Helsinki's Declaration was upheld.

**Findings:** Out of ten participants, n=9 (90%) were males. All were sole owners of their microenterprises and employed others. Two themes emerged, i.e., one - "Businesses are there... owned by people with disabilities" and two - Key role players (WHO - "I can... we should... people from the hospital... I think government or those in authority... the

municipality.” Persons with disabilities engage in self-employment by running businesses on a small scale. Because they did not receive training, they taught themselves or got into self-employment using their “natural gift”, trial and error, and observing others. Their rationale for involvement in self-employment and associated benefits were personal and family-related. They view those in authority as crucial in assisting them to succeed in self-Employment.

**Conclusion:** Persons with disabilities in the rural setting of a South African province engage in less complex and easy-to-initiate microenterprises. Some benefits of being self-employed were providing for their families and reintegrating into the community. This should encourage those involved in this field to aim towards understanding this occupation to better mobilise community resources to support those in need.

**Contributions:** This research generated Afrocentric data to contribute towards self-employment, which is under-researched, especially concerning persons with disabilities.

**Keywords:** Employment, entrepreneurship, income-generation, microenterprise, therapy, vocational rehabilitation, work

**Title: Predictors of repeated teenage pregnancy among adolescents in Northern Uganda.  
A cross sectional study**

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**Background:**

A second or more pregnancy during adolescence has been associated with an increased risk of preterm birth, low birth weight, and many more complications ranging from birth complications, depression, poorer health, and poverty. It is imperative to understand the factors and trends of repeated teenage pregnancy if evidence-based strategies are to be used to address the problem in specific areas.

**Aims:** The study aimed at determining predictors of repeated pregnancy among teenage mothers in the Lira District.

### **Methodology:**

This was a cross sectional study that employed quantitative methods of data collection and analysis. The study was carried out at antenatal care clinics of various health facilities (health center IVs and IIIs) in Lira district. 417 pregnant teenagers (aged 13 to 19 years) who met the inclusion criteria and consented were enrolled consecutively in the study between September 2022 to January 2023. Interviews were conducted using semi structured questionnaires either the Lango or English, depending on the language best understood by the participants. Data analysis was done Statistical Package for Social Sciences (SPSS) version 23. Participants below 18

years were considered as emancipated minors as is provided for in the Uganda National Council for Higher Education guidelines and therefore allowed to provide informed consent. Approval was granted by Gulu University Research Ethics Committee.

### **Results**

The prevalence of repeated pregnancy was 35.7%. marital status (AOR: 0.712, 95% CI: 0.510, 0.994,  $P < 0.01$ ) and having a pregnant peer (AOR: 2.179, 95% CI: 1.427, 3.370,  $P < 0.001$ ) were predictors of repeated teenage pregnancy among girls. Girls who were aged 16 to 19 years were

16 times more likely to have a repeated pregnancy compared to those who were aged 13 to 15 years. Teenagers who were not married had a 19% reduced likelihood of having a repeated teenage pregnancy compared to those who were married. Teenagers who had a pregnant peer were 2 times more likely to have a repeated teenage pregnancy compared to those who did not have a pregnant peer.

### **Conclusion**

This alarming high rate of teenage pregnancy if not urgently addressed is likely to contribute to increased maternal and neonatal morbidity and mortality rates in the district. Programs and efforts targeted towards reduction of early marriages, keeping adolescents in school and rehabilitation programs would be very instrumental in curbing this life-threatening condition, repeat teenage pregnancy.

**Title: Epigenomic Biomarkers as Targets for Therapeutic Interventions in Sickle Cell Disease (SCD) pain and overt stroke complications.**

Moira Amanda Mubani, Dr Patience Kuona , Professor Justen Manasa

SCD is a rare hereditary blood disorder caused by a mutation in the  $\beta$ -globin gene, leading to the production of abnormal hemoglobin. This results in the deformation of red blood cells into a sickle shape, leading to various complications, including chronic pain, multi-organ damage, stroke, poor quality of life and reduced life expectancy. While advances have been made in understanding the genetic basis of SCD, emerging evidence suggests that epigenetic modifications, such as DNA methylation, play a critical role in the pathogenesis of the disease and has potential for identifying prognostic biomarkers and therapeutic targets. Epigenetics refers to modifications in gene expression patterns that are not caused by changes in the underlying DNA sequence. Epigenomic biomarkers, such as DNA methylation patterns and histone modifications, have been shown to play a crucial role in regulating gene expression. The proposed research aims to explore the potential use of epigenomic biomarkers as targets for therapeutic interventions in SCD pain and overt stroke complications.

This research will involve a multi-disciplinary approach, combining genomics, epigenomics, and bioinformatic data analysis. The proposed research will involve collecting blood samples from SCD patients with pain episodes and overt stroke complications, as well as healthy individuals as control. These samples will be subjected to comprehensive epigenomic profiling, including DNA methylation analysis and histone modification analysis. The data obtained from this profiling will be analyzed using advanced bioinformatics tools to identify differentially methylated regions and modified histone marks that are associated with SCD pain and overt stroke complications. This research will provide valuable insights into the epigenetic basis of SCD pain and overt stroke complications, potentially leading to the identification of novel therapeutic targets for these debilitating symptoms. Furthermore, understanding the epigenetic mechanisms underlying SCD pain and stroke complications can pave the way for personalized medicine approaches in managing this condition facilitating early intervention, targeted treatment strategies, and improved health outcomes for individuals with sickle cell disease.

**Title: Lived experiences of female patients aged 15-49 years undergoing treatment for multidrug resistant tuberculosis (MDR-TB) in Lira Regional Referral Hospital, Uganda**

Kizito Omona & Christopher Ogwang

**Introduction:** Multidrug-resistant tuberculosis (MDR-TB) is a major public health hazard on a global scale. It is a kind of tuberculosis (TB) infection produced by bacteria resistant to at least two of the most effective first-line anti-tuberculosis (anti-TB) drugs: isoniazid and rifampicin. In numerous healthcare facilities around Uganda, MDR-TB patients have bad experiences.

**Aim:** The purpose of this study was to investigate the lived experiences of female patients aged 15 to 49 years receiving treatment for MDR-TB at Lira Regional Referral Hospital, Uganda.

**Methods:** Using a method of purposive sampling, a phenomenological qualitative study was done among female patients aged 15 to 49 receiving treatment for multidrug resistant tuberculosis at Lira Regional Hospital. Data was collected using an English-translated

Lango guide for in-depth interviews. Data was entered manually and analyzed using version 13 of the qualitative program NVIVO.

**Results:** It was discovered that the spouses of female MDR-TB patients lacked social support. Female patients with a history of tuberculosis prior to MDR-TB had stronger family support systems. MDR-TB diagnosis was strongly related with shock, anxiety, and denial. The majority of patients indicated that proper information. Compared to other health centres in the district, the MDR-TB services at Lira Regional Referral were easily accessible and staffed by friendly medical personnel.

**Conclusion:** Female patients receiving MDR-TB treatment represent a unique population, and family support and care had a significant impact on the success of MDR-TB treatment among them.

### **Title: Genotypic characterization of drug-resistant Mycobacterium tuberculosis isolates from people living with HIV in Blantyre, Malawi.**

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#### **Background:**

Globally, about 0.167 million people died of HIV-associated TB in the year 2022 and around 10 million fall ill with TB every year. African region accounts for 23% of new cases. Malawi is among top 8 most HIV-TB co-infection burdened countries in Africa, the health condition is worsened by the country state of being one of the poorest countries in Africa with a fourth highest percentage of people living in extreme poverty in the world. A steady increase in the prevalence rate of HIV/AIDS makes the situation even more precarious. Malawi, with around 19 million inhabitants, shares geographical borders with Mozambique, Tanzania and Zambia where HIV-TB co-infection is also endemic. Molecular epidemiological studies have reported 7 main lineages (L1-L7) of Mycobacterium tuberculosis (Mtb) with each lineage adapting to populations of a specific geographical area. Certain Mtb lineages have been associated with evolution of unique properties such as increasing virulence and pathogenicity. Specifically, the Beijing family of L2 has been associated with increasing drug resistance and HIV co-infection in some parts of the world including South Africa and Mozambique. Studies have expressed the diversity of Mycobacterium tuberculosis strains in some regions but few such studies have linked TB strains to multidrug resistance in people living with HIV.

#### **Methods:**

A retrospective cross section study was conducted on the mycobacterium (Mtb) clinical isolates amongst TB drug resistant people living with HIV to establish and investigate any association with multidrug resistance. TB resistance was confirmed using GeneXpert followed by manual DNA extraction using C TAB method on 30 samples. Multiplex

PCR and gel electrophoresis were used to cluster the mycobacterium (TB) strains present in the 30 isolates into 4 lineages (genotypes).

**Results:**

There were 0/30 (0%) isolates belonging to Lineage 1, 0/30 (0%) isolates belonging to Lineage 2, 2/30 (7 %) isolates belonging to Lineage 3 and 28/30 (93 %) isolates belonging to Lineage 4.

**Conclusions:**

The TB isolate belonging to Lineage 4 is predominant in HIV positive individuals who are resistant to TB treatment.

Study of Lineage 4 isolates may play a key role in the design and formulation of an effective treatment for HIV- associated TB.

**Title: Links between dietary patterns and intestinal and systemic inflammation among Tanzanian HIV-infected and uninfected adults: a cross-sectional study**

**Background:** The increased burden of non-communicable diseases is fueled by lifestyle factors including diet. This cross-sectional study aimed to explore among Tanzanian adults whether a potential mechanism for increased diabetes risk is dietary patterns which lead to low-grade intestinal inflammation, bacteria translocation, and systemic inflammation.

**Methods:** The study included 574 participants from the role of environmental enteropathy on HIV-associated diabetes (REEHAD) study, with both diet data and inflammatory markers. Dietary patterns were derived using principal component analysis and reduced rank regression, revealing three main patterns: vegetable-rich, vegetable-poor, and carbohydrate-dense diets. Markers of intestinal inflammation (fecal myeloperoxidase (MPO) and fecal neopterin) and systemic inflammation (plasma lipopolysaccharide-binding protein (LBP), and plasma C-reactive protein (CRP)) were assessed. Ordinal logistic regression was used to assess associations between Quintiles of the inflammatory markers and terciles of dietary patterns adjusting for potential confounders.

**Results:** Higher adherence to a vegetable-poor dietary pattern was linked to elevated MPO levels (adjusted OR, 1.7 95% CI (1.1, 2.8)). Increased neopterin levels were borderline associated with a carbohydrate-dense pattern (adjusted OR, 2.4 95% CI (0.9, 6.0)), and significantly associated

with a vegetable-rich pattern (adjusted OR, 2.5 95% CI (1.0, 6.0)). No significant relationships were found between dietary patterns and systemic inflammation markers (LBP and CRP).

**Conclusions:** These findings suggest a link between vegetable-poor diets and intestinal inflammation but not systemic inflammation. Despite evidence of intestinal inflammation, there was no observed evidence of systemic inflammation, suggesting that diet impacts non-communicable diseases through pathways other than the intestinal inflammation-intestinal permeability-systemic inflammation axis. However, the cross-sectional nature of the study limits establishing causality, emphasizing the need for further investigations, particularly longitudinal studies, to understand how dietary habits influence various pathways in the pathophysiology of diabetes in this population.

**Title: Comparing the undergraduate dental curricula of four African dental schools: Identifying commonalities and differences for mutual benefit**

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**Abstract**

**Background:** The wide variation in the content and structure of African dental curricula result in differences in the standards which can jeopardize the development of dental education. This

study aimed to compare the dental curricula in four African countries, share best practices, and explore the possibility of establishing common standards for dental graduates in Africa.

**Methods:** Document analysis of curriculum contents was carried out by examining the formal curriculum handbooks, reports, and related documents from each dental school. The collected data were collated, mapped, and compared in tables to identify commonalities and differences.

**Results:** All four dental schools incorporated components of community-based education, as well as horizontal and vertical integration, with clearly articulated consideration of local, societal, and contextual factors in their mission statements. Similarities were observed in teaching methods and assessment strategies, although variations existed in program duration and the description of graduate requirements and competencies. Furthermore, the description of curriculum content for the four schools revealed differences in the sequencing of preclinical and clinical subjects, as well as the scope of elective courses.

**Discussion:** The shared inclusion of a community-based curriculum structure among all four dental schools presents an opportunity for future collaborations, facilitating the exchange of research resources and expertise aimed at addressing specific oral health diseases across Africa.

This similarity further enables the dental schools to focus on interests with global impact collaboratively. While broad similarities were observed in teaching and assessment strategies, further interrogation is necessary to establish their actual implementation.

**Conclusion:** A notable commonality observed among the four schools is the strong emphasis on community-based education deeply integrated into their respective societies. These results hold the potential to inform and promote the expansion of curricular reviews across the continent, an area that has not received adequate priority in the past.

**Keywords:** undergraduate dental curriculum, community-based curriculum, curricula, dental Schools

**Title: “Malkia wa Malengo” Intervention Prototype testing: The INSPIRE Project**

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#### **Background**

Every day, 20,000 babies are born to adolescent mothers in low- and middle-income countries (LMIC), with the highest rates found in Africa. Kenya is among the top ten countries for the highest rates of adolescent pregnancy. Adolescence is typically a period marked with social, economic, relationship challenges. For pregnant adolescents and young mothers, challenges are further perpetuated by gender discrimination and exclusion from education. These challenges result in increased vulnerability for mental health problems with estimates of up to 1 in every two adolescents experiencing a mental health condition during pregnancy and the year after birth (the perinatal period). As mental wellbeing during this time is critical to a range of maternal and infant outcomes, it is vital that interventions to support adolescent girls during this period are appropriate and accessible.

Using a human-centred, systems-minded design approach, complemented by implementation science methods, the INSPIRE project co-designed the Malkia wa Malengo programme to improve adolescent (aged 15-19 years) perinatal mental health in Kenya. This presentation will provide its preliminary pilot implementation results.

### **Methods**

A mixed-method, cluster-randomised, Hybrid Type 2 pilot trial is being conducted among 40 adolescent girls (aged 15-19 years). Girls in the intervention arm (n=20) will receive the Malkia wa Malengo programme alongside usual care. Girls in the control arm (n=20) will receive the usual perinatal care offered in their community. Data on the feasibility, acceptability, appropriateness and satisfaction of provider training and the Malkia wa Malengo programme will be collected from girls in the intervention group and intervention providers. Data on mental health symptoms, quality of life, social support and obstetric and caregiving behaviours will be collected from girls in both study arms.

### **Results:**

The pilot is currently being conducted with and data collection anticipated to be completed in June 2024. Initial data on implementation and clinical outcomes will be presented

### **Conclusion:**

The Malkia wa Malengo programme has been co-designed with adolescents, their families, and communities to address their priority needs with feasible and acceptable delivery strategies. The findings of this pilot will add to the evidence to scale up effective mental health interventions. **Title: Engaging adolescent girls, their families and the community in the co-design of a perinatal mental health intervention: The Malkia wa Malengo Programme.**

**Authors:** Ms. Margette Hanselmann<sup>1</sup>, Ms. Evaline Lang'at Chepchichir<sup>1</sup>, Dr. Kethakie Lamahewa<sup>2</sup>, Prof. Marleen Temmerman<sup>1</sup> Dr. Tatiana Taylor Salisbury<sup>2</sup>

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### **Background**

Poor mental health among adolescent girls during the perinatal period has been found to have a significant detrimental effect on girls and their children. Few mental health promotion interventions have been developed for adolescents in sub-Saharan Africa despite the high prevalence of adolescent pregnancy. The Innovative approaches to adolescent perinatal wellbeing (INSPIRE) project used human-centered design, systems thinking and implementation science methods to co-design an intervention to improve the adolescent perinatal mental health in Kenya and Mozambique. This paper will discuss the development of the intervention, 'Malkia wa Malengo', programme, in Kenya.

## **Methods**

Girls and young women with an experience of adolescent pregnancy, their families, service providers and community influencers participated in a series of interviews, focus groups and observations, to better understand the challenges girls face during the perinatal period. Multi-stakeholder workshops were carried out in both countries to agree priority challenges to good mental health. Further workshops were facilitated to brainstorm potential solutions and develop tailored prototypes and delivery strategies for each context.

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## **Results:**

Eighty-one stakeholders took part in the formative and intervention development activities. There was agreement across sites on priority areas which included knowing about pregnancy including physical affects, preparing to be a mum, taking care of a baby, concerns about leaving school and preparing for the future. The resulting co-designed Malkia wa Malengo programme consists of nine group, individual and family meetings where girls discuss and learn how to look after themselves and their babies, strengthen life skills and plan for the future. Individual meetings provide an opportunity to tailor support to each girls' specific needs and screen for mental health conditions. It is delivered alongside usual care by respected mothers in the Community.

## **Conclusion:**

Local communities actively engaged in the development, resulting in an intervention deemed acceptable and appropriate for adolescent girls, and a delivery strategy which aligns with the strengths and resources of the target communities. The Malkia wa Malengo programme is currently being pilot tested to evaluate its potential for impact, sustainability and scale. INSPIRE has demonstrated that co-design approaches can be used to develop acceptable and appropriate mental health interventions and delivery strategies tailored to the existing setting.

## **SUBTHEME: Research towards attainment of SDGs**

**Title: University of Zimbabwe ENRICH program contributing towards the attainment of SDG 3 through development of research capacity among emerging researchers.**

**Authors:** Thokozile Mashaah<sup>1</sup>, Antony Matsika<sup>2</sup>, Felix Madya<sup>3</sup>, Miriro Muvoti<sup>4</sup> and Justen Manasa<sup>5</sup>

**Affiliations and Qualifications**

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- 2 University of Zimbabwe, MBA
- 3 University of Zimbabwe, MA
- 4 University of Zimbabwe, MBA
- 5 University of Zimbabwe, PhD

**Background and Objectives**

In line with Sustainable Development Goal (SDG) 3 which speaks to ensuring good health and well-being for all at all ages, the University of Zimbabwe (UZ) is implementing a Fogarty International Center funded research capacity building program entitled Enhancing Non-communicable Diseases Research and Innovation Capacity in Harare, Zimbabwe (ENRICH). The program seeks to train a critical mass of researchers at the UZ to become proficient in Non-Communicable Diseases (NCDs) research. Its focus is on the following diseases of national interest; Cardiovascular Diseases, Pulmonary Diseases, Hematology, Stroke and Neurological Diseases, Aging and Dental and Craniofacial Diseases. The long-term goal is to generate evidence for interventions to improve care outcomes for people with NCDs in Zimbabwe and sub-Saharan Africa.

**Description**

The ENRICH program which started in 2021 is using a multi-pronged approach for capacity building which involves: long-term training which encompasses the competitive recruitment of promising Masters (2 years long), Doctoral (3 years long) and Post-doctoral students (2 years long); medium-term training (including implementation science, leadership and management courses); short term training (including foundational and advanced courses); experiential learning which includes mentorship, mentored research projects and attachments/electives. This robust training program is buttressed with regular Works-In-Progress (WIPs) sessions to provide opportunities for trainees to be exposed to peer-to-peer mentoring. As part of the program outputs, students are ultimately expected to successfully complete their research studies within the restricted timelines; present their work at national, regional and international conferences as well to publish manuscripts in peer-reviewed journals and apply grants research grants or fellowships.

**Results and Lessons Learnt**

Three cohorts of 20 students focusing on the NCD priorities have been enrolled. These consist of 8 Masters, 8 Doctoral and 4 Post-doctoral students who are at various stages with majority finalizing their research protocols and working on their registration processes. Cohort 1 and 2 have undergone basic and advanced research methodology trainings whilst cohort 3 are still going through basic research methodology sessions. Regular monitoring and evaluation is

being done to check on progress and to quickly address issues that might arise during implementation. Several WIPs sessions have been done for all cohorts to assist the students to strengthen their research proposals and to provide them a practical platform for learning presentation skills and peer-to-peer reviewing. Ensuring students have protected time and adequate financial resources is critical for them to be able to achieve their milestones within the stipulated timeframes, especially in a low income resource environment that is undergoing economic challenges. Works-In-Progress sessions are an important platform for strengthening research skills through mentoring as an environment that brings together experienced researchers and students is availed.

### **Conclusion and Way Forward**

As the program is has now been running for over 2 years, a comprehensive midterm evaluation is being planned to assess the effectiveness of the strategies being employed by the program in achieving the intended outcomes. We believe by the end of the program period, a critical mass of emerging researchers skilled in NCD research would be established within UZ.

