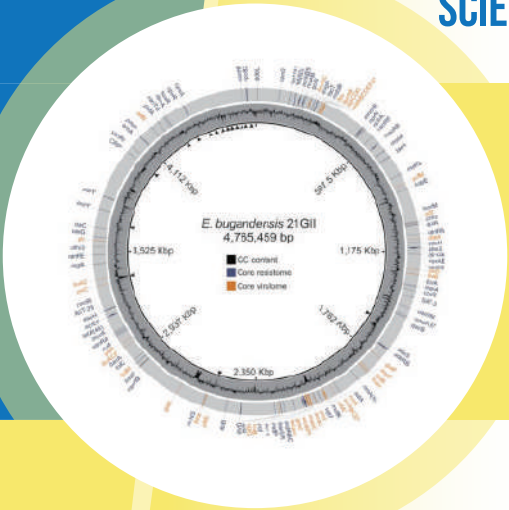
20 ANNIVERSARY
Taking CUHAS to the Next Level

CATHOLIC UNIVERSITY OF HEALTH AND ALLIED SCIENCES

CUHAS - BUGANDO

THE 13TH GRADUATION SCIENTIFIC CONFERENCE



Abstract Book
8th - 9th November 2023
Malaika Beach Resort
Mwanza, Tanzania

Twenty years of CUHAS Collaborative Research for the Transformation of Health Services: Success, Challenges and Prospects

The 13th Graduation Scientific Conference

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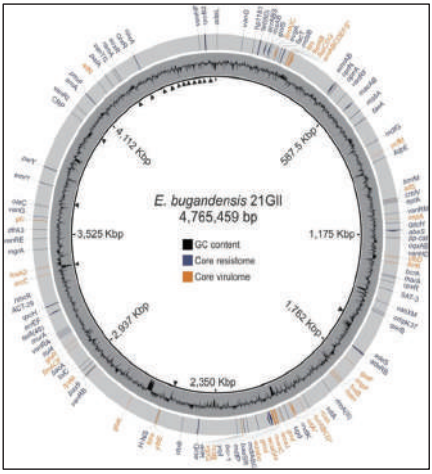

Abstract Book

8th -9th November 2023, Malaika Beach Resort, Mwanza, Tanzania

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WELCOME NOTE

Dear Scientific Conference Attendees,

I am glad to welcome you to the 13th CUHAS Scientific Conference, 2023. The conference theme is ***"Twenty Years of CUHAS Collaborative Research for the Transformation of Health Services: Successes, Challenges and Prospects"***. The theme will be addressed through a unique and innovative lens, highlighting the achievements of twenty years of collaborative research. It is high time that we consider this scientific event in line with the 20th CUHAS anniversary, to help us defining where we came from, where we are and where we are heading. This will pave the way to further the research agenda to accommodate the advances in science and for the future generations. A glance through the abstract book and the list of presentations reveals the diversity of topics and approaches.

This Scientific Conference will allow delegates from different universities and organizations within and outside the country to share their thoughts, knowledge and opinions to enhance our research vision. We expect to welcome 450 participants and over 130 scientific research abstracts to be scrutinized. The conference theme is subdivided into 6 sub-themes to cover different angles of human health research: **Health system research and healthcare delivery; innovation for advancing services in local settings, Infectious diseases and antimicrobial resistance, Innovative technologies in support of medical education, non-communicable diseases and their prevention, Planetary health: healthier people and communities on a healthier planet and Schistosomiasis.**

Research collaboration with local and international organizations/institutions highlights the possibilities to address different aspects of health in low- and middle-income countries and advance the frontiers of knowledge. The research findings to be presented lay the foundation for future research to obtain answers to emerging and re-emerging health problems. We call for concerted efforts from the regional and international scientific community to join hands for the betterment of the health of the people served and concerned by these works.

It is my hope that this scientific conference will also help to identify challenges towards pragmatic solutions. On behalf of the Bugando Medical Centre and the Catholic University of Health and Allied Sciences, I would like to thank the organizing committee for their tireless efforts to make this conference a success. I wish you all a fruitful conference and deliberations.

Welcome back next year,

Yours sincerely,

Dr. Fabian A. Massaga
Director General BMC

FOREWORD

The opening of the 13th Scientific Graduation Conference 2023 today, coincides with the 16th Graduation Ceremony and the 20th Anniversary of the Catholic University of Health and Allied Sciences. I would like to take this opportunity to welcome you all to this Scientific Conference and all other accompanying events of the week as we reflect on our journey to this day.

This two-day conference has been jointly organized by the Catholic University of Health and Allied Sciences (CUHAS) and the Bugando Medical Centre (BMC), with the support of our partners, the Weill Cornell Medical College, the Julius-Maximilians-Universität Würzburg (JMU), and the University of Calgary. The theme is "***Twenty Years of CUHAS Collaborative Research for the Transformation of Health Services: Successes, Challenges and Prospects***".