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### **RÉSUMÉ: Problématique de l'utilisation des antibiotiques dans les Hôpitaux Généraux de Référence Katuba, Kenya et Kisanga; Lubumbashi, RD Congo**

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**Contexte et objectif:** Les antibiotiques constituent une des classes médicamenteuses les plus prescrites. Ils sont le plus souvent prescrits de manière empirique ou probabiliste en l'absence de preuve microbiologique. Leur utilisation rationnelle fait partie des mesures indispensables pour la prévention de l'apparition de germes multi résistants. Cette étude a pour objectif général de contribuer à la bonne utilisation d'antibiotiques dans les hôpitaux généraux de référence de Lubumbashi.

**Méthodes :** Il s'agit d'une étude épidémiologique d'observation descriptive transversale réalisée pendant une période de trois mois (du 01 juillet au 01 Octobre 2022). La population d'étude était constituée des patients et des personnels soignants des Hôpitaux Généraux de Reference Kenya, Katuba et Kisanga. L'interview guidée par un questionnaire préétabli nous a permis de collecter les données, l'observation et l'analyse documentaire également. Les analyses des données ont été réalisés grâce aux logiciels Texte 2016, Epi Info version 7.1.2.2 et le Tableur 2016.

**Résultats :** Au cours de cette étude, 100% des patients interviewés ont été soumis aux antibiotiques. Les antibiotiques les plus utilisés ont été les  $\beta$ -lactamines avec une proportion de 38,7%, suivi de l'association de  $\beta$ -lactamine + Nitro-5-imidazole avec une proportion de 21,3% dans les HGR. La prescription des antibiotiques après les résultats para cliniques était plus représentée avec 75%. La moyenne d'antibiotique prescrit par patient a été de  $1,6 \pm 0,5$ . le nombre moyen d'association d'antibiotique était de  $2 \pm 0,4$ . La durée moyenne de traitement était de  $8,8 \pm 3,3$ . Le spectre d'action était le choix d'utilisation des antibiotiques le plus représenté avec 40%. Les coûts moyens (Franc Congolais) d'antibiothérapie étaient de 7 489,2  $\pm$  8 876,4 pour la monothérapie, 15 731,3  $\pm$  15 157,1 (Franc Congolais) pour la bithérapie et 30 777,8  $\pm$  19923,5 (Franc Congolais) pour la trithérapie.

**Conclusion:** L'amélioration de la qualité de la prescription des antibiotiques et la lutte contre le taux élevé de résistance des bactéries aux antibiotiques demeurent indispensables pour une meilleure prise en charge des pathologies bactériennes, la conduite de cette analyse a permis d'identifier les barrières propres à la population étudiée afin de faire évoluer les pratiques en faveur d'un bon usage des antibiotiques chez les professionnels de la santé.

**Mots clés:** Antibiotiques, Utilisation, Prescription, Coût, Hôpital.

**Authors:**

Roselyter Riang'a; Rael Onyango; Hellen Apila; Eunice Mwangi; Rosebella Iseme; Bridget Rugube; Florence Syevuo; Anthony Ngugi; Lukoye Atwoli

**Background and Objective**

Gender health equity remains a critical component of the Sustainable Development Goals (SDGs) agenda, with a focus on ensuring equal access to healthcare and improving health outcomes for all genders. This desk-top review offers a comprehensive analysis of the progress made and the policy challenges encountered in advancing gender health equity within the Kenyan context.

**Methods:**

A national and sub-national-level scoping review involving existing literature was conducted to identify key themes, trends, and challenges in advancing gender health equity within the country. Using the Population, Intervention, Comparison, and Outcomes (PICO) criteria, a comprehensive detailed search strategy was developed in consultation with experts in the field. The review methodology involved a rapid scoping of peer-reviewed articles, government reports, reliable national and global surveys/databases, and policy documents related to gender health equity in Kenya. We excluded non-English language publications, limiting non-peer-reviewed literature, publications that provide information solely about multi-country/regional efforts without any national information, publications that only provided normative guidance or potential approaches for implementation. Although the SDGs were ratified in 2015, We included literature published between June 2013 and July 2022 to capture early publications before the SDGs were formally adopted.

**Results**

The review highlights significant progress in promoting gender-responsive healthcare policies and interventions in Kenya, particularly in areas such as maternal and child health, family planning, and sexual and reproductive health. However, various policy gaps that perpetrate disparities in gender healthcare were identified. There are gender inequalities in the health systems where women who are the majority in this sector are predominantly nurses and have less authority as healthcare workers compared to men. In terms of protecting children from sexual abuse (CSA), Kenya has established protective laws but lacks comprehensive sexuality education legislation critical for fostering positive gender norms. There is a policy gap in adolescent contraception access. The mental health needs of Sexual and Gender Minority (SGM) individuals reveal a significant oversight in current policy frameworks. Persistent stigma and discrimination place SGM individuals at increased risk for negative mental health outcomes without adequate support structures or culturally appropriate services available. Menstrual hygiene management (MHM) focuses primarily on keeping girls in school rather than alleviation inequalities related to menstruation across different life stages identities. Kenya has made strides towards advancing MNCH, but there are persistent inequities amongst different demographics based on education, employment status, income level, place of residence, gender, and ethnicity dimensions that remain unaddressed.

**Conclusion**

These findings collectively suggest that while Kenya has implemented several progressive policies aimed at addressing various aspects related to genders more work remains especially regarding inclusivity and intersectionality, considerations of the diverse needs of marginalized groups including SGM individuals, and adult menstruators among others. The review underscores the importance of strengthening policy frameworks, enhancing resource mobilization, and fostering multi-sectoral collaboration to address the policy challenges hindering gender health equity in Kenya.

**Title: Student's Perceptions of the academic learning environment at the faculty of health sciences, Busitema University.**

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**Introduction**

The learning environment is defined as the physical, social and psychological structures in which a student learns. This influences motivation, satisfaction and students' outcomes through the impact on the students' perception of these learning environments. This study therefore, aimed at determining the students' perception of their academic learning environments as a way of understanding how to improve the learning outcomes.

**Methods**

We conducted a cross sectional study that employed both quantitative and qualitative methods at Busitema university, faculty of health sciences. The study was conducted among undergraduate students attending year three, four and five. The study involved 186 participants who were sampled consecutively and subjected to the DREEM questionnaire to determine their perception of their learning environment. We used Stata version 17 for analysis; P-values were calculated using Kruskal-Wallis's equality of populations rank test. A score of  $P < 0.05$  was considered statistically significant. Qualitative data was obtained through five focus group discussions with an average attendance of eight students. We conducted thematic analysis and five themes were obtained.

**Results**

We found a positive perception of the learning environment (125/200), with students scoring highest in the "students' perception of learning" (67.7%) and "students' perception of teachers" domains (59.3%). Females had higher scores in all domains, with the highest scores in year five.

However, students expressed concerns about infrastructure, staff engagement, academic pressure, and minimal student involvement. Specifically, students reported frustrations with lecturer absenteeism, poor facilities like lecture halls, libraries, student communal spaces and recreation amenities, intense academic workloads, and lack of holidays or co-curricular activities. They desired more interactive lecturing and student participation in institutional decisions.

## **Conclusion**

While students' perceptions are largely positive, enhancing infrastructure, staff development, curriculum modifications, student inclusion and work-life balance could significantly improve the learning experience at Busitema University. Keywords: Students, Perceptions, learning environment

## **Title: Assessing the Impact: Community-Led Monitoring via Digital Platform in Homabay County - Analyzing Implementation Achievements and Lessons**

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The ongoing implementation of community-led monitoring (CLM) through a digital platform in Homabay County has yielded significant achievements and valuable lessons. This project has focused on harnessing feedback from service recipients to drive action and foster positive change, thereby advancing a people-centered and sustainable health system.

CLM involves service users providing feedback data to identify and monitor issues related to the equity and quality of services they receive. Such data play a pivotal role in evidence-based advocacy and social accountability, particularly in programs addressing tuberculosis (TB), HIV, and malaria. This review aimed to assess the notable achievements and lessons learned from the implementation of this project.

The methodology employed a digital application system called IMonitor digital App, which enables peer monitors to report issues online and engage in real-time conversations with superusers via their mobile phones. In Homabay County, this approach empowered peer monitors to report issues related to various thematic areas such as commodity availability, service delivery, human rights, treatment literacy, and support groups. Peer monitors were trained and stationed at facilities to interact

with facility teams and report issues using the App. Data collected between 2022 and February 2024 were analyzed quantitatively in terms of percentages and proportions, while qualitative data underwent thematic analysis.

During the review period, a total of 654 issues were raised through the digital platform. Of these, 172 (26%) were resolved, 174 (26%) were validated, and 242 (37%) were deactivated. Commodity and service delivery issues collectively accounted for the majority (68%) of the raised issues. Service delivery issues comprised the largest proportion (94%) of validated issues, while commodity issues constituted the majority of resolved issues. The availability of commodities showed improvement over time, although challenges such as the inadequate number of healthcare workers, particularly at dispensaries and health centers, persisted within Homabay County.

The dissemination of progress reports was conducted periodically through review meetings involving stakeholders such as citizen advocates, social mobilizers, adolescent girls and young women (AGYW) champions, peer monitors, health department leaders, and partners. In conclusion, this project underscores the significance of data-driven and systematic monitoring in strengthening CLM practices. Identifying and addressing bottlenecks are essential steps toward enhancing the quality of care and service delivery. The findings highlight the importance of ongoing efforts to leverage technology and community participation for sustainable improvements in healthcare delivery systems.

**Title: High prevalences of Diabetes mellitus and Hypertension among people living with HIV in Eastern Uganda, July 2023.**

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**Introduction:** Hypertension (HTN) and Diabetes mellitus (DM) significantly affect People living with HIV (PLHIV) causing mortality and morbidity but their burden and association with HIV is poorly understood in Uganda. This study assessed DM and HTN prevalence and associated factors among PLHIV in Eastern Uganda.

**Methods:** A cross-sectional quantitative study was conducted at HIV clinics in Mbale Regional Referral Hospital and Bugobero Health Center IV, Eastern Uganda. Participants included patients with HIV, aged  $\geq 18$  years, and willing to take fasting blood glucose tests. Systematic random sampling was used; trained research assistants conducted interviews using semistructured questionnaires, anthropometric measurements, blood pressure, and fasting blood glucose. HTN was defined by systolic blood pressure  $>140$  mmHg and/or diastolic  $>90$  mmHg (measured twice at a 15-minute interval) or on antihypertensives. DM was defined by fasting blood glucose  $>7$  mmol/L or on antihyperglycemics. Data was analyzed using STATA 15.0, involving bivariate and multivariable logistic regression analyses. Statistical significance was at  $P < 0.05$ .

**Results:** We surveyed 400 participants with a mean age of 46.5 years (SD: 12.4); the majority were female ( $n=261$ , 65.3%). Prevalence rates for HTN and DM were 37.5% and 12.5%, respectively, with 7.8% exhibiting both conditions. HTN was associated with obesity (aOR: 7.6, 95% CI: 2.10-11.6,  $p=0.001$ ), while DM with  $\geq 15$  years of HIV (aOR: 0.2, 95% CI: 0.1-0.8,  $p=0.022$ ), ART with a protease inhibitor (aOR: 3.9, 95% CI: 2.4-8.2,  $p=0.010$ ), and family history of DM (aOR: 3.6, 95% CI: 1.5-8.1,  $p=0.002$ ). Both HTN (aOR: 2.0, 95% CI: 1.2-3.2,  $p=0.005$ ) and DM (aOR: 2.5, 95% CI: 1.1-5.8,  $p=0.022$ ) were associated with being  $\geq 50$  years.

**Conclusion:** There is a high prevalence of DM and HTN among PLHIV in Eastern Uganda. The interplay of ART, lifestyle factors like obesity, genetics like family history, and advancing age collectively contribute, underscoring the need for preventive strategies targeting modifiable risk factors for PLHIV.

## **Title: Understandings and practices: Towards socially responsive curricula for the health professions**

**Background:** Global health inequities have created an urgency for health professions education to transition towards responsive and contextually relevant curricula. Such transformation and renewal processes hold significant implications for those educators responsible for implementing the curriculum. Currently little is known about how health professions educators across disciplines understand a responsive curriculum and how this understanding might influence their practice. We looked at curricula that aim to deliver future health care professionals who are not only clinically competent but also critically conscious of the contexts in which they serve and the health care systems within which they practice.

**Summary of work:** We conducted a qualitative study across six institutions in South Africa, using focus group discussions (24) and in-depth individual interviews (47), to explore (i) how do health professions educators understand the principles that underpin their health professions education curriculum; and (ii) how do these understandings shape their teaching practices? One hundred and one health professions educators

participated in the study. The transcripts were analysed thematically following multiple iterations of critical engagement to identify patterns of meaning across the entire Dataset.

**Summary of results:** The results reflected a range of understandings related to knowing, doing, and being and becoming; and a range of teaching practices that are explicit, intentionally designed, take learning to the community, embrace a holistic approach, encourage safe dialogic encounters, and foster reflective practice through a complex manner of interacting.

**Discussion and conclusion:** To drive transformation towards socially responsive and contextually relevant curricula in HPE requires a collective endeavour across a network which includes the health professions educators, the students, the communities, and the patients. The understanding and teaching practices that health professions educators bring are of fundamental importance to this transformation of the curriculum. Therefore, educators need to undergo a process of self-introspection towards becoming critically conscious of the contexts and systems that continue to perpetuate health inequalities.

**Take home messages:** Our healthcare systems need graduates who are both clinically competent and critically conscious of the system and society they must serve. Critical consciousness is something that can be known and enacted leading to new ways of knowing and doing. Within responsive curricula an internal process of being and becoming, built on self-awareness and critical reflexivity by the teacher and student is required.

**Title: Evaluating the effects of insulin, metformin and glibenclamide on the maternal parameters and pups' prefrontal cortex and some biomarkers of streptozotocin-induced diabetic pregnant Wistar Rats**

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**Introduction:** There is an upsurge in gestation diabetes mellitus (GDM) with many devastating consequences for the mother and developing fetus. Insulin therapy remains a mainstay. However, it is expensive and comes with the pain of multiple injections. Therefore, there is a need to explore commonly administered oral hypoglycemic agents to cater for the increasing GDM neurological complications. This study assesses the effects of glibenclamide, metformin and insulin on the pups' prefrontal cortex in diabetic pregnant Wistar rats.

**Method:** Thirty-five sexually matured adult female Wistar rats weighing between 120g – 160g were used and assigned into five groups (A - E) of seven rats each. Diabetes was induced by streptozotocin (45 mg/kg and 35 mg/kg; ip). Hyperglycemic rats were treated with insulin (1UI daily), metformin (200 mg/kg/day) and glibenclamide (0.6 mg/kg/day). Body weight and blood glucose levels were evaluated. Animals were sacrificed at 18-day gestation, the pups were harvested, and their brains were processed for tissue oxidative stress markers and various histological examinations.

**Results:** Glibenclamide and metformin caused a significant ( $P < 0.05$ ) blood glucose reduction at (37.9%) and (40.7%) respectively compared to the insulin group (33.09%). There was no significant difference in the body-organ ratio in rats treated with metformin when compared to rats treated with insulin. Metformin and glibenclamide had a significant ( $p < 0.05$ ) increase in tissue glutathione reductase (GSH) and a decrease in malondialdehyde (MDA) compared with insulin and diabetic control groups. The pups' prefrontal cortex showed degenerated neuronal cells in the diabetic control animals. The diabetic rats treated with metformin and glibenclamide showed improved pyramidal neurons compared with diabetic and insulin groups.

**Conclusion:** These findings suggested that metformin and glibenclamide glycemic control may prevent and improve antioxidant enzymes and reverse some neurotoxic effects caused by streptozotocin-induced diabetes in Rats. However, further studies are required to ascertain their safety during the pregnancy.

**Keywords:** Glibenclamide, metformin, insulin, cerebral cortex, streptozotocin, diabetes, Wistar rats.

### **Title: Experiences of Registered Nurses Providing Care During the Covid-19 era in Botswana: A case of Sir Ketumile Masire Teaching Hospital and Sekgoma Memorial Isolation Centre**

**Background and objectives:** The Covid-19 pandemic has shed a spotlight on nurses and reinforced the essential role they have in healthcare systems worldwide. The negative effects of Covid-19 on nurses across the globe is slowly being reported but documentation of nurses experiences in developing countries like Botswana has not been done, although they had perilous roles and responsibilities of patient care during the Covid-19 pandemic. Understanding the experiences of nurses working in Covid-19 isolation areas offers a body of unknown knowledge about similar situation in Botswana's context. The objective of the study was to explore the experiences of nurses who worked in selected Covid-19 isolation centres in Botswana

**Methods:** The study involved exploring and describing RNs' experiences through an exploratory, descriptive, phenomenological research design. Nurses were purposefully sampled in two isolation centres, interviewed face to face until data saturation was reached. Data was

collected using phenomenological, in-depth, individual interviews which lasted between 45-60 minutes and analysed using Giorgi's method of qualitative data analysis.

**Results:** Nineteen nurses aged 23 – 47 years were interviewed and the data revealed four themes and sub-themes. The themes were Professional challenges in care and treatment, Excessive fear of occupational exposure and infection with Covid-19, and Positive experiences as a frontline workers.

**Conclusion:** The results pointed to a need for nurses to be supported when caring providing care during pandemics primarily to enhance their wellbeing

**Title: Improving the All Services indicator in the Children and Adolescent living with HIV (CALHIV) Audit Tool through effective regular reviews of the tool**

Authors: Mr. Shafik Malende<sup>1</sup>, Dr. Paul Lwevola<sup>1</sup>, Dr. Samuel Kawuma<sup>1</sup>

1. Makerere Joint AIDS Program Local Partner Health Services East Central region (MJAP LPHS EC)

**Introduction:** By April 2023, MJAP LPHS EC had 89.3% (4488/5023) of the CALHIV in care accounted for in the audit tool with only 37% (1660/4488) CALHIV receiving All the services they were eligible for which is below the ministry of health target of 95%. Specifically, suboptimal performance was noted in the indicators of viral load coverage, appointment keeping and multi month dispensing (MMD). These all affected the performance of All services indicator thus indicating that the tool was used for reporting and not for planning purposes. The project thus developed strategies to improve the All services indicator in the CALHIV audit tool from 37% in April 2023 to 95% by Sept 2023 through weekly review of the CALHIV audit tool.

**Methods:** The capacity of facility teams was built through onsite mentorship on how to update and utilize the audit tool for micro planning. Clear deliverables were shared with the stakeholders involved in the updating and review of the tool. Weekly review of the audit tool was instituted with the site teams who provided accountability on the frequently missed services and continuously reviewed health facility processes to identify any inefficiencies in updating of the tool. The review facilitated the sharing of service gaps with partners such as those targeting orphans and vulnerable children for follow up. Furthermore, resources required to support the facility teams with the updating and patient tracking were availed.

**Results:** A total of 10 weekly review meetings were held with the All services indicator significantly improving from 37% to 76% (3,589/4,746) in the same period. Comparison between the audit tool for April 2023 and June 2023 showed improvement in viral load coverage from 83% (3,388/4,067) to 89% (4,051/4,560); MMD uptake from 81% to 87% and appointment keeping from 85% to 97%.

## Conclusions

Regular review of the audit tools facilitates stakeholder involvement, learning, encourages active participation to enhance holistic understanding of tasks and identification of areas of potential improvement. It also improves quality of services provided as evidenced by improvement in particular service indicators.

## Title: **Uberculosis and HIV-coinfection in children at a tertiary hospital in Zambia: A 15year retrospective review of TB notifications**

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**Background:** HIV-positive children are disproportionately affected by TB. There have been many programmes targeting HIV and TB elimination. We aimed to explore the prevalence and trends in childhood TB-HIV coinfection from 2007 to 2021 at a tertiary hospital in Zambia.

**Methods:** We conducted a retrospective observational study at the University Teaching Hospitals Children's Hospital in Lusaka, Zambia. All children aged 0 to 15 years diagnosed with TB between 2007 and 2021 recorded in hospital TB registers per national TB guidelines were included. A complete enumeration of eligible children in the registers was conducted using a hospital-validated data-collection tool. We collected sociodemographic and TB/HIV data and fitted linear regression models to assess trends in subgroup-specific TB-HIV coinfection rates.

**Results:** Among 6075 children diagnosed with TB, 52% were male, 96% had a documented HIV status, and the overall prevalence of TB-HIV coinfection was 46.2%(95%CI: 45.0-47.5). The prevalence among females was 47.3%(95%CI: 45.5-49.1) and among males was 45.2%(95%CI: 43.5-47.0). The median age was 3 years(IQR: 1 - 8 years).

In the fitted models, the overall baseline prevalence of TB-HIV coinfection was 55% (95%CI; 47-63) reducing annually at -1.3%(95%CI; -2.3% to -0.37%, p=0.011). Infants had the highest coinfection baseline(70%; 95%CI; 61-79) reducing at -2.5% per year. Coinfection in children aged 1-4 years and 5-15 years reduced at -1.3% per year (95%CI; -2.4% to -0.24%, p=0.020)

and -0.71% (95%CI; -1.8% to 0.33%, p=0.20) respectively from a baseline of 50%(95%CI: 41-59) and 52%(95%CI: 43-60). Coinfection in males and females reduced at -1.4% per year(95%CI; -2.4% to -0.45%, p=0.008) and -1.2% per year(95%CI; -2.2% to -0.22%, p=0.021) from 54% and 55% respectively.

**Conclusion:** We highlight a reduction over time in TB-HIV coinfection rates among children, suggesting the effectiveness of childhood TB/HIV-elimination activities and the need to sustain and expand them. Trends incorporating nationwide treatment outcomes and the efficacy of specific elimination programs should be assessed in the future.

**Key Words:** HIV, TB, Children, trends, prevalence, coinfection

**Title: “Utilization of health services almost went down.” The effects of the COVID-19 pandemic on health programs in Uganda**

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#### **Background**

The COVID-19 global epidemic caused disruptions across services for all major health areas worldwide. We set out to explore the effects and implications of the COVID-19 pandemic on

health programs in Uganda. The study is critical for effective strategic planning for the continuity of essential services amidst public health events such as pandemics in Africa.

### **Methods**

A qualitative study was conducted with Key informant interviews. We purposively selected 15 Ministry of Health technical staff and 15 Implementing and development partners engaged in COVID-19 implementation or planning programs. Interviews were conducted in the English language between May to June 2023. They were recorded on audio devices and verbatim transcription was done for each interview. Content analysis was carried out using an inductive approach with support of NVivo software version 14; codes were organized into subthemes and then themes. We present the frequent codes from the analysis.

### **Results**

The study revealed that COVID-19 had both positive and negative impacts on healthcare services. Positive impacts included improvements in health infrastructure, emergency medical services such purchase of more ambulances as the purchase of more ambulances and financial aid. Negative impacts included disrupted access to healthcare facilities due to movement restrictions, compromised quality of care for non-COVID-19 patients, lack of medical supplies, increased workload for health workers, and mistrust in the government. Suggestions for improving health service delivery during future pandemics included strategic planning for emergencies, investment in health infrastructure, increasing awareness on COVID-19, and ensuring continuity of health services.

### **Conclusion**

Robust emergency preparedness for pandemics is required to better respond to emergencies with minimal disruption of other health programs. Improving health service delivery during a pandemic for all patients, especially those with multi-morbidities like NCDs and HIV, requires a collaborative effort between multidisciplinary stakeholders, including patients, caregivers, and healthcare workers. There is a need to ensure continuity of health service delivery, strengthening Integration of COVID-19 care and management in routine health services during pandemics by effective management of people with chronic diseases and HIV.

**Keywords:** Ministry of Health, Programs, COVID-19 pandemic

**Title: Health Leadership Perspectives regarding facilitators and barriers to COVID-19 vaccination acceptability in Uganda**

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## **Background**

Despite the effectiveness of COVID-19 vaccination in reducing transmission, morbidity, and mortality, rates of COVID-19 vaccination remain suboptimal in many low- and middle-income countries. This study explored the perspectives of senior technical staff at the Uganda Ministry of Health and key implementing partner organizations about facilitators and barriers to COVID-19 vaccination acceptability in Uganda.

## **Methods**

We conducted a qualitative study where we purposefully selected 15 Ministry of Health technical staff and 15 Implementing and Development partners engaged in COVID-19 implementation or planning programs in Kampala, Uganda, for key informant interviews. Selection was based on positions of leadership or influence of essential services as defined by the WHO checklist for COVID-19. Data were collected between May and June 2024. The interviews were recorded and supported by written notes, each interview was transcribed verbatim. Data were coded by three independent researchers. Codes and emergent themes were agreed upon after a consensus among the coders. NVIVO version 14 software was used to manage data and support the analysis process. Common codes are presented.

## **Results**

Data analysis revealed three themes: facilitators, barriers, and strategies for improving COVID-19 vaccination uptake. Respondents highlighted that the accelerated vaccination campaigns on COVID-19 supported increased vaccine uptake by promoting vaccination for priority groups like the elderly and health workers. Community health workers (village health teams, VHT) linked to the immunization and vaccination outreach programs at community levels within the country enhanced vaccination. Outreach approaches were made, and several mobilization techniques, like mobile drives, were used to campaign and promote COVID-19 vaccination uptake. Wellstructured systems, such as infrastructure and human resources for the vaccination programs at selected health facilities and community outreach, enabled COVID-19 vaccination. Limited awareness due to a lack of facts about COVID-19 vaccination was the most stated hindrance to vaccine uptake among the Public. Generally, there were a lot of unaddressed myths and misconceptions about the Vaccine arising from anti-vaccine campaigns, especially from media channels like exaggeration of side effects such as Vaccine causing infertility, reduced life span, and that vaccines were experimental. Other Public concerns about the Vaccine were around the short production-approval period of the vaccines, short efficacy of available vaccines ('one year'), and short research-production timelines, heightening doubts that increased vaccine hesitancy among the Public. The high cost of vaccines and the failure to manufacture vaccines locally increased vaccine costs and donor dependency. Many community members disliked mandatory vaccination. In addition, healthcare

workers reported barriers to vaccination service delivery, such as limited COVID-19 vaccines and inadequate staff to perform COVID-19 vaccination activities. Healthcare workers were concerned about vaccine-related adverse events among users and how they could manage them. Poor marketing for the vaccination services and integration of vaccination with other health services was reported among the healthcare workers. Participants suggested strategies to increase COVID-19 vaccine uptake, such as improving the regular availability of vaccines, establishing vaccination campaigns for continuous sensitization about the benefits of vaccination, and resolving false information about vaccination. Other recommendations to improve COVID-19 vaccination implementation included  
Prioritizing vaccine uptake by strengthening financial mobilization for conducting mass COVID19 vaccination in designated places, setting up mobile vaccination clinics and training healthcare workers and other teams in communities, and integrating COVID-19 vaccination in routine immunization services.

### **Conclusion**

We found that outreach programs and community health workers are helpful in promoting COVID-19 vaccine acceptance. However, certain issues like misinformation, cost, and accessibility remain. Health managers suggest enhancing vaccine availability, targeted information campaigns, and integrating vaccination services into existing programs.

**Keywords:** COVID-19 vaccination, Ministry of Health, programs

### **Title: Malaria prevalence and determinants of optimal intermittent preventive malaria therapy and insecticide-treated nets among pregnant women in Southern Busia, Kenya**

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**Introduction:** Pregnancy malaria is a significant public health concern, particularly affecting pregnant women. Three doses of sulfadoxine-pyrimethamine (SP) for intermittent preventive treatment of malaria in pregnancy (MiP) and the use of insecticide-treated nets are recommended for maximum protection. These interventions can avert the adverse effects of malaria in pregnancy-associated maternal anemia, intrauterine deaths, preterm delivery, and low birth weight (LBW).

**Methods:** This cross-sectional study was aimed at determining the prevalence of malaria and factors influencing the uptake of optimal doses of intermittent preventive malaria therapy and the use of insecticide-treated nets among pregnant women between 15 - 49 years of age, attending antenatal and postnatal clinics in Port Victoria and Sio Port Sub County Hospitals, Busia County, Western Kenya. Quantitative data was collected from pregnant women and postdelivery women who consented from May to September 2023.

**Results:** Preliminary findings show that 168/303 (55.5%) of the women were from Samia sub-county. The participants mean age was  $24.79 \pm 5.95$  years, 226/303(74.6%) were protestants, 233/303(76.9%) were married, 243/303(80.2%) were unemployed, 148/303(48.5%) had attained primary level of education and 197/303(65.0%) cited good relations with the healthcare workers. On knowledge, 38/303(12.5%) knew dangers of malaria in pregnancy, 130/303(42.9%) knew the optimal doses while 108/303(35.6%) knew when to start using IPTp-SP. The prevalence of malaria was 35.1% (95% CI: 29.7%- 40.5%). Optimal IPTp-SP uptake was 55.78% (95% CI: 50.1% - 61.3%) while ITN use was 98% (95% CI: 96.1%- 99.3%). Predictors of IPTp-SP optimization were the frequency of antenatal care (ANC) visits ( $P < 0.001$ ) and maternal knowledge of IPTp-SP start time ( $P < 0.02$ ). Odds of optimizing IPTp-SP increased among women with  $\geq 4$  ANC visits (Odd Ratio = 5.30, 95% CI 3.0–9.39), and those with knowledge of IPTp-SP start time (Odd Ratio = 2.1, 95% CI 1.13–3.7). There were no significant predictors for ITN use.

**Conclusion:** This study has found a high prevalence of malaria and low IPTp-SP optimal uptake in the study area hence underscoring the need for targeted interventions.

**Title: Prevalence of Patient-Centered Care (PCC) in HIV guidelines in Eastern and Southern Africa: A multi-country content analysis of government documents.**

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## **Background and Objectives**

Over 38 million people are living with Human immunodeficiency virus (PLHIV) globally with Eastern and Southern Africa accounting for 53% of PLHIV.<sup>1</sup> SDG 3.3 relays the global commitment to end the AIDS epidemic by 2030; with only 6 years remaining, enhanced concerted efforts are required. Patient-centred care (PCC) involves respecting patients' needs and values and leads to improved patient satisfaction, adherence and quality of care<sup>2</sup>. Despite the value of patient-centred care (PCC) in management, there remains limited data regarding the presence of such content in guidelines/policy. This study aims to characterize the prevalence of PCC content in HIV guidelines.

## **Methods**

Official HIV guidelines/policies of countries classified under Eastern and Southern Africa region, by Joint United Nations Programme on HIV/AIDS (UNAIDS) were retrieved online. Each document was scored by two independent investigators utilizing a customized assessment tool based on PCC framework of health system components by Santana et al. <sup>3</sup> with a total score of 27 over 7 components, assessed in binary. Interrator reliability was assessed using Kappa's Coefficient. Summative and non-parametric statistics were performed in R.

## **Results**

Total of 25 policies were included from 18 countries. Kappa's coefficient for all policies was 0.71,  $p < 0.01$ . Policies from Zambia had the highest total score (13/27), whilst Mauritius and Madagascar had the lowest (0/25 and 4/25), with median (IQR) for Southern Africa and Eastern Africa, 11/25 (8.5-12) and 10/25 (10) respectively. Stratified by component, developing educational programmes for PCC in HIV recorded the highest total score overall (57.3%) whilst measuring and monitoring PCC the lowest (24.0%) with inter-regional analysis ( $p = 0.09$ ) and inter-component analysis ( $p < 0.01$ ).

## **Conclusion**

The low prevalence of PCC in all countries' HIV guidelines is concerning and presents an opportunity to further develop holistic content in guidelines that is patient-centred. Provision of PCC will be integral in tackling the AIDS epidemic. Furthermore, more studies are warranted.

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**Title: Social support, food insecurity and HIV stigma among men living with HIV in rural southwestern Uganda.**

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### **Background**

HIV stigma is a significant factor in HIV/AIDS care, influencing uptake of HIV care services including HIV testing, initiation on antiretroviral therapy (ART) and retention in care. This is due to the fear of status disclosure and social discrimination. Internalized HIV stigma has been documented to be more common in men and it has the most impact on treatment adherence among people living with HIV. Information about HIV stigma and its associated factors among men living with HIV (MLWHIV) in rural Uganda is limited. This study determined the burden of HIV stigma and its associated factors among men accessing HIV/AIDS care at a rural health facility in southwestern Uganda.

## Methods

This was a clinic-based cross sectional study. We consecutively enrolled 252 adult men accessing HIV/AIDS care at a rural health centre in southwestern Uganda during the Corona virus pandemic. We collected information on sociodemographic information, HIV stigma using the Berger stigma scale, social support using the Multidimensional Scale of Perceived Social Support and food insecurity using the Household food insecurity Access Scale. We fitted modified Poisson regression models to determine the associations between social support, food insecurity and HIV stigma.

## Results

The mean HIV stigma score of the study participants was 70.08 (SD 19.34) and almost half (48%) of the participants had high level HIV stigma. Most participants (75%) reported food insecurity, 5% of whom had severe food insecurity. The risk of HIV stigma was lower among those aged 35 years and above (adjusted risk ratio [ARR]=0.89; 95% CI 0.83–0.96; P=0.003, those who had been on ART for more than 5 years (ARR=0.92; 95% CI=0.84–0.99; P=0.04), and those who had social support (ARR=0.99; 95% CI=0.98–0.99; P=<0.001). Food insecurity was associated with an increased risk of HIV stigma (ARR=1.07; 95% CI 1.00–1.15; P=0.03). Social support moderated the effect of food insecurity on HIV stigma (P=0.45).

## Conclusion

HIV stigma is common among MLWHIV in rural Uganda and is significantly associated with food insecurity. Social support moderated the effect of food insecurity on HIV stigma. To end the AIDs epidemic by 2030, we thus recommend social support interventions and economic empowerment of MLWHIV to improve their HIV treatment outcomes.

## Title: The Biopsychosocial Effects Of Amputation On Transtibial Amputees In Kwazulu-Natal

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**Background:** The third sustainable development goal draws attention to ensuring healthy lives and the promotion of well-being of all ages. Working towards achieving this goal, the challenges faced by individuals with disability need to be thoroughly understood. A myriad of physical, psychosocial, and environmental sequelae are associated with limb loss. However, there is a paucity of empirical South African data, which focuses on these sequelae, how they interface with the amputee's quality of life as well as the challenges they experience following amputation.

**Objective:** This study sought to explore the biopsychosocial effects of amputation and how amputation affected the quality of life of transtibial amputees.

**Setting:** Participants were recruited from a medical facility, under the KwaZuluNatal Department of Health in South Africa.

**Methods:** A qualitative approach guided this study. Data was collected using one-on-one, semi-structured interviews with 14 unilateral transtibial amputees. Data was analysed thematically.

**Results:** Five broad themes emerged from the inquiry, which captured amputees' experiences of phantom limb pain, body image disturbances, and their challenges related to adapting to performing activities of daily living. Participants also expressed the salience of familial support and the importance of psychological interventions to cope with their new reality.

**Conclusion:** The findings suggested that support networks and professional psychological intervention are imperative in facilitating successful adjustment to the amputation experience.

Raising awareness of limb loss in both, rural and urban settings may help reduce the stigma attached to it.

**Contribution:** Quality of life comprises several domains, namely physical, psychological, environmental, and social albeit limited local and international data exists regarding the environmental and social effects. This study brought to the fore the positive and negative 3 effects of amputation in each domain, as well as various strategies which facilitate successful adjustment to amputation.

**Keywords:** amputation; quality of life; biopsychosocial; phantom limb pain; support; feelings; body image.

**Title: Burden of prostate cancer and diagnostic performance of Prostate Specific Antigen among community-dwelling African men aged  $\geq 40$  years**

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**Background:** Serum prostate-specific antigen (PSA) is a common marker for prostate cancer (Pca) screening, typically with a cutoff point of 4 ng/mL. This cutoff, originally from non-native African populations, may not apply universally. This study investigates burden of the disease in the Tanzanian community as well as PSA's correlation with Pca diagnosis.

**Methods:** This community-based prostate cancer screening took place in four regions in Northern Tanzania from May to September 2022, involving men aged  $\geq 40$  years. Five milliliters (ml) of venous blood were collected from each

participant for PSA determination. Participants with PSA levels >4 ng/ml were invited for tru cut biopsy of the prostate. Two independent pathologists performed histological evaluation of the biopsies. Analysis was done by STATA version 16.0. PSA levels were categorized as >4-10, >10-20, >20-50, 50-100 and >100ng/mL. Each PSA category was evaluated for its correlation with positive biopsy, sensitivity, specificity, positive predictive value, negative predictive value and area under receiver-operating characteristic (AuROC) for segregating a negative from a positive biopsy. P value <0.05 was considered statistically significant.

### **Results:**

The study involved 6164 African men with an average age of 60±11 years. Among them, 912(14.8%) had PSA >4 ng/mL, and hence 581 (63.7%) underwent true cut biopsy, whereby 179 (30.8%) were histologically diagnosed with adenocarcinoma of prostate with an overall prevalence of 3%. High Gleason scores (8-9) were present in 46 (25.7%) of cases. Over 2/3 (64.7%) of participants with PSA >20 ng/mL had prostate cancer, reaching nearly 100% at PSA >100 ng/mL. A positive correlation between PSA levels and Pca as well as aggressive disease, was observed. The optimal PSA cut-off was found at >10 ng/mL. PSA demonstrated 84% overall ability to distinguish Pca from non-cancer cases and a 71% ability to differentiate aggressive from non-aggressive disease.

**Conclusion:** This study revealed that 3% of screened participants were diagnosed with Prostate cancer, indicating the need for intervention. Moreover, PSA demonstrated excellent capacity in distinguishing prostate cancer from noncancer cases among African men aged 40 year and above. Notably, PSA levels exceeding 100ng/mL reliably signified prostate cancer, presenting a basis for initiating androgen deprivation therapy in men aged 70 year and above, particularly in situations where biopsies are impractical.

**Key words:** PSA, Prostate cancer, African and correlation

**Title: High burden of Erectile dysfunction among men living with HIV in Northern Tanzania call for evidence-based interventions.**

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## **Background:**

The high burden of Erectile dysfunction(ED) among men living with HIV (MLHIV) and associated risk factors remains unclear. The aim of this study was to investigate the factors associated with ED and its prevalence among MLHIV in Northern Tanzania.

## **Methods**

A hospital-based multicentered cross-sectional study conducted among MLHIV aged 18 years and above in Northern Tanzania.

## **Outcome**

The risk factors for ED and the prevalence of such risk factors among MLHIV was assessed and evaluated through a multivariate logistic regression adjusted for depression symptoms using the Patient Health questionnaire-9 scale(PHQ9), anxiety

disorders using the Generalized anxiety Disorder Assessment(GAD-7),ART adherence, viral load, initial regimen date, ART regimen and sexual risk behaviour.

### **Results:**

Data of 366 participants with median age of 50 years (IQR 38-57) was available for analysis. About three in four (74.6%) MLHIV had ED, whereas 37.7% had mild ED. Majority (96.5%) of the participants had low testosterone, two in three (66.7%) had depressive symptoms, and close to half of the participants (48.4%) had anxiety. Age, absence of vigorous activities, depression and self-reported good adherence to antiretroviral therapy (ART) were associated with ED in multivariate logistic regression ( $p=0.004$ ,  $p=0.006$ ,  $p=0.07$ ,  $p=0.006$  and  $p=0.004$  respectively ).

### **Conclusion:**

There is a high prevalence of ED among MLHIV in Northern Tanzania. Erectile Dysfunction should be regarded as one of the co-morbidities associated with HIV and should be routinely screened among MLHIV in CTC clinics.

**Keywords:** Men Living with HIV, Erectile dysfunction, Tanzania.

### **Title: Green synthesis of silver nanoparticles using plant extracts of *Musa paradisiaca*, *Magnifera indica* and *Aloe vera* and evaluation of their antioxidant and antimicrobial Properties**

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**Background and Objectives:** Antimicrobial resistance is a growing challenge and the need to find new antimicrobial agents is an ever growing need. Silver nanoparticles can be an alternative or potentially work in synergism with the existing antibiotics as a solution to antimicrobial resistance. The study was aimed at assessing the ability of the plant extracts' of (*Magnifera indica* (mango) leaf, *Musa paradisiaca* (banana) peel and *Aloe vera* leaf gel extract) in reducing silver nitrate to produce silver nanoparticles. The silver nanoparticles were then assessed for their antibacterial, antifungal activity and antioxidant properties of the silver nanoparticles were also monitored.

**Methods or Description:** Plant extracts' (*Magnifera indica* (mango) leaf, *Musa paradisiaca* (banana) peel and *Aloe vera* leaf gel extract) silver nitrate reduction potential was evaluated by varying the plant extract volume, substrate concentration, incubation time and temperature. The antibacterial and antifungal activity was assessed using the well diffusion method whilst also varying the silver nanoparticle concentration

and the silver nitrate concentration was also varied when assessing the antioxidant properties. Efficacy in other parameters such as dose dependent antibacterial and antifungal activity and antioxidant properties of the silver nanoparticles were also monitored.