The subthemes cover areas of Health System Research and Healthcare Delivery; Innovation for Advancing Services in Local Settings, Infectious Diseases and Antimicrobial Resistance, Innovative Technologies in Support of Medical Education, Non-Communicable Diseases and their Prevention, Planetary Health: Healthier People and Communities on A Healthier Planet and Schistosomiasis. It is our expectation that the scientific findings to be presented from over 130 abstracts will stimulate and generate an insightful debate on the most critical issues of human health transformation.

With an expected participation of about 450 scientists from various nationalities, this event provides a great opportunity to evaluate our experience of 20 years collaborative research and its translation to the transformation of health services while responding to societal needs. While narrating the successes and challenges over the 20-year period, it is important to map out the future aiming at repositioning ourselves and our collaborators for better and relevant outcomes. It is important to strategize on the national and global research agenda.

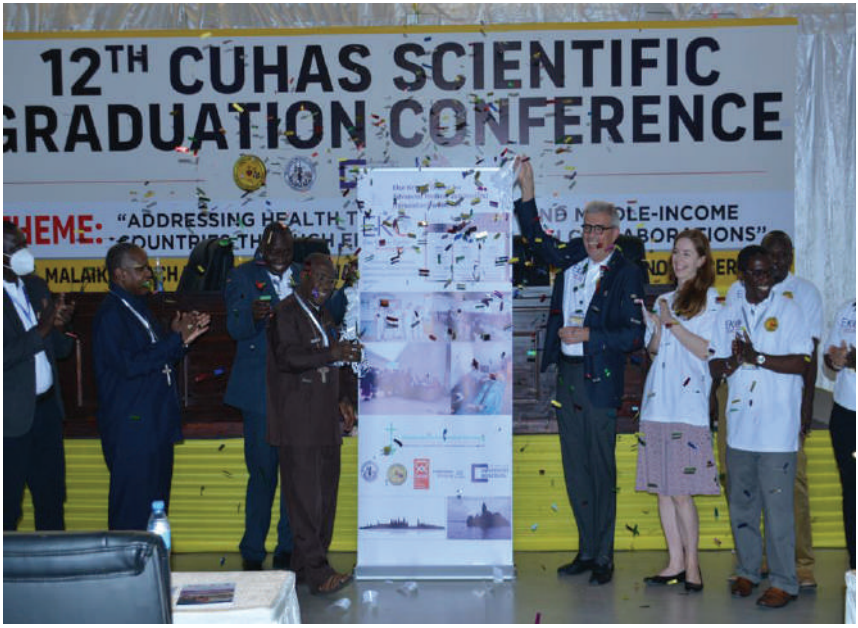
Let me take this opportunity to thank all those who have participated in one way or another in making this event a reality and success. I thank the Sponsors, the Organizing Committee, Keynote Speakers, Presenters, Participants, and Service Providers for a job well done.

I encourage our visitors to socialize while in Mwanza and fully enjoy the beauty of the Rock City. May your stay be memorable, and your journey back home be as safe as possible.

The closing of the 13th CUHAS Graduation Scientific Conference marks the beginning of the preparations for the 14th CUHAS Graduation Scientific Conference in 2024.

Prof. Paschalis Rugarabamu
Vice Chancellor
The Catholic University of Health and Allied Science

TABLE OF CONTENTS



CUHSD: HEALTH SYSTEM RESEARCH AND HEALTH-CARE DELIVERY; INNOVATION FOR ADVANCING SERVICES IN LOCAL SETTINGS

CU01HSD: Twenty Years of CUHAS Collaborative Research for the transformation of Health Services: Successes, Challenges and Prospects

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Background: Research in an institution of higher learning serves a number of purposes that relate to Training and Human Resource Development but most importantly to Services Provision to Society. Research is one of the core functions of CUHAS. This is embodied within the mission of the institution in which the University pledges to be "a centre of excellence providing high quality education, research and services in the field of health sciences". One of the CUHAS mission includes to "Search, discover and communicate the truth to advance the frontiers of knowledge".

Methods: This scoping review of 20 years of CUHAS collaboration research for the transformation of health services by dissecting the successes, challenges and prospects. A review of published articles, guidelines, standard operating procedures and protocols was carried out to obtain the information.