**Results or Lessons Learned:** Key results indicated the optimum conditions were plant extract volume (5ml), substrate concentration (1mM) at room temperature for 75 minutes (incubation time). Silver nanoparticle production was highlighted by formation of a reddish brown colour detected by the UV spectrophotometer. Characteristic Surface Plasmon Resonance peak was noted at 433nm for banana plant extract and 420nm for mango plant extract indicating their sizes were around 70nm and 35nm respectively. Aloe vera leaf gel extract was incapable of reducing the silver nitrate solution. Silver nanoparticles showed effective antibacterial activity against *S aureus* and *E coli* on both Nutrient Agar and Broth, with a minimum inhibition concentration of 8µl/ml. In antifungal activity evaluation, an increase in the concentration of the silver nanoparticles, 50µl/ml to 200 µl/ml, increased the inhibition rate from 52.34 – 75.69% and 57.45 – 81.80% in *Aspergillus niger* and *Penicillium digitatum* respectively. Synthesized nanoparticles exhibited synergistic effect with amoxicillin antibiotic, with the minimum inhibition concentration being 6µl/ml. Silver nanoparticles' antioxidant abilities were indicated by the ability to decolourize the 2, 2 -diphenyl-1-picrylhydrazyl (DPPH) solution into a pale yellow colour and an increased inhibition rate at a constant gradient up to 68.5% at a concentration of 800µl/ml.

**Conclusions or Way Forward:** Study presented evidence of antibacterial and antibiofilm effects of synthesised nanoparticles and their enhanced capacity as an adjuvant against various fungi and human pathogenic bacteria.

**Keywords:** Silver Nanoparticles, Green synthesis, Antimicrobial and Antioxidant properties,

**Title: Adherence to Iron and Folic Acid Supplementation and Associated Factors among Mothers receiving Antenatal Care in Lira District, Uganda: A cross-sectional descriptive study.**

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**BACKGROUND:** Antenatal iron and folic acid supplementation is a cost-effective way of reducing iron and folic deficiency-anaemia among pregnant women in resource limited countries like Uganda.

**AIM:** To assess the levels of adherence to Iron and Folic Acid Supplements and determine the associated factors among mothers receiving antenatal services in Lira district, Uganda.

**METHODS:** 252 pregnant women were recruited in a cross-sectional survey at Lira Regional Referral Hospital antenatal clinic. Levels of adherence to Iron and Folic Acid Supplements were assessed using visual analogue scale and factors associated collected using an interviewer administered questionnaire. The findings were analyzed using SPSS software and reported in Tables.

**RESULTS:** Only 46% of the mothers attending the antenatal clinic adhered to iron and folic acid supplements over 30-day period of the previous month before the study. Participants who had good knowledge of Iron and Folic Acid Supplements before recruitment (OR 1.49 95% CI 1.12–1.97), using reminder techniques (OR 1.05; 95% CI 1.02–1.09) and being supported by their partner or relatives (OR 1.56, 95% CI 1.07–2.29) were more likely to have good adherence. Forgetfulness and fear of taking too many tablets were the main reasons for missed iron and folic acid supplements.

**CONCLUSIONS:** There was low adherence to iron and folic acid supplements among mothers attending antenatal clinic in Lira district. We recommend further investigations into hindrances to adherence and provision of comprehensive health education to pregnant mothers.

### **Barriers and Enhancers to COVID-19 Vaccination among Healthcare Workers in a Metropolitan City in Nigeria**

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### **Background**

The development of COVID-19 vaccines is one of the significant efforts directed toward preventing and controlling the disease's pandemic. However, following the availability of vaccines in Africa, an additional issue of vaccine hesitancy, particularly among healthcare workers (HCWs), was observed. HCWs play a crucial role in promoting vaccine acceptance in a community, as they are

seen as a trustworthy source of vaccine-related information. This study sought to understand the barriers and enhancers to COVID-19 vaccine uptake among HCWs in Ibadan, a metropolitan city in Oyo State, Nigeria.

### **Methods**

A cross-sectional study was conducted among 1,227 HCWs between April and May 2023 in Ibadan, a metropolitan city comprising 10 of the 33 local government areas in Oyo State, Nigeria. An online questionnaire in English was created in alignment with the Behavioural and Social drivers (BeSD) framework for vaccine demand creation. It was administered using the REDCap electronic data capture tool. Data were analysed using STATA software version 17. Data were cleaned, and descriptive statistics were generated. Subsequently, modified Poisson regression model was used to determine associated factors with vaccination status through prevalence ratios (PR), and statistical significance was declared at a 5% level.

### **Results**

A total of 1,227 HCWs from 28 healthcare facilities of various professions participated in the study. Out of the 1,227 HCWs, 1,016 (82.8%) had received at least one dose of the COVID-19 vaccine. Among these, 596 (58.7%) found it easy to access the vaccine when needed, and 648 (52.8%) were very confident in addressing COVID-19-related inquiries. HCWs in primary health facilities had a higher vaccination uptake than those in secondary and tertiary facilities (88%, 84%, and 79%, respectively). Vaccination uptake was statistically higher among HCWs with older age compared to those aged below 25 years; (45-54 years: PR=1.20, 95% CI 1.09, 1.33, and  $\geq 55$  years: PR=1.17, 95% CI 1.05, 1.30), and HCWs employed in private health centre (PR=1.16, 95% CI 1.10, 1.23). Most HCWs (83.5%) strongly agreed that vaccination against infectious diseases was protective, though only 61.9% felt the same way about the COVID-19 vaccine. Additionally, 92.4% of HCWs expressed willingness to recommend the COVID-19 vaccine to others. Willingness to recommend vaccination was higher among vaccinated HCWs (86.5%). The top two reasons for vaccine hesitancy among HCWs in Ibadan were the belief that vaccine development and authorization were rushed (26.1%) and concerns about serious side effects (17.8%).

### **Conclusions**

In this study, the majority of HCWs in Ibadan are vaccinated, though the rate varies by profession. They also reported being confident in providing information about the vaccine to patients. However, uncertainty about the safety of the COVID-19 vaccine remains a major reason for vaccine hesitancy among HCWs in Ibadan. Targeted education and improved vaccine safety communication strategies may increase vaccine acceptance among HCWs in the region.

## **SUBTHEME 3: EFFORTS TO BRIDGE GAPS: ACHIEVING UNIVERSAL HEALTH COVERAGE**

## **Title: Rolling out of community oriented primary care program in Mangochi district, Malawi**

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### **Background and objectives**

Malawi is a landlocked country with an estimated 19.4 million people as of the year 2022. The country has a young population with about 64% of the population below 15 years and only 3% above 65 years old. Life expectancy at birth is at 65.62 years and majority (81.5%) of the people live in rural areas. There is skilled workforce in urban parts of Malawi health system unlike rural setting where most Malawians live. Less skilled health workforce and limited access to health service continue to be problematic at primary health care level. Health centers are manned by either nurse (NMT) who has a certificate or diploma in midwifery. Alternatively, by medical assistants (MA) with a certificate in clinical medicine and health surveillance assistants (HSA) holding a certificate in disease control reports disease outbreaks happening within the community. The Malawi government has realized the importance of strengthening primary health care as key in achieving universal health coverage. Two of the three measures stipulated in the Malawi health sector strategic plan document for 2022 to 2030, are improved access and quality health service for all.

The Department of Family Medicine under, the Kamuzu University of Health Sciences has taken steps towards achieving universal health coverage, through Community Oriented Primary Care (COPC) pilot project, which is funded by seed global health. Aim is to improve access and quality of health service by decentralization of skilled health workforce to rural area in Mangochi district. This is run as part of modules for doctors specializing in Family medicine besides being piloted.

This paper briefly describes a four-year journey of rolling out COPC in Mangochi district which is and some lessons learnt.

### **Methods of Description**

Each doctor commutes to the health center twice very month. On the initial visit a community tool is used to collect information on the following: prevalence of disease conditions of cases seen at health center, community partner mapping including facilities, health related programs run within. From this information health facility including community and led by doctor design an intervention to address health issue identified.

### **Results or Lessons learned**

The programs have exposed a number of gaps which are currently being addressed. There is in general knowledge gap by health centre carders (MA, NMT) such that the family medicine

doctors been mentoring and emphasizing on evidence-based practice and people-centered care. Some doctors have focused on strengthening community engagement to improve ownership of programs. There has been advocacy meeting with partners through patient case scenarios discussion to negotiate for integration of vertical programs, improved consultation on patient management plan through WhatsApp group that was created prevented unnecessary referrals.

Improved screening and awareness on non-communicable diseases has also been recognized. Expert client been identified and supportive for those with similar conditions.

### **Conclusions and the Way Forward**

Further results from COPC in Mangochi, will justify policy review on who needs to be included in the community health workforce and rollout to other districts. The ongoing feedback through interviews with the primary healthcare providers and other stakeholders show that the COPC program is impactful and well received.

### **Title: Empowering Reproductive Health Choices: Navigating Women's Perspectives on Self-Injection with DMPA-SC in Masaka District, Uganda**

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**Background:** Globally, an estimated 966 million women of reproductive age (15 to 49 years) utilize contraception, with 874 million opting for modern methods and 92 million relying on traditional ones. While there has been significant progress, 164 million women still face an unmet need for family planning services and methods of their choice. In Sub-Saharan Africa, only 56 percent of women have their family planning needs met with modern methods. In Uganda, contraceptive utilization is still low at 43%, falling short of the WHO's 80% target by 2030, despite a high need of 64% among reproductive-aged women. Notably, access to Injectable contraceptives, preferred by many, remains at a mere 15% for Ugandan women. Hence, the Women Self-Inject Initiative sought to address this gap through proven interventions and innovative strategies.

**Aim:** To assess the existing gaps of limited access to self-injectable DMPA-SC among women of reproductive age in Masaka district, Uganda.

**Methods:** The study employed a quantitative methodology with a cross-sectional design. A sample of 370 women of reproductive age (15 – 49 years) in Buwunga and Kyesiiga Subcounties of Masaka District were interviewed with a non-structured questionnaire. Once the data collection was completed, the raw data was exported to SPSS version 23 for analysis and report Writing.

**Results:** 80% of the participants reported using modern family planning methods. Injectable contraceptive methods appeared as the most familiar among the participants with 87% (321/370) and were the most widely used. The primary reasons for participants not considering DMPA-SC self-injection were ignorance and fear of pain related to self-injection. Only 0.03% (5/370) of participants had received training on DMPA-SC self-injection, highlighting a significant knowledge gap concerning self-injectable contraceptives. It was noted that 53.5% (198/370) of participants were willing to consider DMPA-SC self-injection if trained on the procedure, indicating a readiness to adopt the intervention through Private Care Providers (PCPs). These findings demonstrated the existing state of contraceptive knowledge, usage patterns, and the specific challenges hindering the acceptance of DMPA-SC self-injection.

**Conclusions:**

The findings gathered from this survey provided a baseline for a targeted intervention aimed at addressing knowledge gaps and alleviating access to DMPA-SC self-injectables among women of reproductive age in the Kyesiiga and Buwunga sub-counties of Masaka District.

**Title: Prevalence of Depression amongst adult Hemophilia Patients Registered with Hemophilia Foundation of Zambia**

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**Introduction**

Hemophilia refers to a group of inherited/genetic bleeding disorders. Within the context of hemophilia, multiple factors place patients at risk for depression, including the acute and chronic complications such as pain and deformities. The presence of major depression in hemophilia can therefore potentially lead to progressively worsening health outcome and quality of life. In Zambia, there has been very little to no research done around the mental health of patients with hemophilia. Hence there is limited evidence for recommendations on the multidisciplinary care guidelines of hemophilia, particularly regarding the mental health care.

**Aims and Objectives**

To assess the prevalence of depression (major depression) amongst adult hemophilia patients registered under the Hemophilia Foundation of Zambia.

**Methods**

This study was a quantitative cross-sectional study, conducted by administering the study questionnaire to collect data on demographic characteristics, clinical characteristics and the Patient Health Questionnaire – 9. A total of 59 adult patients with Hemophilia in Zambia, registered under the Hemophilia Foundation of Zambia were interviewed through the

questionnaire. The data was analyzed using STATA 14. Descriptive analyses were done on the data, responses on PHQ-9 were totaled to assess for the prevalence of depression. Depression was defined as PHQ-9  $\geq$  5; Major Depression as PHQ-9  $\geq$  10. Pearson Chi-2 test was done to assess for associations and a logistic regression model was created to show the relationship between significant risk factors (independent variables) and depression.

## Results

59 participants were interviewed in this study. They were all male with an average age of 24.77 years from various parts of Zambia. 91.53% of the patients reported to have Hemophilia A, while 8.47% had Hemophilia B, there were no patients with Hemophilia C. The average PHQ-9 score was 8.66. 83.04% of participants had depressive symptoms (PHQ > 5); 44.06% having Major depression and only 16.96% of the participants reported no depression. Number of painful bleeding episodes (OR=2.063; P=0.048) and difficulty in performing daily activity (OR=4.311; P=0.008) were significantly associated with a higher risk for major depression.

## Conclusion

There was a high prevalence of major depression (44.06%) amongst adult patients with hemophilia registered under the Hemophilia Foundation of Zambia. Hence there is need for addition of mental health care to the multidisciplinary management of adults with hemophilia for improved health outcomes due to the high prevalence of depression amongst in this group. Additionally, patients who suffer many painful bleeding episodes must be prioritized candidates for mental health care.

**Key Words:** Hemophilia, Depression, Major Depressive Disorder, Mental Health Care, PHQ-9.

**Title: Improving Health Systems for Healthy Ageing: a Strategy to improve Health Service Utilization among the Ageing Population in Rural Ghana**

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## Background and Objectives

The global population is experiencing a significant increase in the elderly population across all six regions. Europe boasts the highest proportion of older adults, projected to reach 36.6% by 2050. However, the surge in older adults in less developed countries is even more dramatic, with an estimated increase of over 250%, compared to a 71% rise in advanced nations. For instance, in 2010, Ghana's elderly population aged 60 and above reached 1.5 million, representing 6% of the total population, signifying a 220% increase since gaining independence. By 2025, this age group is predicted to grow to 2.5 million and is expected to reach 6 million by 2050, constituting 14% of the total population. In Africa, healthy aging is fast

becoming a pressing public health concern. There is growing apprehension that Ghana's healthcare systems may not be sufficiently equipped to deliver responsive geriatric healthcare services to the aging population. This study aimed to address this issue by investigating two primary aspects: the perceived health service needs and challenges faced by the elderly population residing in rural communities; and the current state of geriatric healthcare services within the rural healthcare system in Africa, particularly in Ghana.

## **Methods**

The study employed secondary data analysis of electronic medical records of St. Francis Xavier Hospital in the Central Region of Ghana from 2020 to 2022. This involved using the aggregated hospital data for individuals aged 60 years and above. The extracted data was processed using Microsoft Excel 2016 before it was imported into SPSS 22 software for descriptive analyses.

## **Results**

More than one-third of the general hospital attendance was attributed to individuals aged 60 years and above. The leading causes of OPD attendance at this facility have remained consistent, accounting for approximately 52% of all admissions for the aged population. The primary causes of morbidities fall into three broad categories:

1. Rheumatism and Joint Pain (including myalgia, headaches, and various body pains/aches).
2. Cardiovascular (encompassing hypertension, diabetes, ischaemic heart disease, and stroke).
3. Respiratory (involving pneumonia, obstructive pulmonary disease, lower and upper respiratory infections).

It was noted that Non-Communicable Diseases were the leading causes of hospital visits over the three-year trend analysis.

## **Conclusion**

Most elderly individuals access healthcare when they are ill, indicating a reactive approach rather than preventive. This underscores the need for integrated geriatric services within the healthcare system. To align with the 2020 global healthy aging goals, Ghana must focus on policy amendments to support geriatric care, particularly in community health facilities.

Keywords: Health ageing, geriatric care, health service utilization, ageing population

## **Title: actors associated with retention of Health workers in remote Public Health Centers in Northern Uganda: a cross-sectional study**

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**Keywords:** Health workers, Health worker retention, Hard-to-reach areas

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**Background:** Health worker retention in remote and hard-to-reach areas remains a threat in most low- and middle-income countries, and this negatively impacts health service delivery.

**Objective:** This paper explores factors associated with retention of health workers in remote public health centers in Lira district in Northern Uganda.

**Methods:** A descriptive cross-sectional study with quantitative methods of data collection was used among health workers. The study utilized a structured questionnaire with closed ended questions to obtain quantitative information.

**Results:** Most of the health workers were attached to HC IIIs (61.28), females (62.90%), married (84.62%), with certificate level (55.74%), and nurses (36.60%). Likewise, most of the health workers were from within 5kms from the place they grew up from (37.45%), not staying with their families at the health facility (65.11%), of age group 31-40 years (42.98%), had worked at facility and with employer for 2-5 years or above 5 years (56.6%) and 45.96% respectively.

The average retention rate of health workers was 87.04%. Several individual, health system and career related factors were significantly associated.

**Conclusion:** The retention rate of health workers in the remote rural public health centers of Lira District is within the same ranges as other places in the world. The study established that indeed several individual and social demographics, health system and career related factors are significantly associated with retention of Health workers in the rural public health facilities.

**Title: Association between serum P16ink4A concentration and cervical lesions among Women attending a cervical cancer clinic in Western Uganda: A case control study**

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**Background:** Tissue expression of P16ink4A is correlated with grades of cervical lesions. In this study we determined the association between serum P16ink4A concentrations and cervical lesions among women attending the cervical cancer clinic at Mbarara Regional Hospital (MRRH) South Western Uganda.

**Methods:** We recruited 90 cervical intraepithelial neoplasia (CIN) cases, 90 cervical cancer (CC) cases and 90 controls. Clinical and demographic data were recorded. Serum P16ink4A concentrations were measured by quantitative Elisa. Cases were confirmed with cytology and/or histology. Descriptive statistics and logistic regression were done with STATA 17 and P-values of <0.05 were considered statistically significant.

**Results:** The mean serum P16ink4A concentration among CIN cases CC cases and controls was 1.11(+/-0.66) ng/ml, 1.13(+/-0.61) ng/ml and 1.45(+/-1.11) ng/ml respectively (p=0.008). 50% of CIN cases and controls as well as 60% of CC cases had P16ink4A concentration above 0.946ng/ml. There were increased odds of CIN for serum P16ink4A though statistically insignificant (AOR: 1.11, p-value: 0.70). There was also a statistically significant reduction in odds of CC for serum P16ink4A (AOR: 0.55, p-value: 0.01).

**Conclusion:** Serum P16ink4A may likely be associated with cervical lesions especially CIN in our study population and this may aid detection of such lesions. Diagnostic utility studies for circulating P16ink4A are recommended.

**Key words:** Serum, P16ink4A, Cervical cancer, Cervical intraepithelial neoplasia, Mbarara Uganda

**Title: Factors Influencing Modern Contraceptive Use Among Women of Reproductive Age Living in Slums of Arua City Uganda**

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**Introduction:** Of 1.9 billion women of reproductive age 922 million use Contraceptives (WHO, 2019). Europe, North America, and sub-Saharan Africa contraceptive use stands at 69.3%, 54.9%, and 31.5% respectively, (John, 2020). Uganda is low income country with high population growth rate of 3.35% (UBoS, 2020) but low contraceptive usage at 30.4% (FP2030, 2020). About 48.3% of urban population live in slums (World Bank, 2018). West Nile region where Arua city is found has contraceptive prevalence of 19% (UDHS, 2016) against WHO recommended 100%. One-third of maternal deaths and 20% of child mortality can be averted by modern contraceptive use (UNFPA, 2017). Objective; To examine the factors influencing modern family planning use among women of reproductive age living in slums of Arua City. The specific objectives include; To determine the proportion of women of reproductive age using modern contraceptives. To establish socio-demographic factors influencing modern contraceptive use. To examine health system factors influencing modern contraceptive use in Arua city slums.

**Methods:** A Cross-sectional and quantitative study design was adopted. Systematic sampling procedure was used to select every 9th household starting from a random entry point to make sample size of 418 participants. Data analysis was done using SPSS version 20. Bivariate Pearson's Chi-square test statistic and two stages of logistic regression analysis at a p-value <0.05 was used to statistical significance.

**Results:** (1) Modern contraceptive use among women of reproductive age in the slums of Arua city was slightly high at 61.2%. Most commonly used methods being pills (59.3%) followed by injectable (31.1%). (2) Income generating activity ( $p=0.002$ ;  $p<0.005$ ), support from partner ( $p=0.001$ ;  $p<0.005$ ), peers ( $p=0.001$ ;  $p<0.005$ ), and elders ( $p=0.001$ ;  $p<0.005$ ), significantly enhanced modern contraceptive use. (3) PNFP health facilities ( $p=0.001$ ;  $p<0.005$ ) and the poor attitudes ( $p=0.001$ ;  $p<0.005$ ). Conclusion: Modern contraceptive use in Arua city slums (61.2%) is below WHO recommended 100%. Socio-demographic and health system factors contribute to low modern contraceptive use in slums. Recommendations; (1) Community sensitization using various media platforms on modern contraceptives use. (2) Support communities with income generating activities (3) escalate social support for better sexual reproductive and maternal and child health innovations (4) Strengthen PNFP facilities with more modern contraceptive methods (5) Conduct CMEs/refresher training for the health workers about attitude change.

**Keywords:** Modern Contraceptives, Reproductive age, Slum

**Title:** Out-of-hospital Mortality in Rural Areas of Mozambique in 2019: Trends, Patterns, and Risk Factors.

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### **Background and objectives**

Out-of-hospital mortality in rural areas is a crucial indicator for assessing the health and well-being of rural populations. In many regions, particularly in countries with less developed healthcare systems, a significant proportion of deaths occur outside of hospitals. In 2018 Mozambique, according to Health Minister had 70% of deaths out-of-hospital. The study aims to describe the clinical and epidemiological profile, and to analyse associated characteristics to out-of-hospital deaths.

### **Methods:**

A cross-sectional, retrospective analytical design, using secondary data from the Mozambican Vital Events and Cause of Death Surveillance System (SIS-COVE). Using Stata 17, 2019 death data were selected according to the following variables: age, sex, level of education, occupation, residence area (urban or rural), province, and type of disease. The characteristic of deaths population was described by univariate analysis, simple adjusted logistic model was applied to measure association with out-of-hospital, one of them considering those characteristics with  $p\text{-value} \leq 0.05$ . No conflict of interest declared.

### **Results:**

Most deaths occurred in rural areas (66.0%), with individuals aged 50 or above representing the largest age group (49.1%). Among out-of-hospital deaths, the most common occupation was unemployed (68.8%), females accounted for 65.7% of deaths, while males accounted for 60.8%. The association analysis revealed that individuals with secondary education or higher had a lower chance of extra-hospital mortality compared to those with no formal education (Model 1: ORa 0.328, CI 0.243-0.442; Model 2: ORa 0.369, CI 0.265-0.515). Similarly, students, pensioners, and unemployed individuals had a lower chance of extra-hospital mortality

compared to the unemployed (Model 1: ORa 0.756, CI 0.425-1.343; ORa 0.924, CI 0.451-1.896; ORa 0.733, CI 0.542-0.991; Model 2: ORa 0.864, CI 0.442-1.689; ORa 0.726, CI 0.348-1.514; ORa 0.723, CI 0.531-0.984). The analysis also showed that certain provinces, such as Cabo Delgado, Zambezia, and Inhambane, had higher chances of out-of-hospital mortality.

### **Conclusion:**

The study highlights the significant concern of extra-hospital mortality in rural areas of Mozambique, emphasizing the need to consider the specific characteristics of these areas when developing health policies.

### **Title: Piloting a Stroke Care Mobile Application in four stroke units in Zimbabwe: Exploring Feasibility and User Experience**

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### **Background and objectives**

This abstract presents the findings of a pilot study conducted to evaluate the feasibility, user experience, acceptance, and adoption of a stroke care mobile application developed for use in low resource settings in Zimbabwe. The application was developed by the University of Zimbabwe (UZ), Health Education Partnership Initiative (HEPI), PETRA (Partnership in Education Training and Research Advancement) program, between January 2021 and July 2023. Stroke remains one of the leading causes of disability and mortality world-wide (1). This application guides healthcare workers in remote hospitals to access stroke care concepts, follow basic stroke management and assessment, and aid them in decision making. This has the potential to enhance stroke outcomes through the provision of timely, accurate and appropriate care to clients. Additionally, the application allows for data aggregation through dashboards and detailed reports. This helps policy makers to intervene timely when necessary, at the same time allowing for implementation of evidence-based decisions and policies to improve stroke outcomes in the country.

### **Methods**

The pilot study involved a small sample of healthcare workers from the PETRA stroke care units in 4 Zimbabwean hospitals who were given access to the stroke care mobile application for 5 months. The primary objectives were to assess the feasibility of using the application in the hospital setting and to gather feedback on user experience, usability, and perceived usefulness of the application.

The acceptability framework was used to assess feasibility and acceptance of the stroke application. A mixed methods approach was used to collect data from the 4 sites. This included

survey data from inter-professional teams and key informant interview data from stroke unit leadership, which was then triangulated to come up with conclusions and recommendations for improvement of the application.

## **Results**

The results of the pilot study indicate that the stroke care mobile application was well-received by healthcare professionals. They reported positive experiences with the application's user interface, ease of navigation, and overall usability. The features of the application, such as detailed stroke care notes, acute management guide, post-acute care, and emergency contact information, were commended and deemed valuable and helpful in managing stroke-patients in the absence of stroke expert physicians.

The pilot study also confirmed the need to integrate the application into the existing healthcare systems and workflows, particularly the National Electronic Health Records System (EHR), something which was already on the future plans.

The findings of this pilot study support the potential of a stroke care mobile application in improving stroke care delivery. However, further research is needed to evaluate its impact on clinical outcomes, cost-effectiveness, and long-term user engagement.

## **Conclusions**

In conclusion, this pilot study demonstrates the positive user experience of a stroke care mobile application. The application holds promise in enhancing stroke care by providing accessible information on stroke recognition and care, facilitating communication, and supporting timely management of stroke patients. Continued development, evaluation, and optimization of stroke care mobile applications are essential to realize their full potential in improving stroke care outcomes.

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**Title: The Stakeholders' Perspectives on the Implementation of Social Accountability in Undergraduate Medical Education at Makerere University School of Medicine**

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**Background:** Social accountability for medical schools is the obligation of the medical school to direct its core activities toward meeting the priority needs of the community. The core activities of medical schools are education, research, and service. Social accountability is a global concept

that requires local contextualisation. Stakeholder partnerships are central to the implementation of social accountability, and stakeholders need to work together in planning, implementing, and evaluating social accountability in undergraduate medical education. We aimed to explore stakeholders' perspectives on the implementation of social accountability in undergraduate medical training at Makerere University School of Medicine.

**Methods:** This was an exploratory qualitative study. Data was collected between September 2022 and December 2022. Ethical clearance was obtained from the Makerere University School of Medicine Research Ethics Committee. Fourteen stakeholders in undergraduate medical training at Makerere University School of Medicine were interviewed, including three policymakers, one health administrator, three health professionals, three community representatives, two medical students, and two representatives from the medical school. Transcripts were analysed to generate themes using the six-phase approach to thematic analysis described by Braun and Clarke.

**Results:** Diverse expressions of the implementation of social accountability were present in all three core activities of the medical school. The curriculum and community-based education research and service were key expressions of social accountability in education activities. Research to understand community needs was described within community-based education research and service. The opportunities to improve the implementation of social accountability include involving civil society partners and improving equity in undergraduate medical training.

**Conclusion:** Our study found evidence of the implementation of social accountability in undergraduate medical education. The opportunities to improve the implementation of social accountability in undergraduate medical education include involving civil society partners in training medical students about the community, working with the community living in the nearby slum, and providing financial support for students.

**Title: Transitioning to adult care of adolescents and youth living with HIV in low-income settings; experiences from the perspective of health care workers, managers, and parents/caregivers in Dar es salaam, Tanzania.**

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**Background:**

Adolescent and youth living with HIV (AYLHIV) aged 10 – 24, perinatally or behaviourally acquired, due to their vulnerability face numerous clinical and psychosocial challenges such as neurodevelopmental disorders, organ diseases, stunting and mental disorders that may directly influence their clinical outcomes, functionality, and quality of life. These challenges may hinder their resilience, independence, and confidence from transitioning to adult care. Without a comprehensive intervention preparing young people to be responsible for their health, there may be an increased risk for HIV morbidity and mortality while in adult care.

**Methods:**

Phenomenological qualitative study design explored norms and practices in providing care and support, including barriers and facilitators, during the transition period from the perspective of health care workers. Focus group discussions (FGD) were conducted, groups were made according to the health care workers cadres and parents/caregivers. Seven FGD each with 8 participants were conducted using a semi structured interview guide. Recordings were transcribed verbatim and translated into English. The translated scripts were coded using a hybrid approach in DEDOOSE. Themes were pre-determined and modified according to the data collected.

**Results:**

Themes; **Existing preparatory supports; HIV status disclosure, Mental health support:** health providers show the importance of such intervention to improve resilience, self-awareness and self-management. **Occupational support** as insisted majority of young people who live with HIV have limited education because of HIV disease as well as stigma. **Sexual and reproductive health support, HIV care and treatment support;** Support groups sessions (clubs), and nutrition support. Barriers to successful transition of young person to adult care; **Health system/services barriers;** Parental guidance barriers: forced marriages, limited education, limited social support. **Stigma and discrimination, Individual barriers.**  
**Recommendations: Patient centered approach,** Strengthen preparatory interventions and Multidisciplinary team approach.

**Conclusions:**

This study highlighted areas need more attention in preparing young people to successfully transit to adult care and improve their wellbeing including package of interventions with a guide to support health care workers to navigate the transition process, involvement of parent/caregivers, peer support system during the preparation of AYLHIV for readiness and

supporting each other post transition. Further integration of mental and sexual health services is compulsory to ensure beneficial transition to adult care

**Title: Facteurs associés à la Maternité précoce dans la ville de Lubumbashi : cas des zones de santé de Kampemba et de Kisanga en RD Congo**

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**Introduction**

La maternité précoce est un réel problème de santé publique à l'échelle mondiale et particulièrement dans les pays en développement, comme évoqué par l'Objectif de Développement Durable 3 des Nations Unies. Cette étude avait pour objectif de déterminer la proportion de la maternité chez l'adolescente et son profil socio-démographique ainsi que d'identifier les facteurs associés à celle-ci afin de donner de pistes et perspectives pour promouvoir la santé maternelle dans les Zones de santé de Kampemba et de Kisanga de la ville de Lubumbashi, en République Démocratique du Congo.

**Méthodologie**

Une étude analytique transversale a été menée dans 12 structures des 8 Aires de santé de la Zone de santé de Kampemba et 17 structures des 10 Aires de santé de la Zone de santé de Kisanga à Lubumbashi (RDC) pour une durée de trois mois de l'année 2021. Quatre cent vingt-sept adolescentes ayant accouché dans les structures ciblées ont répondu à notre questionnaire prétesté. L'analyse des données a été faite avec Stata version 17.0. Nous avons procédé à une régression logistique.

**Résultats**

La proportion de la maternité précoce était de 17,5%. En analyse bivariée, la zone de santé, être à la première parité, l'âge à la première naissance, l'âge du premier rapport sexuel, l'âge du partenaire sexuel, la profession de l'adolescente, le niveau d'études de l'adolescente et de la mère, le type d'accouchement, l'âge gestationnel, être célibataire et aîné de sa famille, le nombre de CPN suivies ainsi que n'avoir pas entendu parler des méthodes contraceptives étaient significativement associés à la maternité précoce. L'analyse par régression logistique n'a retenu comme facteurs associés à la maternité précoce de 14 à 17 ans, comparée à celle de 18 à 19 ans, que la zone de santé de consultation, la parité de l'adolescente, l'âge à la première

naissance, l'âge au premier rapport sexuel, l'âge gestationnel, l'âge du partenaire sexuel, l'Etat civil, et le niveau d'études de l'adolescente.

### **Conclusion**

Cette étude a mis en évidence une forte proportion de la maternité précoce dans les zones de santé étudiées. Ces résultats montrent non seulement la nécessité d'intensifier l'éducation sexuelle de la jeunesse, le droit lié au mariage, la santé de la reproduction, mais également l'importance d'assurer une scolarité de base pour tous, par exemple gratuitement, au niveau primaire et secondaire ; tout en rendant disponibles et accessibles à tous, les méthodes Contraceptives.

**Mots-clés : Maternité précoce, adolescente, déterminants, Lubumbashi, DR Congo**

**Title: Prognostic prediction models for adverse birth outcomes: A systematic review**

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**Background:** Despite progress in reducing maternal and child mortality globally, adverse birth outcomes have been observed to be disproportionately high in low- and middle-income countries

(LMICs). Developing and validating a prediction model for adverse birth outcomes allows for early risk detection and prevention strategies. This systematic review aimed to assess the performance of existing prediction models for adverse birth outcomes and provide a comprehensive summary report of their findings.

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

**Result:** We included 115 prediction models with the following outcomes: composite adverse birth outcomes (6), low birth weight (17), small for gestational age (23), preterm birth (71), and stillbirth (9). The sample size ranges composite adverse birth outcomes (32-549), low birth weight (97- 27,233), small for gestational age (41-116,070), preterm birth (31-15,883,784), and stillbirth (180- 76629). Only nine studies were conducted on LMICs. Ten studies were external validated. Maternal clinical and medical characteristics were the most widely used prognostic factors for preterm and low birth weight prediction, while uterine artery pulsatility index was used for stillbirth and small for gestational age prediction. Area under roc curve (AUC) was the most commonly used metric to describe model performance for each adverse birth outcomes. The AUC ranged from 0.51 to 0.83 in 69 development studies that reported predictive performance for preterm birth. The AUC for predicting small for gestational age, low birth weight, and stillbirth varied from 0.54 to 81, 0.60 to 84, and 0.65 to 0.72, respectively

**Conclusions:** Current adverse birth outcome prediction models have poor to very good discrimination performance, but most did not report calibration performance. Inconsistent prognostic factors were included for each adverse birth outcome prediction. Prediction models with consistent prognostic factors that warrant external validation should be accessible to Practitioners.

**Protocol registration:** The review protocol has been registered on PROSPERO (CRD42021281725).

**Keywords:** adverse birth outcomes, low birth weight, prediction models, preterm birth, stillbirth

**Title: Stimulating prognostic relevant cutoff values for a multiplex PCR detecting BCR:ABL1 in chronic myeloid leukemia patients on tyrosine kinase inhibitor therapy in resource-limited settings**

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**Background:** The prognosis of chronic myeloid leukemia (CML) on tyrosine kinase inhibitor (TKI) treatment is based on the quantification of BCR::ABL1 fusion gene transcript copy number, harmonized by an international scale (IS) based on TaqMan-based real-time quantitative PCR (qRT-PCR). In Ethiopia, as in most low- and middle-income countries (LMICs), access to standard diagnostic, follow-up, and prognostic tools is very limited, and it has been challenging to strictly follow international guidelines. This seriously compromises clinical outcome, despite the availability of TKIs through the Glivec International Patient Assistance Program (GIPAP). Multiplex PCR (mpx-PCR), conventionally regarded as a “screening tool,” offers a potential solution to this problem.

**Objective:** This study aimed to evaluate the potential of mpx-PCR as a viable alternative to qRT-PCR in the management of TKI therapy in LMIC

**Method:** The study enrolled 219 consenting, cytogenetically confirmed Ph+ CML patients visiting the hematology clinic consecutively. Five-milliliter (ml) peripheral blood (PB) was collected in Vacutainer EDTA Tubes. Study participants were those who were treatment naïve or on first line or subsequent TKI therapy. Clinical data was extracted from the clinical record. The TaqMan-based real-time quantitative PCR (qRT-PCR) and multiplex PCR were performed on each sample. We have compared these techniques in terms of prognostic benefit in predicting risk of relapse among CML patients on TKI treatment using ROC curve analysis to determine sensitivity and specificity of mpx-PCR.

**Result:** In reference to qRT-PCR, the AUC of ROC curve for mpx PCR was 0.983 (95% CI: 0.957 to 0.997). At the optimum cut-of value, equivalent to BCR::ABL1 (IS) transcript copy number of 0.6%, the specificity and sensitivity were 93% and 95%, respectively, with 94% accuracy. Albeit the sensitivity and accuracy of mpx-PCR decrease below the optimum cutoff of 0.6% (IS), the specificity at 0.1% (IS) was 100%, making it an attractive means to rule-out relapse and drug non-adherence at later stages of treatment, which is particularly an issue in a low-income setting.

**Conclusion:** We conclude that the relative simplicity and low cost of mpx-PCR and prognostic relevant cutoff values (0.1–0.6% IS) should allow its use in peripheral clinics and thus maximize the positive impact of TKIs made available through GIPAP in most LMICs

**Keywords:** Chronic myeloid leukemia (CML), Multiplex PCR, Prognostic relevant cutoff values, BCR::ABL1 fusion gene, LMIC

**Title: Hematological and Immunological Evidence for a Theoretical Mechanism for Podoconiosis based on Autoimmune Disease Pathogenesis, West Gojjam Zone, Ethiopia: A Comparative Cross-Sectional Study**

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**Background:** Podoconiosis is a geo-chemical, non-infectious, familial, chronic lymphedema of the legs. This disease primarily occurs among barefoot people in rural, farming communities in areas of extreme poverty. Despite a growing body of research surrounding the disease, the pathogenesis of the disease is relatively unknown.

**Objective:** To determine the important immunological and hematological components of Podoconiosis in order to propose a mechanism of action for the disease.

**Method:** A comparative cross-sectional study was conducted in West Gojjam Zone, Ethiopia on adult individuals clinically diagnosed with Podoconiosis and healthy controls living in the same area. A survey was conducted for the sociodemographic, lifestyle characteristics, and clinical features of the disease. About 10mL whole blood sample was collected to run hematological and immunological (IL-4, TNF- $\alpha$ , IL-6, IL-17, IL-10, TGF  $\beta$  and IFN- $\gamma$ ) testing, and a stool sample was collected for a parasitological analysis.

**Results:** A total of 120 study participants (53 Podoconiosis patients and 67 controls) participated. Statistically significant differences were found for the hematological, but not immunological profiles of individuals with Podoconiosis compared to healthy controls. Among the hematological findings, the reduced white blood cell count (AMD = -1.15 95% CI: -2.09, 0.21; p = 0.017) along with the differential white blood count for lymphocytes (AMD = 0.98, 95% CI: 0.50, 1.46; p < 0.001), monocytes (AMD = 0.54, 95% CI: 0.22, 0.85; p = 0.001), neutrophils (AMD = -3.42, 95% CI: -4.15, -2.69; p < 0.001), and eosinophils (AMD = -0.20, 95% CI: -0.37, 0.03; p = 0.019) were likely clinically important findings.

**Conclusion:** Given similarities between important hematological findings and disease profile of patients with autoimmune disorders, it is plausible to postulate that Podoconiosis may have an

autoimmune-related mechanism of action. With implementation of widespread footwear and education surrounding Podoconiosis, further studies will need to explore the biological mechanism to intervene in this debilitating disease.

**Key words:** Podoconiosis, Hematological, Immunological, footwear, Autoimmune, Ethiopia

**Title: Determination of community-based reference interval of Aspartate aminotransferase to Platelet Ratio Index (APRI) among healthy populations in Mekelle City Tigray, Northern Ethiopia.**

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**Background:** Aspartate aminotransferase to Platelet Ratio Index (APRI) currently becomes a biomarker for screening liver fibrosis since liver biopsy procedure is invasive. Besides, there is variation in pathological interpretation as well. Clinical Laboratory Standard Institute recommends establishing age, sex and environment specific reference interval (RI) for biomarkers in a homogenous population. There is no RI established for APRI in Ethiopia. Thus, we aimed to derive community-based reference interval of APRI for individuals aged between 12 and 60 years old in Mekelle city Tigray, Northern Ethiopia.

**Method:** In this cross-sectional community-based study, we followed the Clinical Laboratory standard Institute (CLSI) recommendation of 120 participants per each of age and sex partition. Considering a 30% exclusion from data analysis based on previous studies, a total sample size of 688 individuals were enrolled for 4 partitions from three randomly selected districts in Mekelle city after securing ethical approval (i.e., 30 % x 688=208 to be excluded during data analysis). The sample size to kebelles (smallest administrative unit) was distributed proportionally to household number in each district. A lottery method was used if more than 2 study participants were found per partition in a household. Aspartate aminotransferase was analyzed using Biosystem chemistry analyzer and platelet counts using Sysmex automated hematology analyzer. Kolmogorov–Smirnov test was used to check data distribution for normality. The 95% RI was estimated using reference limits at 2.5 tie and 97.5th percentiles after excluding the outliers using Box and Whisker plot. The non-parametric Mann-Whitney U test was used to

appreciate sex specific statistical difference. SPSS version 25 software was employed for data entry and analysis.