Results: CUHAS enrolment status increased from 10 students in 2003 to 3500 in 2022. Progressive expansion of collaborative research networks increased from only one, in 2003, the Weill Cornel Medical College, to more than 20 in 2023, triangulating both North-South and South-South collaborations. The publications in peer-reviewed journals per annum increased from 44 in 2011 to 144 in 2022, predominated by articles in the fields of infectious diseases and antimicrobial resistance (36.6%), non-communicable diseases (26.8%), and health systems and public health research (25.4%), with the majority in reputable international and regional journals. In 2023, CUHAS came 5th on the Webometrics Ranking of Universities among Tanzania universities, with seven of her scientists/researchers featuring in the top 100 researchers in Tanzania. CUHAS has contributed significantly in the areas of antimicrobial resistance, vaccine-preventable diseases, schistosomiasis, cancer, stroke, and maternal and child health at national, regional and global levels. Limited research at primary health care facilities and rural settings, and limited research funding continue to challenge a full exploration of our research potentials.

Conclusion: The two decades of CUHAS collaborative research has been appealing, and remarkable progress is evident to take this institution to the next level. Fostering knowledge translation, awareness and advocacy is needed to inform evidence-based guidelines and policies. A need to explore local funding mechanisms, expand the links with diversified partners, and to establish a centre of excellence in core research clusters is reiterated.

Keywords: *CUHAS; Collaboration Research; Health Services*

CU02HSD: Factors Affecting Improved Community Health Fund Insurance Enrolments of Community Health Fund Members in Mbarali District

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Background: Healthcare financing is a global concern as universal health coverage approaches. Community Based Health Insurance (CBHI) is a holistic solution to informal sector healthcare financing difficulties, funded by voluntary contributions. CBHI's success is attributed to state commitment to expanding community responsibilities in healthcare administration and co-financing (White, 2015), as seen in the Tanzania's Community Health Fund (Buyene, 2016). The investigation explored the socio-cultural practices' impact on CHF enrolment, focusing on the human being as a social and biological creature.

Methods: The study included 105 respondents, with 99 being members from selected wards with 6597 households, 6 being main informants who were classified as follows: 1 Municipal Medical Officer of Health (MMOH), 3 health-care professionals from the study areas' health-care facilities (2 male physicians and 1 female nurse), and 2 community members (1 male and 1 female). The sample for the in-depth interview and focus group discussion was purposefully chosen from the municipality, population, and survey respondents.

Results: A considerable majority of the respondents, almost 80%, had sufficient and appropriate knowledge on the subject under investigation. In a certain social environment, socio-cultural practices are essential parts of human life. Community members are familiar with the subject but remain uncertain about its usefulness. Health institutions' in-charges are the primary source of information.

Conclusion: A well-managed Community Health Fund (CHF) is a useful instrument for poor and uninsured members of the community. CHF individual experience, the mushrooming of therapy options, knowledge, attitude, and practice all have an impact on CHF absorption. The best practices which attract persons to join CHF should, however, involve providing appropriate and reliable information, and broadly improving service delivery taking modern societal dynamics into account.

Keywords: *Health Insurance; Community Health Fund; Improved Community Health Fund*

CU03HSD: Insight of health care cost among patients with clinical diagnosis of urinary tract infections and antimicrobial resistance pathogens: a threat to patients' income

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Background: Antimicrobial resistance (AMR) is now a global pandemic that threatens the economic future. This is being pronounced with the disastrous financial consequences associated with extremely high health care costs especially in resource limited settings. UTI is the second most common infection globally accounting for over 8.1 million visits to health care facility annually. Here, we document data on the health care cost (both direct and indirect) for management of UTI at different levels of health facilities in Tanzania.

Methods: A cross-sectional hospital-based study was conducted between June 2021 and March 2022 data were collected from adult inpatients with UTI-like symptoms from two health facility levels using an interviewer administered questionnaire and were analyzed thematically guided Microsoft Excel.

Results: A total of 66 patients with UTI like symptoms were recruited with the majority being female 48(77.4%), on age range of 26 to 35 years (22.6%). The average health care cost was higher among patients with UTI due to resistant pathogens than those with UTI due to susceptible pathogens 113.69 vs. 74.8 USD. The average costs of a client with AMR pathogens incurred for buying medicines was higher (7.22 USD) than that of a client who had a UTI due to sensitive pathogens (4.47 USD) and pregnant (2.03 USD). On average, a client with UTI and other diseases spent about 40.65 USD more compared to a client who had UTI only, i.e., 114.38 USD vs 74.8 USD respectively.

Conclusion: The average cost for management of UTI in resource limited settings like Tanzania is higher among patients with AMR pathogens than those with sensitive pathogens. The cost is observed to be much higher among patients with UTI and other conditions and visiting higher level health facilities. To reduce the economic burden of AMR to patients and influence good health care practices in the community by visiting health care facility as first site whenever the community is unwell the government should consider health insurance for all.