**Result:** of the 688 participants, 534 (264 males and 270 females), qualified for the final analysis. Children below 18 years constituted 264 and 270 were adults. The APRI reference interval was 0.137-0.449; 0.182-0.330; 0.106-0.379 for adult male, female and combined, respectively and for children it was 0.107-0.442 for male; 0.085-0.309 for female; and 0.0900.378 combined. The study appreciated statistical difference among gender for APRI reference interval. The upper and lower reference interval of males was higher than females in all age partition and there was no statistical difference between age partition.

**Conclusion:** We recommend this gender specific reference interval for the APRI biomarker for screening of liver fibrosis to minimize the invasive liver biopsy.

**Key words:** Aspartate aminotransferase, Platelet, APRI, reference Interval, CLSI, Ethiopia

**Title: Predictive value of Platelet to Lymphocyte ratio, Neutrophil to Lymphocyte ratio and Mean Platelet Volume in Esophageal cancer patients at Tikur Anbessa specialized hospital Addis Ababa Ethiopia.**

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**Background:** Esophageal cancer ranked 7th globally in terms of incidences and also 6th in causing death. Inflammation is a major factor in the emergence and spread of malignancies. Though little investigated in our set up, there are some indicators that parameters like the Neutrophil to Lymphocyte ratio (NLR) and Platelet to Lymphocyte ratio (PLR), and Mean Platelet Volume (MPV) could be predictive inflammatory markers of esophageal cancer.

**Objective:** The aim of this study was to investigate the predictive value of PLR, NLR, and MPV in esophageal cancer patients at Tikur Anbessa specialized Hospital, Addis Ababa, Ethiopia.

**Methods:** A comparative cross-sectional study was conducted amongst 112 esophageal cancer patients and 112 controls. Complete blood count (CBC) of each patient was determined before surgery using Beckman coulter DxH800 automated hematology analyzer. Sample collection and analysis were performed between May 2021 to August 2022 and at the same time the collected data from questionnaires and laboratory analysis were entered to SPSS version 25 for analysis.

In order to calculate the Neutrophil-to-lymphocyte ratio (NLR), the total neutrophil count was divided by the total lymphocyte count and for Platelet-to-Lymphocyte ratio (PLR), the platelet count was divided by the absolute lymphocyte count. The ROC curve was used to estimate diagnostic performance of NLR, PLR, and MVP.

**Results:** Esophageal cancer patients had higher WBC (7.8 vs 7.4,  $p=0.0001$ ), Absolute Neutrophil (5.62 vs 4.67,  $p=0.007$ ), lesser MPV (8.53 vs 9.41,  $p=0.0001$ ), lesser absolute lymphocyte (1.56 vs 2.05,  $p=0.008$ ), higher NLR (4.12 vs 2.79,  $p=0.001$ ), and PLR (19.56 vs 13.62;  $p=0.004$ ) compared to healthy participants. High diagnostic effectiveness was demonstrated by ROC curve analysis for NLR, PLR and particularly MPV in esophageal cancer patients with threshold values of NLR  $\geq 2.474$  (Area under the curve=0.603, 95% CI, 0.5290-0.677), with sensitivity of 63.4%, and Specificity of 50% ,  $P$ -value 0.001), PLR  $\geq 11.6376$  (Area under the curve=0.545, 95% CI, 0.469-0.622), Sensitivity 56.3%, and Specificity 55.4%,  $P= 0.004$ ) MPV $\leq 9.05$ (Area under the curve=0.783,95% CI, 0.716-0.849), with Sensitivity of 83% and Specificity of 72.3%,  $P < 0.001$ .

**Conclusion:** Mean platelet volume gave the highest sensitivity and specificity; together with NLR and PLR they can serve as helpful signs for early finding and recognition of esophageal squamous cell carcinoma and adenocarcinoma. Since these parameters are obtained from the routine CBC with no additional cost, we recommend their utility as supplement markers.

**Key words:** Neutrophil-to-lymphocyte-ratio, platelet-to-lymphocyte ratio, mean platelet volume, esophageal cancer, predictive value

## **Title: Stress and Mental Health Among Female Immigrants in South Africa: Exploring Social Support and Coping Strategies Following Traumatic Experiences**

**Authors:** Prof. Julian Pillay\*, Prof. Gugu Gladness Mchunu\*, Dr. Rowan Madzamba\*  
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### **Background**

Estimated to be 2.9 million as of 2020, the increasing number of immigrants in South Africa has also resulted in hostility and violence. However, limited empirical research has been conducted to explore how immigrants re-integrate into the South African society after experiencing social violence. This study purports to fill in this knowledge gap by capturing the ways Zimbabwean female immigrants utilize to reintegrate into the South African society after witnessing social violence in Durban, South Africa

### **Method**

Data were collected based on Interpretive Phenomenological Analysis (IPA) design through face-to-face in-depth structured interviews with twenty (20) Zimbabwean female immigrants. Snowball and purposive sampling were used to recruit participants for the study. Data collected were analysed using thematic analysis.

## **Results**

Movement from one place to another is considered a safe way to avoid experiencing danger in the future. Zimbabwean female immigrants adopt local culture and language as a way to reintegrate into the South African society after witnessing social violence. Creating connections and joining local religious churches offer confidence and a sense of belonging to female immigrants as they try to reintegrate into the South African society after witnessing and experiencing social violence.

## **Conclusion**

In the face of danger immigrants' device ways to overcome the challenge, becoming resilient to the environmental dangers, thus focusing on the main purpose to be achieved. By finding ways to reintegrate into the South African society after experiencing dangerous threats and social violence shows that Zimbabwean female immigrants in Durban got no intention of going back to their home country. There is therefore need to strengthen community support systems through partnerships among local organizations and authorities through provision of tailored resources, which promote cultural sensitivity and inclusivity.

## **Title: Experiences of Female Immigrants in Durban's Public Hospital Maternity Wards: A Qualitative Exploration**

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## **Background and Objectives**

The study investigated the experiences of female immigrants when accessing maternity services in public hospitals in Durban, South Africa. With the increasing migration to urban centres like Durban, understanding the unique challenges and needs of female immigrants in accessing maternal healthcare was crucial for improving service delivery and promoting maternal health outcomes. This research sought to shed light on the lived experiences, barriers, and facilitators encountered by female immigrants during their maternity care journeys in Durban's public hospital settings.

## **Methods**

Data were collected based on Interpretive Phenomenological Analysis (IPA) design through face-to-face in-depth structured interviews with twenty (20) Zimbabwean female immigrants. Snowball and purposive sampling was used to recruit participants for the study. Women who have accessed maternity care were considered for the study. Thematic analysis was utilized to identify key themes and patterns in participants' narratives, allowing for a comprehensive understanding of their experiences within the maternity wards care system in Durban Public Hospitals.

## **Results**

Findings revealed a range of experiences and challenges faced by female immigrants in accessing maternity care services in Durban's public hospitals. These include encounters with medical xenophobia, discrimination based on nationality or migrant status, and pervasive fear of the unknown by female immigrants as well as rude behaviour from hospital staff and also language challenges. Despite these challenges, participants also highlighted positive experiences and identified some supportive healthcare providers and interventions that facilitated their access to quality maternal healthcare.

### **Conclusions**

The study underscored the importance of addressing the unique needs and challenges of female immigrants accessing maternity services in Durban's public hospitals. Efforts to improve maternal healthcare delivery should focus on enhancing cultural competence among healthcare providers, implementing language interpretation services, strengthening social support networks, and advocating for policies that promote equitable access to maternal healthcare for all women, regardless of their immigration status or nationality. By prioritizing the voices and experiences of female immigrants, policymakers and healthcare providers can work towards more inclusive and effective maternity care services in Durban and beyond.

**Title: Bridging the Gap:** Enhancing Refraction Attendance in the Pono Yame Project through Immediate Triage

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### **Background and objectives:**

The Botswana Ministries of Health and Education, Skill and Development are implementing Pono Yame, a national eye health project to screen school-going children aged 5 and above. The program assesses and provides continuous quality improvement by addressing disparities in the screening-to-spectacle cascade. As a local quality improvement technical partner, we sought to identify existing gaps and propose solutions to improve service Delivery.

### **Methods or Description:**

The Pono Yame project routinely gathers and analyses a wide spectrum of monitoring data from target beneficiaries on service use at many points of the student eye health care pathway. Through periodic review of such data together with stakeholders, new strategies are developed to close gaps to ensure comprehensive eye care for all.

During early rollout of screening, we noted important gaps in the proportion of children who screened positive for vision impairment who did not receive refraction services for spectacles. Consultation revealed an approach involving triaging and refracting of school-going children two weeks or more after initial screening. Following periodic review, gap analysis in consultation with implementers and stakeholders, the service delivery approach was reviewed and revised.

### **Results or Lessons Learned:**

The new approach adopted following consultation promoted decentralization of human resources for screening from national to district level. Initial eye health programme implementation involved ten (10) vision screeners from the national ministry, one ophthalmic nurse, and three optometrists, who provided the services in the 4 districts. Following the consultation, five (5) screeners from the district, along with two ophthalmic nurses and one optometrist comprised the team to provide the same services in subsequent districts. Under the new approach, the time between screening and refraction was reduced from 14 days to 1 day after screening, that coincided with significantly higher refraction attendance rates: from a refraction attendance rate of 63% (initial approach) to 96% in districts that adopted the new approach.

### **Conclusion or Way Forward:**

Immediate triage, as implemented in the Kgatleng district, showed that there was an improved outcomes in refraction attendance compared to the delayed approach. These findings show the importance of timely service provision in eye health projects, and the benefits of consultative stakeholder engagement to identify and implement quality improvement strategies. There remains a need to further explore and implement strategies aimed at enhancing the quality and accessibility of eye health care services for school going Children.

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**Title: Systematic review and meta-analysis of randomized controlled trials on effectiveness and efficacy of pyriproxyfen, chlorfenapyr, and piperonyl butoxide longlasting insecticidal nets (LLINs) with pyrethroid-only LLINs for malaria control in Africa**

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**Background:** Long-lasting insecticidal nets have significantly reduced the malaria burden in the past decade has been achieved through the upgrading of pyrethroid long-lasting insecticidal nets (LLINs), but the Pyrethroid resistance threatens the effectiveness of malaria control in subSaharan Africa, prompting the development of new nets with dual active ingredients.

Therefore, the objective of this systematic review and meta-analysis is to pool estimates of the effectiveness and efficacy of pyriproxyfen, chlorfenapyr, and piperonyl butoxide long-lasting insecticidal nets (LLINs) compared with pyrethroid-only LLINs for malaria control in African.

**Method:** The protocol was registered in PROSPERO on January 24, 2024 (CRD42024499800). It included cluster randomized or prospective clinical trials comparing Pyriproxyfen, Chlorfenapyr, and/or Piperonyl Butoxide for malaria control (test arm) and pyrethroid-only standard LLINs (control arm) for malaria control. The extracted data from eligible studies were pooled using the random effects model and expressed as a risk ratio (RR) with a 95% confidence interval (CI) by using Excel and STATA 17.

**Result:** A study involving 17475 households from 10 randomized controlled trials found no significant difference in malaria infection risk reduction among children using Pyriproxyfen group. However, using chlorfenapyr and piperonyl butoxide LLINs post-intervention for 6 months to 36 months significantly reduced the risk of malaria infection compared to pyrethroid-only nets. The chlorfenapyr treatment group had a 10% reduction in malaria infection risk, with a pooled overall prevalence of 25.96 per 100 children in the chlorfenapyr group and 32.38 per 100 children in the piperonyl butoxide group compared to 41.60 per 100 children in the control Pyrethroid-only group. This meta-analysis determined entomological outcomes effectiveness and efficacy showed they effectively reduced vector density per household per night and mean inoculation rates, with a 23% reduction in chlorfenapyr, a 7% reduction in pyrethroid-only treatments, and a 12% reduction in piperonyl butoxide treatments groups.

**Conclusion:** This study found that chlorfenapyr and piperonyl butoxide treatments significantly reduced malaria infection risk in children in Sub-Saharan African countries. The review emphasizes the effectiveness of malaria control measures in preventing infection, anaemia, vector density, and inoculation rates. The study recommends enhanced prevention strategies, especially for vulnerable populations, and resistance management strategies to maintain effectiveness in combating malaria in resource-limited countries.

**Title: Magnitude, disparity and predictors of Poor quality Antenatal care service: a systematic review and meta-analysis**

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**Background:** Antenatal care is directed towards ensuring healthy pregnancy outcomes. Quality antenatal care increases the likelihood of receiving effective intervention to maintain maternal, fetal, and neonatal outcomes while poor quality is linked to poor pregnancy outcomes. However, owing to the complex nature quality, researchers have followed several approaches to systematically measure it. The evidence from these variable approaches pose challenges to programmers and policymakers. Hence, it is imperative to obtain a pooled estimate of the quality of antenatal care. Therefore, considering the scarcity of evidence on the quality of antenatal care, this study aimed to fill this knowledge gap.

**Objective:** This study aimed to estimate the magnitude, disparity and predictors of quality of Antenatal Care services. **Method:** This study conducted a literature search for published and unpublished sources from 2002 to September 8, 2022, to assess the prevalence of quality antenatal care. Statistical heterogeneity was assessed using Cochran's Q test, and sensitivity and sub-group analyses were conducted. All statistical analyses were performed on Stata 16. **Results:** The global pooled poor quality of ANC was 64.28% (95%CI: 59.58% – 68.98%) (I<sup>2</sup> = 99.97%, p =0.001). The identified pooled predictors of good quality antenatal care service were: number of ANC visits (fourth and above ANC visit) (AOR = 2.6, 95% CI: 1.37- 3.84), family wealth index (AOR = 2.72, 95% CI: 1.89- 3.55), maternal education attainment (AOR = 3.03, 95% CI: 2.24- 3.82), residence (urban dwellers) (AOR = 4.06, 95% CI: 0.95- 7.17), and confidentiality ANC (AOR = 2.23 (-0.36-4.82).

### **Conclusions:**

The study found regional and country-level disparities in the quality of antenatal care services for pregnant women where poor-quality ANC services were provided for more than two-thirds to three-fourth of ANC attendants. Therefore, policymakers and health planners would put a great deal of emphasis on addressing the quality of Antenatal care services.

**Policy implications:** - This study revealed regional and country-level disparities where pregnant women who resided in Asia, Africa, and the South American continents had the lowest quality antenatal care services provided. Therefore, policymakers and health planners would put a great deal of emphasis on addressing the quality of Antenatal care services.

**Recommendation 1:** Policymakers and global funders need to invest resources to monitor and improve the quality of antenatal care in order to meet the global maternal mortality target as per the SDGS plan by shifting health systems from coverage of ANC services to quality of ANC services based on World Health Organization (WHO) quality ANC contents.

**Recommendation 2:** Health care systems in LMICs should provide high-quality ANC based on WHO recommendations for pregnant women in need of quality services at all levels.

**Recommendation 3:** The Ministry of Health should maintain high-quality antenatal care services per nationally accepted WHO recommendations at all levels.

**Recommendation 4:** Policymakers and health planners should prioritize the quality of ANC service as current international and national public health agendas to reduce maternal and neonatal mortality and morbidities as per SDGs plan 2030.

**Keywords:** Antenatal Care, pregnant women, Poor quality, pooled prevalence

## **Title: Attitudes of Older Adult Patients and Caregivers Towards Deprescribing of Medications in Ethiopia**

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**Background:** Deprescribing is essential for reducing inappropriate medication use and polypharmacy. For a holistic approach, it is essential to know how older adult patients and their caregivers perceive deprescribing.

**Objective:** To assess the attitude of older adult patients and caregivers towards deprescribing medication at Ambo University Referral Hospital.

**Methodology:** Institutional-based cross-sectional study was conducted using the revised Patients' Attitude Towards Deprescribing tool (rPATD). The data was analyzed using the SPSS-25 software. Backward linear regression and logistic regression were used to measure association between outcome and determinant variables. The two-sided P-value  $\leq 0.05$  with 95% confidence interval was utilized for reporting significant factors.

**Results:** One hundred fifty-six (81.3%) of the respondents (ie, 85.0% of older adult and 77.2% of caregivers) agreed to stop one or more of their regular medications if the physician said it was possible despite 98 (51.0%) of them (ie, 49.0% of older adult and 53.3% of caregivers) being satisfied with their/their care recipient's medications. On the overall aggregate mean score, the respondents had a neutral position (2.63.59) regarding the burden and concerns of stopping medications whereas the majority of them disagree (1.0 - 2.59) with the inappropriateness of the medication they were taking and agreed (3.6- 5.0) with the need for their involvement in treatment decision making. Concerns about stopping medicine scores (AOR = 0.440, 95% CI = 0.262-0.741, P = 0.035) and perceived levels of medication inappropriateness (AOR = 0.653, 95% CI = 0.456-0.936, P = 0.020) was

significantly associated with the willingness to discontinue and overall satisfaction with their medicine regimen Respectively.

**Conclusion:** The majority of older adult patients and caregivers would like to deprescribe if the physicians recommended it. The perceived concerns of stopping and inappropriateness of the medicines was associated with the willingness to deprescribe and overall satisfaction with their medicine respectively. Healthcare providers should prompt the deprescribing process with older adult patients and caregivers by addressing their concerns about stopping medications.

**Keywords:** attitude, caregiver, deprescribing, older adult patients, Ethiopia

**Title: Early Diagnosis of Human immunodeficiency virus (HIV ) Infection Using Polymerase Chain Reaction Technique on HIV exposed infant in university of Abuja teaching Hospital, Gwagwalada; Abuja, Nigeria.**

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**Background and Objectives:** The use of Polymerase Chain Reaction (PCR) technique in the early diagnosis of Human Immunodeficiency Virus (HIV) infection in HIV exposed infants. PCR is

a sensitive and specific tool for the detection of HIV in infants exposed to the virus and is essential for appropriate management and prevention of HIV transmission.

**Methods:** A total number of 163 HIV-exposed infants are recruited 54(33%) tested positive, out of the 54 that tested positive only 2 received ARV and tested positive while 52(96.3%) of the 54 HIV-exposed infants that tested positive were not on ARV (Figure 1). Both subjects were on AZT/NVP. The remaining 109(67%) of HIV-exposed infants tested negative.

**Results:** 52(43.3%) of their infants tested positive, 68(56.7%) tested negative while 43 mothers of the HIV exposed infants on ART all their infants tested negative indicating significant difference between those taking ART and those not placed on ART.

76(46.6%) HIV-exposed infants are on artificial milk while 87(53.4%) received breast milk. 3 of the HIV-exposed infants on artificial milk tested positive while 51 of them on breast milk were positive (Figure 3). The difference observed were statistically significant, as higher number on breast milk tested positive. 24 out of 72 male and 30 of 91 female tested positive. This difference was statistically significant. Results of current studies have shown that early diagnosis of HIV-exposed infants with PCR can have a beneficial impact on reducing long-term morbidity and mortality.

**Conclusion:** This research examines the potential for using PCR to improve the early diagnosis of HIV in infants. It also explains how PCR techniques are used in the diagnosis and management of HIV in infants and discusses the challenges associated with using PCR in HIV exposed infants.

**Key words:** Polymerase chain reaction, diagnosis, Human immuno deficiency syndrome, infants, infection

**Title: PREVALENCE AND PATTERN OF ABNORMALITIES PAP SMEAR EXAMINATION IN WOMEN ATTENDING FERTILITY CLINIC IN UNIOSUN TEACHING HOSPITALS, OSUN STATE, NIGERIA.**

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**Introduction:** Infertility is described as failure to conceive after one year of unprotected sexual intercourse. One of the causes of female infertility is caused by cervical abnormalities which may be due to bacterial and parasitological infections, hormonal imbalances of Lentinizing hormone, follicular stimulating hormone, oestrogen hormone and progesterone hormone.

**Aim of the Study:** This study aimed to determine the prevalence and pattern of abnormal cervical Pap smear in women with infertility attending fertility clinics at Uniosun Teaching Hospitals Osogbo, Osun State.

**Methods:** This study was conducted at the fertility clinic of University of Osun Teaching Hospital, Osogbo, Osun State. The study population comprised of 50 infertile women and 50 fertile women who are attending the gynecology clinic of University of Osun Teaching Hospital, Osogbo, Osun State. Questionnaire was used to obtain relevant data. Cervical sample was

collected using Ayre's spatula, two smears were prepared and stained with Papanicolaous and H&E staining techniques.

**Results** were analyzed using frequency table.

This study observed the prevalence of abnormal cervical smear among infertility women to be 16(30%), while only 03(6%) were observed among the control group (fertile women). Atypical squamous cells of undetermined significance have the highest abnormalities observed in this study with 30%, about 28% of the Pap smear results were negative for inflammation, while total inflammation observed was 72% among the infertility women.

**Conclusion:** This study concluded that abnormal pap smears in this study is significantly more often in women with infertility as compared with fertile women.

**KEY WORDS:** Infertility, Oestrogen hormone, Pap smears, Progesterone hormone

### **Title: Factors and obstacles to vaccination against COVID-19 among healthcare workers in the Democratic Republic of Congo**

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## **Background**

In the Democratic Republic of Congo, 97,710 cases have been reported since the first case of Covid-19 was reported on March 10, 2020. Several interventions have been put in place, including vaccination against Covid-19. Despite efforts to facilitate access to these vaccines, coverage remains low in DRC and is among the lowest in Africa. Healthcare workers (HCWs) are a priority target for COVID-19 vaccination because of their high risk of infection with SARS-CoV2. This study was conducted to identify factors and barriers associated with vaccination against COVID-19 among HCWs in Kinshasa.

## **Methods**

Using a systematic random sampling approach, this cross-sectional study included 200 HCWs selected from 10 health facilities in Kinshasa, the pandemic's epicenter in February 2024. They were selected according to the weight of each health facility and professional category. Data were collected using an electronic questionnaire in REDcap. Data were analyzed using Stata17 and described as frequencies and percentages with corresponding confidence intervals (CI). Associated factors with vaccination status were identified using a

binary logistic regression model through odds ratios (OR) at a 95 %CI level of statistical Significance.

## Results

Of all HCWs in this study, 114, 57.0% (95% CI: 49.8%, 64.0%) were vaccinated against COVID-19. Of these, 107 (53.5%) were fully vaccinated, and 7 (3.5%) had not completed the COVID-19 vaccine schedule. Among the 85 unvaccinated HCWs, only 16 (18.8%) were willing to be vaccinated. Most respondents worked in urban settings (180, 90%), while the rest worked in peri-urban areas.

Vaccinated HCW status was significantly associated with age greater than or equal to 30 years (aOR: 4.2; 95% CI: 1.7, 10.5), working in an urban health facility (aOR: 3.8; 95% CI: 1.2, 11.5), agreeing with the hypothesis of reduced morbidity and mortality from COVID-19 following vaccination (aOR:4.1; 95% CI: 2.1, 8.1), being confident in answering patients' questions about COVID-19 (aOR:5.4; 95% CI: 2.0, 14.9). Among the vaccinated HCWs, 94% favored recommending the COVID-19 vaccine to others, compared to 65% of their non-vaccinated counterparts.

Speed of vaccine development, 36 (38.3%); inadequate information about the vaccine, 17 (17%); and confidence in other effective treatments; 14 (14.9%) were the main reasons for no interest in receiving an approved COVID-19 vaccine and/or booster. 40% of all these HCWs said they needed to have the vaccination center nearby to get motivated, and 25% of all these HCWs had to be persuaded to change their minds to get vaccinated, while more than half (67%) were not willing to be vaccinated nor were they to be persuaded. Additionally, despite the country's policy recommending booster vaccinations every 6 months, none of the respondents had received a booster dose.

## Conclusions

There is a need for advocacy with health authorities to improve HCWs' perception of the effectiveness of the COVID-19 vaccine. Once convinced, they will not only get more vaccinated but will also motivate their patients to be vaccinated. Furthermore, the findings highlight a need for the authorities to bring vaccines closer to the HCW and to create awareness about booster vaccinations to improve uptake.

Keywords: COVID-19, Vaccination, healthcare workers, Democratic Republic of the Congo.

**Title: Bridging the Gap: Leveraging Partograph Utilization Insights to Facilitate the Smooth**

**Implementation of the Labour Care Guide at Mbale Regional Referral Hospital, Eastern, Uganda**

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**Introduction:** Maternal and newborn care has seen significant advancements through evidence-based guidelines, including the labour care guide introduced by the World Health Organization (WHO). However, the successful implementation of these guidelines relies on analysing the level of effective utilization of tools such as the partogram. In this study, we aim to assess the effects of a QI project aimed at improving the utilization of the partogram, and the current level of its utilization at Mbale Regional Referral Hospital, Uganda, and identify the possible challenges in its use and design effective procedures in rolling out of the labour care guide into existing clinical practices.

**Methodology:** A retrospective study combining quantitative and qualitative approaches was conducted. In March 2021 200 files were randomly sampled and checked for presence or absence of a partograph and this formed the baseline data before starting a QI project to improve utilization of a partograph to improve partograph utilization. In March 2023, 1120 patient files were reviewed from deliveries that happened between April to December 2022, these were analyzed to determine the presence or absence of a partogram in the file and the level of utilization. 6 key informant interviews were also conducted with healthcare workers to explore factors influencing partograph utilization and recommendations.

**Results:** While certain mothers' particulars were well-documented, critical information such as LNMP, EDD, and risk factors displayed higher rates of missing data. Monitoring rates decreased with subsequent times with an average level of partograph utilization of 39%. The presence of a partograph in patients' files improved from 3% in March 2021 to 80% from April to December 2022. Key informant interviews revealed challenges related to heavy workload, inadequate human resources, poor attitudes towards partograph utilization, knowledge gaps, and policy-related issues.

**Conclusions:** The level of partograph utilization at Mbale Regional Referral Hospital remains suboptimal (<50%), Which could hinder the successful rolling out of the LCG. Addressing the identified challenges is essential for improving maternal and newborn care practices. With the above insights in mind and with support from Seed Global Health, the team is set to effectively change its goal from improving the level of utilization, which improved from 3% to 80%, towards rolling out the LCG.

**Recommendations:** To enhance partograph utilization and facilitate the smooth implementation of the labour care guide, we recommend increasing human resources, providing targeted training and education, improving hospital infrastructure, fostering positive attitudes among healthcare workers, and implementing continuous quality improvement programs.

**Keywords:** Partogram, Partograph, labour care guide, maternal and newborn care, Partograph utilization, implementation insights, healthcare workers, barriers, Mbale Regional Referral Hospital, Uganda.

**Title: Rural Nurses Experiences with Births Outside the Hospital: A Qualitative Descriptive Study.**

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**Background and Objectives**

The shortage of midwives worldwide is estimated to be around 900,000, and this shortage is particularly severe in low-income countries and Africa, including Botswana. As a result, most rural health facilities are staffed by registered nurses who are not qualified midwives. As a result, these nurses must handle births alone in rural health facilities and during transportation, which can be high-risk. Maternal mortality rates have been increasing in Botswana, with the most common direct causes being immediate postpartum hemorrhage (28%), puerperal sepsis (24.7%), and hypertension (17%), which is an indication that rural nurses must have the knowledge and skills to conduct baby deliveries and be ready for unexpected circumstances. This study aimed to describe rural nurses' experiences with births outside the hospital.

**Methods**

A qualitative descriptive approach was used using a semi structured interview. Twenty-six registered nurses from four remote, isolated rural health districts in Botswana participated in this study. Purposive convenience sampling technique was employed.

**Results**

The following five major themes were identified: the joy and relief felt when a child is born safely, the feeling of being unprepared and inadequate for the great responsibility, the need for guidance and reassurance from experienced colleagues, the importance of maintaining inner composure in stressful situations, and the significant challenge of providing safe delivery of babies in the confined space of an ambulance.

**Conclusions**

Reducing maternal mortality and morbidity requires universal access to maternal health services. Nonetheless, there is a severe scarcity of midwives, which jeopardizes medical care. The results highlight the need for rural nurses to receive training in performing deliveries and the significance of midwifery as a post-basic program, as it was in 1970 for nurses who finished their nursing education. To lower the national maternal death rate, it is also crucial to prioritize training midwives and general nurses in emergency obstetric care (EMOC). This will help the nurses feel more confident when assisting with births outside of Hospitals.

### **Title: Achieving universal health coverage: the role of patient satisfaction with Health Care Delivery**

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**Background and objectives:** The Sustainable Development Goal three target eight aims to achieve universal health coverage by 2030. Patient satisfaction with healthcare services could play a pivotal role in its achievement. This is because the perceptions, particularly about the quality of care received could influence the client's decision to remain in care or recommend the service to a family member or friend. The current study sought to assess students' satisfaction with healthcare delivery in a health facility in a public university in Ghana.

**Methods:** An institution-based cross-sectional study was conducted among 500 students recruited through a systematic sampling approach at the Students' Clinic of a public university in

Ghana. A structured questionnaire was used to collect data including sociodemographic characteristics, health system factors, service quality dimensions and overall satisfaction with the service. Factors associated with overall satisfaction with services were assessed using logistic regression analysis with statistical significance considered at  $p < 0.05$  at a 95% confidence interval.

**Results:** The mean age of the study participants was 21.3 ( $\pm 2.5$ ) with a range of 17 years to 44 years and over two-thirds of them were females. Overall, 81.8% of the students were satisfied with the services they received. Of the 500 students who were recruited for this study, only 75.0% were served all their medications at the clinic. After adjusting for significant covariates in the multivariable analysis, reliability (Adjusted odds ratio (AOR): 1.19, 95%CI: 1.09 – 1.30) was associated with increased odds of satisfaction with services while 120+ minutes of waiting time (AOR: 0.26, 95%CI: 0.12 – 0.56) and uncomfortable waiting area (AOR: 0.34, 95%CI: 0.19 – 0.59) were protective of satisfaction with services.

**Conclusion:** Generally, most of the students were satisfied with the services they received at the clinic. The reliability dimension of service quality, waiting area and waiting time should be prioritized by hospital management to enhance patient satisfaction.

**Title: Efforts to bridge gaps: Achieving Universal Health Coverage through strengthening education and training of pharmacy mid-level workers**

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**Background:** Human resource for health remains the most important building block of the health system, yet its shortage threatens global health service delivery. While in South Africa (SA), the mid-level worker for health concept has rekindled hope for transitioning into Universal Health Coverage (UHC) through National Health Insurance (NHI), the historical role of this cadre within the pharmacy profession has been marked with confusion, call for revisions and concerns relating to the quality of the current training programs.

**Objectives:** The objective of this paper is to track the evolution of pharmacy mid-level workers for health in South Africa from the inception to how its continued revision could potentially improve the quality of training, thereby responding to UHC through NHI.

**Methods:** A qualitative study approach, using a grounded theory study design was employed to interview eleven participants, including pioneers of the pharmacy profession, academics, key stakeholders and regulatory experts of pharmacy education and practice. Through NVivo version 14 software, data was analysed using an inductive thematic approach.

**Results:** Our study found that the transition of South Africa's health system from apartheid to democracy impacted the pharmacy mid-level workers for health, with the first group emerging from the category referred to as unqualified assistance. This is the group that did apprenticeship as part of the requirement to enroll for the profession in pharmacy but could not meet all requirements to qualify as pharmacist. The second group emerged from the category of employees that were allocated to work in hospital pharmacies from various hospital administrative units without any pre-requisite qualification. The promulgation of various Acts and Regulations provided an opportunity for the statutory body to enforce compliance. This fast-tracked the pharmacy mid-level workers' registration with statutory body, accredited training and regulated practice. However, concerns emerged around the misalignment of the workplace activities with curriculum. The current training program does not provide competencies to work under indirect supervision of pharmacist, especially at Primary Health Care (PHC) where this cadre is needed. Currently, health inequalities and poor access to pharmaceutical services are notable challenges, especially in remote rural-based PHCs where unqualified assistants control medicine storerooms.

**Conclusion:** There is still an opportunity to enhance competencies through improving training and the curriculum. This will enable role expansion and implementation of the indirect supervision concept especially at PHC, where there is a dire need for this cadre. This initiative is critical in strengthening pharmaceutical services at various levels of care and achieving UHC through NHI.

**Impact Evaluation of the STRIPEN HIV Care Program in Some Health Facilities in Nigeria**  
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## Background and Objectives

Strengthening Interprofessional Education in Nigeria (STRIPEN HIV), was initiated in 2019 and has contributed to the advancement of several Sustainable Development Goals (SDGs), including enhancing healthcare (SDG 3), fostering quality education (SDG 4), addressing gender disparities (SDG 5), reducing inequalities (SDG 10), and promoting collaborative partnerships for sustainable development (SDG 17). In many African healthcare settings, professionals often operate in silos, leading to interprofessional conflicts that detrimentally affect quality healthcare delivery. In the past 4 years, the STRIPEN-HIV program has used the challenges of HIV and COVID-19 to train various healthcare professionals with the objective of improving collaboration among them, thereby enhancing patient outcomes. We here report the impact of STRIPEN HIV training on participants as well as patient care in health facilities in Nigeria.

## Methods or Description

An instrument was used which captured participants' performance and competence in caring for HIV patients and managing other infectious diseases, as well as observed/perceived improvement in patient management if their facilities was administered to those who have participated in the STRIPEN HIV training in the last four years. The instrument was deployed via google form, and the resulting data was analyzed using descriptive statistics. The questionnaire evaluated improvement in interprofessional relationships and collaboration in patient management and some quality indicators such as patient care, stockouts, patient linkage, retention, adherence, pediatric HIV care, comorbidity management, viral load suppression, post-exposure prophylaxis, and mother-to-child transmission reduction within their facilities since STRIPEN HIV training.

## Results

Participants included physicians (37.5%), nurses/midwives (25%), medical lab scientist (17.9%), counsellors/social workers (16.1%), and pharmacists (3.5%). About 90% of respondents are involved in the provision of service/care of HIV patients in their facilities. Overall, 66.3% and 33.7% were in-service and pre-service Healthcare workers, respectively. About 65.2% were from

tertiary facilities while 11.6%, 17.9% and 5.3% were from secondary, private, and primary healthcare facilities, respectively. All of the respondents noted that the STRIPEN HIV training increased their knowledge and skill and thereby improving their competencies in one or more of the following: multidisciplinary team approach to HIV management, multitasking, interaction with patients, counselling of patients, time management particular in-patient care, PEP and decision making. Most (77%) acknowledged improvement in service delivery of their various health facilities, in the area of interprofessional relationships in HIV patient management (81%), overall patient care (82%), and HIV patient counseling (82.4%). Furthermore, improvement in the quality indicators was reported by most of the respondents as follows; retention in care (74.5%), viral load suppression (82.1%), adherence to medication (87.4), PEP (74.5%), reduction in M-T-C-T (88.2%) and HIV counselling (88.3%).

### **Conclusions**

The STRIPEN HIV Care program has positively impacted service delivery, particularly HIV management in some health facilities in Nigeria. According to participants, this positive impact is attributable to the knowledge and skill acquired from the training as well as an improved multidisciplinary and team approach in managing patients since their participation in STRIPEN HIV. This underscores the need for continuous interhealth professional training in order to achieve better health outcomes in Nigerian health facilities.

## **SUBTHEME 4**

**Title: Capacity building in mental health: A Mental Health Refresher training of nurses and clinicians in the selected districts of Northern Malawi**

### **Authors**

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### **Background and Objectives**

Provision of Mental health services is still a challenge in the districts due to inadequate resources. Saint John of God College of health Sciences is working in partnership with Seed Global Health to build capacity to deliver and advocate for mental health services in Northern Malawi. An initial situational analysis reveals the need for capacity building for healthcare workers working with mental health patients. The objective of the project was to implement and evaluate a mental Health Refresher Training of nurses and clinicians in the selected districts of Northern Malawi.

### **Methods or Description**

A multimethod design was adopted. Using purposive sampling, a five-day training of 40

Mental Health Clinical Officers, Mental Health - Psychiatric Nurses, and general Practitioners (10 from each district) directly involved in mental health service delivery in Rumpfi, Karonga and Nkhata bay district hospitals. The facilitators were four mental health specialists from Saint John of God college. The training started with a pretest to identify the knowledge level or gaps. The developed training program included all topics on Mental Health and Mental Illness, Psychiatric Emergencies, Common Psychotropics, Substance related disorders, Stigma and Discrimination, Geriatric and Maternal Mental Health including advocacy. During the training, the content was delivered through power point presentations, group discussions, questioning and demonstrations as well as simulations which promoted interaction and participation among four facilitators and participants. At the end of the training i.e., on the fifth day members had a post test.

### **Results or Lessons Learned**

The attendance and participation were good throughout the training. The pretest knowledge on mental health ranged from 62% to 65%. After training, there was an improvement in knowledge as evidenced by a post test of 69% to 72%. During the training with interactive discussions, participants indicated shortage of resources including infrastructure and special room for running a mental health clinic and admission of psychiatric patients, inadequate staff working in a mental health clinic—deployed in other departments, poor financing of mental health services, lack of outreach clinics or community services and increase in mental health issues in the districts. Moreover, the participants expressed deployment of qualified mental health professionals to other departments being more prioritised by the management.

### **Conclusions or Way Forward**

There is need to work in partnership to improve mental health services. Follow up meetings are necessary to monitor the implementation of the advocacy activities in the action plan. The implementation strategies included advocacy activities such as to lobby from Mzimba South DHO management for a mental health clinic room, deployment of staff, and adequate financing of mental health services. Plans to conduct mental health awareness through a panel discussion on radio were unearthed.

## **Title: Water Scarcity in Urban Economic Spaces: A Holistic Approach to Improve Health Outcomes**

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### **Background**

In urban economic spaces, the scarcity of water presents multifaceted challenges, often manifested as water collected in drums due to inadequate supply. Water scarcity disrupts daily activities and also poses significant health risks on urban communities.

The Warwick Triangle is part of the city centre of Durban. Almost 500 commuters passing through the area daily, makes it an ideal trading area. Currently there are 9 distinct markets located in the area. In 1996, the Durban City Council, started an urban renewal initiative, which addressed safety, cleanliness, trading and employment opportunities. The project was largely successful at the time. However, that was 27 years ago and without proper and regular maintenance, the infrastructure has deteriorated. There is no piped water in large parts of the area. Although an ablution block is available, lack of maintenance has resulted in blockage of toilets with many associated problems.

The objective of the study was to allow students registered for a module in Public Health to engage with this communities to ascertain environmental factors involved in causing Disease.

### **Description**

A photovoice method was used; students were tasked with an assignment which required exploring the Warwick Triangle markets, to obtain photographic evidence of environmental conditions involved in causing disease. The students were then required to explain how their photographs related to ill health. For the purpose of this discussion, the photographs related to the lack of water have been selected to delve into the profound health implications of water scarcity in large urban economic spaces.

### **Lessons learnt**

The study outlines the adverse health outcomes stemming from inadequate water access, including the heightened risk of waterborne diseases due to the reliance on makeshift water storage solutions. The interconnected nature of water scarcity and health is emphasised, shedding light on the disproportionate impact on vulnerable populations within the urban economic landscape. The reliance on makeshift solutions such as drum collection exacerbates the vulnerability of these spaces to water-related crises.

To mitigate these health challenges, a comprehensive, community-centric approach is proposed. Key concepts include: investing in improved sanitation facilities and promoting the adoption of hygiene practices to reduce the risk of waterborne illnesses; monitoring of water quality; introduction of water purification solutions; and establishing community-led programs to educate residents on waterborne diseases and proper sanitation practices.

### **Way Forward**

This presentation advocates for a balanced and inclusive strategy that addresses water scarcity and also prioritizes the improvement of health outcomes within the urban economic space. The proposed framework ensures adaptability to evolving health challenges, creating a resilient and sustainable urban environment that fosters the well-being of its residents. Linking these solutions to the UN's Sustainable Development Goals (SDGs), particularly SDG 6 (Clean Water and Sanitation) and SDG 11 (Sustainable Cities and Communities), emphasizes the imperative of tackling water scarcity as part of broader sustainability Agendas.

**Title: The Effect of Simulation and Debriefing Using Advocacy Inquiry as a Conversational**

## **Strategy on Gender, Hierarchy and Interprofessional Team Dynamics among Medical and Nursing Students in Uganda**

Joanita Tebulwa, Josephine N Najjuma, Nakazibwe Primrose, Heather MacIntosh, Muhumuza Albert, Shifra Nankunda, Flavia Tumwebaze, Nalini Singhal, Francis Bajunirwe, Treeva Hakim, Data Santorino.

**Objectives:** This study determines whether AI simulation-based training improves gender sensitive patient care and communication skills among healthcare teams.

**Background:** Interprofessional healthcare teams are designed to improve patient outcomes and cultivate learning-oriented teams. In reality, diverse teams often form hierarchies which threaten patient safety and foster hostile workplaces. Communication frameworks like Advocacy Inquiry (AI) have shown to address barriers to effective communication within teams. However, AI training has neither been tested among medical and nursing students nor in low-middle income Countries.

**Methods:** The study recruited 50 medical and nursing students at a low-fidelity medical simulation lab at the Mbarara University of Science and Technology. Students attended facilitator-led AI and gender training before their first simulation. Afterwards, students completed three different clinical simulations twice. The scenarios required students to navigate (a) interprofessional teamwork in a paediatric emergency, (b) hierarchical communication to respond to a superior's medical mistake, and (c) gender sensitivity by delivering family planning care to a minor. Group performance was evaluated using the Interprofessional Socialization and Valuing Scale, questionnaires, and facilitator-completed checklists.

**Results:** Mean performance in hierarchical communication ( $p = 0.04$ ), gender equity ( $p < 0.001$ ) and IPC simulations ( $p < 0.001$ ) increased significantly by 9.2%, 28% and 12.4%, respectively. This study supports the use of simulation training to improve IPC, hierarchical communication, and gender sensitivity among medical and nursing students.

**Keywords:** Advocacy Inquiry, Hierarchical Communication, Gender Sensitization, Medical Simulation

**Title: End AIDS in Africa Community Outreaches(EAACO): Equipping medical students as frontiers in HIV testing and advocacy to impact young persons in Sub-saharan Africa.**

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### **Background:**

Several studies show that medical students are significantly more knowledgeable about HIV than their peers, but this did not always translate to improved perception about HIV. Young people, aged 15-24, are at high risk of acquiring HIV due to factors e.g unsafe sexual practices, inadequate knowledge, and lack of testing. Various publications have showcased the effective of peer-led HIV interventions even among key population.

At the Federation of African Medical Students Association Technical Working Group on HIV, we explored the potential of equipping medical students to serve as peer Educators.

### **Description:**

Between August and November 2023, twenty (20) medical students associations from Five (5) African countries volunteered for the End AIDS in Africa Community Project to commemorate World AIDS Day in their respective communities. Three of these countries (Nigeria, Uganda, and Tanzania) have the highest rates of HIV transmission in Africa. Each school fielded a representative selected based on criteria such as being local officer for the Standing Committee on Health Education, being an ordinary member, or past experience organizing outreaches in their school. Representatives were to undergo a virtual 2-day training in November. The training was divided into three modules, an hour each, on the following topics: "HIV advocacy and experience of living with HIV", "HIV testing", "Communication in HIV advocacy". Feedback forms were administered afterwards. Representatives were tasked with organizing either an HIV-testing exercise or a health education exercise on their campus or in a local secondary school. Representatives were followed up over the course of four weeks after the training to identify their challenges and advise them on how to leverage sexual health resources on campus and in their communities.

### **Lessons Learned**

#### Achievements

- Six out of twenty representatives organized successful HIV testing and/or health education exercises, impacting 2000 young persons across three countries.

#### Challenges

- Six representatives were lost to follow-up and failed to organize an exercise. Eight representatives showed no interest in the project despite their association's willingness. Selection method may need to be reviewed.

### **Conclusion**

There is an untapped potential in the application of medical students as HIV peer educators which can prove to be a cost-effective alternative to training peer educators in low resource settings, even among key populations.

### **Title: Global Health Conference Equity: The African Paradigm A Consensus Exercise**

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### **Background**

Inequitable access to global health conferences is a critical problem predominantly affecting researchers from low- and middle-income countries. Too often, known barriers prevent opportunities to foster collaboration, network, and contribute to policymaking. Conference equity is the “attainment of an equitable level of attendee active engagement, influence, and access to a conference regardless of country of origin, location, available funds or affiliation, through the mitigation of known barriers and enhancement of efficacious facilitators.” Conference Equity Project is a collaborative effort between the University of Global Health Equity and the Program in Global Surgery and Social Change at Harvard Medical School to determine the critical gaps in conference equity via research. It aims to utilize the evidence generated to build a Conference Equity Index (CEI) and Framework, designed for use by conference organizers to measure gaps and improve equity in inclusive participation, funding, and visa access.

### **Introduction**

The Conference Equity project team hosted an official hybrid side event at the Conference in Public Health in Africa (CPHIA) on November 27, 2023, in Lusaka, Zambia with the theme “Global Health Conference Equity: The African Paradigm”. The event aimed at sensitizing the public health community about the role of conference equity, generating actionable strategies to mitigate identified barriers, enhancing facilitators of conference equity, and supporting campaigns that will drive ongoing conversations and actions on conference equity. It included presentations, panel discussions, and a consensus exercise, bringing together a diverse range of participants and panelists with first-hand experience of barriers to attending global health Conferences.

### **Methods**

At the side event, around 36 participants, both virtual and in-person, were assigned to seven breakout groups for discussion, each group was facilitated by an assigned moderator and focused on predetermined themes. These themes were identified based on a review of existing literature and discussions amongst the organizing team regarding common barriers to achieving conference equity. Topics included visas, registration, and logistics, official documentation vs passport power, conference organization and structure, utility of CEI, governmental influence,

and funding. Within each group, participants discussed challenges and proposed recommendations at an individual, government, conference organizer, and affiliate organization level.

## **Results**

All the discussion points were compiled by the moderators. Through an iterative process, these points were reviewed and further grouped into six recurring themes.

Table 01: Consensus exercise summary of major findings based on themes identified

## **Conclusion**

In conclusion, fostering collaboration, and dissemination of information through global health conferences is essential to strengthening Africa's public health institutions/workforce and accelerating progress towards sustainable development goals. Achieving this requires a multifaceted approach involving diverse stakeholders to address disparities in access and engagement at global health conferences, thereby advancing conference equity across the continent and beyond.

## **Title: Academic-Systems partnerships in advanced practice: An Application of the Sigma Global Nursing Leadership Competency Framework**

### **Background and Objectives:**

This project builds on advocacy and policy work in the Anglophone Africa Advanced Practice Nurse Coalition Project (AAPNC 2018-2021), a project which was set up to coordinate a global initiative for advanced practice nursing in Africa with support from global/Africa stakeholders including the ICN, AfrIPEN and AfroPHC. Africa has seen an expansion of existing advanced practice programmes as well as the emergence of new pathways across several African countries including Eswatini, Zambia, Kenya and Ghana since the AAPNC project in 2018. Similar advanced practice workforce development and associated challenges are shared globally; with regulatory reforms in the UK, Canada, Tonga and Ireland among other countries in the last five years. CGFNS (2022) report highlights an increase in international nurse migration, with projections for a further increase in coming years. Therefore, it is imperative that advanced practice nursing workforce is developed and utilised within a collaborative global approach whilst contextualising practice to population health needs for each country as part of solutions to current healthcare workforce crises. LMICs; especially countries in Africa are worst affected given the burden of disease, persistent low investments in nursing workforce development, high nurse-population ratios which existed pre-Covid19 pandemic and have been made worse by lack of mutual partnership working in international nursing recruitment arrangements/collaborations in many Countries.

### **Methods or Description**

This is an evidence informed quality improvement project applying the Sigma Global Nursing Leadership Competency Framework (sigmanursing.org) completed as part of the Florence Nightingale Foundation Global Leadership Scholarship. Collaboration of global academics, health systems leaders and advanced practice leaders in the delivery of a two-day seminar was coordinated and executed. This followed a policy briefing paper and course content development for advanced practice leadership.

### **Lessons Learned**

The project provided further evidence on the need for multi-professional learning, partnership working and collaborative leadership in advanced practice workforce planning and development. This work highlights the critical part played by diaspora workforce in supporting health systems strengthening and UHC ambition in Africa and beyond; particularly in countries where coordinated efforts across systems exist at national level.

To my knowledge, this is the first project utilising the sigma global nursing leadership competency framework within an advanced practice global context. Although the framework was developed for global nursing leadership, lessons learnt demonstrate that the framework can be applied to other health professional groups.

**Way Forward:** Course content will be made freely available to all health professional leaders/health institutions in Africa/LMICs utilising the World Continuing Education Alliance (WCEA) platform over a 3-month period and revised following evaluation. Further Academic-Systems (North-South, North- North and South- South) collaborative projects are being planned to further develop this work and as part of the sustainability strategy.

### **Title: An Institution's Spectrum of Support for International Research: Opportunities to Increase Equity and Partnership**

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**Background.** Research collaborations involving institutions from different countries vary in terms of stakeholder responsibility and implementation models. Collaborators must consider models to equitably share in the design, implementation and eventual dissemination of research. This requires innovative and context specific models for award management, compliance, and operations and logistics.

**Description.** One model includes the foreign academic institution establishing a local entity or subsidiary in the host country to serve as a more active and integrated partner and a central support office for advising and troubleshooting issues. The University of California, San Francisco (UCSF) established affiliate NGO offices in 7 countries in Africa and Asia (Kenya, Laos, Mozambique, Namibia, South Africa, Tanzania, Uganda) to strengthen local partnership and better support operational aspects of implementation of research and training projects. These NGO entities, referred to as Global Programs for Research and Training, have developed policies and structures that reflect local needs and customs, including policies and operating procedures that comply with local regulatory requirements, personnel structures that are almost entirely led by local nationals, and resources to strengthen existing partnerships and nurture new ones.

**Lessons Learned.** UCSF's international entities have increased day-to-day engagement with partners to plan and implement research projects at community-level. Global Programs allows UCSF to think and act locally alongside partners, while developing its own staff and organizational capacity. Concerns include the sustainability of this operating model and the potential for it to limit opportunities for existing local partners.

**Way Forward.** In light of efforts to decolonize global health, UCSF is exploring how this model could be reimaged and further refined to ensure greater equity across partnerships and collaborations through targeted support. Current strategies under consideration include using the University's international entity to nurture and develop a local independent entity to effectively manage and implement collaborative research projects in a sustainable manner.

**Title: African Center for Global Health and Social Transformation (ACHEST) Kampala, Uganda**

**Is the Global Health Workforce (HWF) Crisis getting out of control? A call to action by African Countries**

**Author:** Francis Omaswa

Global health leaders and communities from around the world are raising concerns and alarm as the growing Health Workforce (HWF) shortage continues to worsen globally. Currently, an estimated global shortage of 18 million health workers is expected by the year 2030 – placing many already vulnerable communities at the brink of health disaster. In response to their own growing health care shortage, many High-Income Countries (HICs) have turned to recruitment from Low- and Middle-Income Countries (LMICs) to respond to their health care worker gaps.

This growing dependency on recruitment of international health and care workers from LMICs coupled with inadequate investment in the home countries is driving dangerous depletion and destabilization of health.

There are frequent press reports about demonstrations and strikes of health workers in both HICs and LMICs largely due to poor pay and working conditions with less prioritization of the health and wellbeing of the health workers. There are also reports of unregulated recruitment and migration of health workers from African countries by developed countries. These events represent restlessness and instability in the global HWF situation. During the second week of February 2024, the Governing Council meeting of the African Forum for Research and Education in Health (AFREhealth) met in Lubumbashi, Democratic Republic of Congo where these concerns were discussed.

The international community needs to come together and agree on how to train and share a global pool of health workers using the WHO Code on the International Recruitment of Health Personnel. African countries, including governments and Civil Society should take interest and lead the advocacy that is needed to find lasting solutions to this Global Health Workforce crisis which threatens to retard the achievement of UHC and SDGs.

### **Title: Amplifying Youth Voices in Strengthening Health Risk Management**

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### **Background and Objectives**

Target 3.d of the Health Goal- SDG 3, is to “strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks”. To support the attainment of this, Nigeria Solidarity Support Fund (NSSF) designed the annual, national WeNaija health advocacy campaign. This context-specific approach promotes youth participation in advocacy, leveraging their population size and technology savviness.

According to the United Nations, Youths make up 70% of the population. Datareportal estimates 31.60 million social media users in Nigeria, 28.20 million of these are 18 years and

above. By proactively investing in the long-term capacity development of youths, Nigeria will be better positioned to realise its demographic dividends. This paper highlights NSSF's approach to influencing public risk perception in the attainment of the SDGs over 3 years.

### **Methods or Description**

The WeNaija campaign took the form of a content creation contest using creative skills like photography, literature, and video creation to raise awareness on the management of individual and national health risks. It targeted youths 18-35 years in Nigeria. Youths were engaged in designing the contests to ensure they were relevant and appealing to the target audience. The campaign was launched through various channels including social media and traditional media outlets through a press briefing. To increase youth engagement, physical outreaches were conducted in tertiary institutions across the country in collaboration with student ambassadors. Virtual outreaches were also conducted via social-media platforms and online communities in collaboration with local social media influencers popular among the youth.

Youths created advocacy materials in line with the health risk management theme for the year and shared them via digital platforms including social media. The entries were judged by subject matter experts relevant to the competition format and theme. Exhibitions or youth festivals were conducted to allow physical engagement with the youth, networking, and capacity building on advocacy and creativity. During the festival, advocacy materials in the form of entries was showcased and critiqued. The winners were selected following real-time evaluations by the judges.

Finalists were given opportunities to apply for internship positions at renowned media institutions. A community was also established to ensure continuous engagement and capacity building of the youths.

### **Results or Lessons Learned:**

About 2000 youths registered for the campaigns, 1206 created and submitted advocacy materials, 125 youths received seed funding for their craft, 611 benefited from capacity building sessions, 9 internships were awarded. 3,047,997 were reached with advocacy materials and 75% of interns reported new skills developed.

### **Conclusions or Way Forward:**

Youths make up a significant population of Nigeria and are active users of digital platforms. It is therefore important to capture youth voices in advocacy and nation building as they transition into leadership roles. Creating fun and engaging models of participation and leveraging social media is critical to involving youth in supporting the attainment of the SDGs in Nigeria.

**Title: Social, Legal and Health-related Engagements and Needs of University of Lagos Neighbouring Communities.**

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### **Background and Objectives:**

Sustainable development goals (SGDs) 3, 10 and 16 address health, social and legal concerns of societies. Universities, beyond their academic pursuits, are deeply integrated into the fabric of their surrounding communities and have a key role in community development and social transformation. The University of Lagos (UNILAG), situated amidst densely populated urban areas in Lagos State, Nigeria, is no exception. While the university offers educational and research opportunities, the surrounding communities face challenges such as poverty, inadequate infrastructure, and limited access to healthcare. Rooted in a commitment to understanding and addressing the development-related needs of these communities, the study aimed to assess the perception of UNILAG and the social, legal, and health-related participation and needs of its neighboring communities.

**Methods:** A cross-sectional study was conducted, utilizing a semi-structured, interviewer-administered questionnaire, among 503 adult residents of Akoka, Bariga, and Makoko, three UNILAG neighboring communities from 17th February to 15th March, 2022. Respondents were selected using a multi-stage sampling technique and trained researcher assistants obtained information on socio-demographic characteristics, perceptions of UNILAG, patterns of community engagement, legal concerns, and health-related behaviour and priorities. Open-ended responses were thematically coded and all data were analyzed descriptively using Stata 15.1.

**Results:** The mean age of respondents was 42.1(SD:12.5). Most were female (5%), had completed secondary education (40.4%), were unskilled workers (67.6%) and were married (81.5%). About 40% of participants had a relationship with UNILAG, mostly through acquaintances (38.9%), schooling (32%) or business (24.1%). Majority of the respondents (77.9%) did not report any benefits provided by UNILAG to their community. Most of them would like UNILAG to provide academic scholarships (49.9%), clean drinking water (45.7%), and skill acquisition programmes (39%). They believed the community could add value to UNILAG by providing a conducive atmosphere (24.6%), enrolling their children (18.7%) and providing students accommodation (12.5%). In their social participation, 87.9% were registered voters while only 38.4% belonged to any association. The most common social needs were security (39.6%) and employment (24.1%). Regarding legal concerns, 88.7% said human rights are not respected in their society. Common issues disrupting law and order were cultism (76.1%) and

armed robbery (60.4%). Community conflicts were commonly resolved by police (38.8%) and traditional rulers (25.4%). Most (70%) had never sought legal aid, 52.7% would not accept sponsored legal services, and 97.2% would like UNILAG to provide legal aid awareness. The priority health-related needs of the community were identified as free malaria prevention/treatment (97.6%), good water supply (78.7%), and a good hospital (57.1%). Most respondents receive health care in government hospitals (82.9%) and pay out-of-pocket (93%). Cost (77.9%), distance 61.4%) and long waiting time (60.4%) were the most common barriers to accessing health care.

**Conclusions:** The neighboring communities to UNILAG have several social, legal and health-related needs that impede the attainment of SDGs. This presents an opportunity for UNILAG to provide leadership and support to community development through participatory approaches and by leveraging its institutional resources and expertise to achieve sustainable progress and enhanced well-being in the communities.

**Title: The Effect of Simulation and Debriefing Using Advocacy Inquiry as a Conversational Strategy on Gender, Hierarchy and Interprofessional Team Dynamics among Medical and Nursing Students in Uganda**

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**Background:** Interprofessional healthcare teams are designed to improve patient outcomes and cultivate learning-oriented teams. In reality, diverse teams often form hierarchies based on seniority, gender, and profession; these power dynamics restrict a member's ability to challenge or ask for help from team heads. Consequently, non-collaborative teams threaten patient safety, hinder team growth, foster hostile working environments, and increase care provider turnover. Communication frameworks like Advocacy Inquiry (AI) address barriers to effective communication within teams with promising outcomes in previous studies. However, AI training has neither been tested among medical and nursing student participants nor in low- middle income countries.

**Objectives:** This study determines whether AI simulation-based learning programs for Ugandan/medical and nursing students equips participants with (a) communication strategies to navigate long standing workplace hierarchies between healthcare professionals, (b) increases gender sensitization in and outside a healthcare context, and (c) clinical skills and knowledge.

**Methods:** The study recruited 50 participants to attend the study at a low-fidelity simulation program at the Mbarara University of Science and Technology. Students attended facilitator-led AI and GE training before their first simulation. Afterwards, students completed three different clinical simulations twice. Each scenario required students to navigate

interprofessional power differentials, hierarchical communication, or gender sensitivity proficiency in patient-physician interactions. Facilitator-led debriefs occurred after scenarios, and focused on relevant non-technical themes. Group performance after the first and second exposure of a scenario was compared. Students completed the Interprofessional Socialization and Valuing Scale tool (ISVS), pre and post-training multiple choice questionnaires, and Kirkpatrick Training Evaluation form. Facilitators completed clinical checklists in real time, while they completed the Gender Analysis Tool and the Nurse-Physician Collaboration Tool by watching scenario recordings.

**Results:** Results show a significant 16.9% increase in mean gender knowledge scores among males ( $p = 0.0005$ ). The 13.9% increase was also significant among females ( $p = 0.0002$ ). Mean performance in hierarchy and power dynamic skill simulations significantly increased by 9.2% ( $p = 0.04$ ) after training. The mean student performance score in gender equity ( $p < 0.001$ ) and IPC simulations ( $p < 0.001$ ) increased significantly by 28% and 12.4%, respectively. **Conclusions:** This study supports the use of simulation training to improve IPC, hierarchical communication, and gender sensitization among medical and nursing students.

**Key words:** Advocacy Inquiry, Hierarchical Communication, Gender Sensitization, Medical Simulation

## **Title: Stakeholder views on continuing professional development for doctors working in public primary care facilities in central Uganda**

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### **Introduction**

The primary care workforce in the public sector of Uganda is under the district health system (DHS). The doctors in this workforce provide leadership and frontline promotive, preventive, curative, rehabilitative and palliative care. Their numbers are still low and therefore need effective support through continuing professional development (CPD) to execute their duties. Part of the support is influenced by stakeholders whose views on CPD in the DHS are important.

### **Objective**

To explore the stakeholders' views on CPD for doctors working in the DHS in central Uganda.

## **Methods**

A qualitative exploratory study was done, data was collected using an interview guide through individual in-depth interviews among ten purposively selected CPD stakeholders influencing different aspects of CPD activities of doctors working in public general hospitals and health center IVs. The interviews were recorded and transcribed verbatim and manually analysed using deductive thematic content analysis.

## **Results**

The current CPD practices included; trainings, mentorship and apprenticeship, support supervision and quality improvement projects. The facilitators were; internet services, grants, health facility managers, facility-based CPD providers and regional CPD guidelines. The main benefits were; motivation, knowledge, teamwork and renewal of practicing licenses. Key challenges were; workload, allowances, access, documentation, mindset, quality of CPD, structure of public health system and sustainability. The following were suggestions; training needs analysis, collaboration, monitoring, e-CPD platforms, CPD resource centers and individual CPD responsibility.

## **Conclusions/Recommendations**

The stakeholders' views from this study indicate their awareness and interest in CPD for the doctors in the DHS. The findings may inform proposals of CPD adjustments in Uganda's DHS.