Keywords: *Antimicrobial resistance; Urinary tract infections; Costs; Tanzania*

CU04HSD: Uptake, Experience and Factors Associated with HIV Self-Testing among Female Bar Workers in Ilemela District, Mwanza Region Northwestern Tanzania

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Background: Tanzania has a low level of HIV testing, particularly among key and vulnerable populations, including female bar workers. Despite existing efforts, the country struggles to achieve the UNAIDS target of 95% HIV awareness by 2030. HIV self-testing has been recommended by the WHO to increase access to testing and confidentiality, among other benefits. However, there is limited knowledge of the use and associated factors related to HIV self-testing among key and vulnerable populations.

Methods: This cross-sectional study was conducted in bars, hotels, lounges and pubs in Ilemela District, Mwanza region, Northwestern Tanzania. The study used a simple random sampling technique to recruit 384 female bar workers from bars, hotels, lounges and pubs located in Ilemela district. Data was gathered using a structured questionnaire and analysed using SPSS® version 25.0. The chi-square test was performed to demonstrate the association between categorical variables, and demographic data was summarized as frequency or proportions. In addition, regression analysis was used to examine the factors associated with the use of HIV self-testing among female bar workers.

Results: The magnitude of HIV self-testing uptake among female bar workers was 26.8%. Increasing age > 25 years [aOR 1.24 (95% CI 1.01-1.52)], history of HIV testing [(aOR 7.89 (95% CI: 4.12-15.10)], education status being secondary school and above [(aOR 2.15 (95% CI 1.32-3.50)], knowledge of where to get HIV self-testing kits [(aOR 3.42 (95% CI 2.10- 5.57), regular use of social media [(aOR 2.28 (95% CI 1.42-3.67) were significantly associated factors.

Conclusion: HIV self-testing uptake among female bar workers falls below the national 95% target aligned with UNAIDS 95-95-95 goals. This study identified key factors associated with increased HIV self-testing rates, offering actionable insights for scaling up HIV self-testing programs within this population.

Keywords: *HIV self-testing; Female bar workers; Uptake*

CU05HSD: Evaluation of Electronic Logistic Management Information System Competence among Public Primary Health Care Facility Managers in Singida District Council, Central Tanzania: Implications for Medicine Supply Chain Performance

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Background: The effective management of medicine supply chain is crucial for the performance of the health-care system. In Tanzania, Electronic Logistics Management Information System (e-LMIS) was implemented in 2013 to improve medicine supply management. However, the competence of health care facility managers in using the system remains a challenge. This study aims to assess the level of competence, identify factors influencing competence in utilizing e-LMIS among health care facility managers in Singida district.

Methods: The study was conducted in Singida District Council, Central Tanzania. A mixed-method approach was employed, combining quantitative and qualitative data collection methods. Quantitative data were gathered using a questionnaire, while qualitative data were obtained through key informant interviews. Descriptive statistics, including means, standard deviations, frequencies, percentages, and proportions, were used to analyze quantitative data using SPSS 25. Associations between variables were explored using chi-square tests or logistic regression. Qualitative data were analyzed through content analysis using NVivo 11 software.

Results: The survey revealed that 62.3% of participants were categorized as "Competent" in e-LMIS utilization, while 32.1% were "Somewhat Competent," and 2.8% were "Very Competent." Factors influencing competence included experience in e-LMIS usage and formal training. In-depth interviews highlighted diverse competence levels, daily use of e-LMIS, and specific applications for tasks such as procurement monitoring and order placement. Challenges included inadequate training, difficulties in estimating, staff shortages, and repetitive data entry. Competence positively impacted medicine supply chain management by ensuring accurate orders, preventing stockouts, and enhancing decision-making.

Conclusion: Competence positively affects various aspects of the medicine supply chain, including timely orders, accurate deliveries, and informed decision-making. However, challenges such as inadequate training and system complexities hinder competence. We recommend investing in training and education, to strengthen supervision and oversight and further research to be conducted to compare different settings with and without training on e-LMIS.

Keywords: *e-LMIS; Healthcare facility managers; Competence; Medicine supply chain; System enhancement*

CU06HSD: Assessment of satisfaction with national health insurance packages among the informal sector clients in Mwanza city council: A case of public and private health facilities

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Background: Tanzania National Health Insurance Fund (NHIF) introduced various packages to increase enrolment from the informal sector, but there is a lack of studies assessing the satisfaction with these packages by the informal sector as they access health care in public and private facilities. This study assessed the satisfaction levels and the factors influencing satisfaction with NHIF packages utilized by informal insured clients at the selected accredited public and private health facilities in Mwanza City Council, Tanzania.

Methods: A hospital-based descriptive cross-sectional study was conducted in 9 randomly selected public and private health facilities. 563 adult clients from the informal sector, aged above 18 years, were interviewed as they entered and exited the selected health facilities using a structured questionnaire. Data analysis was performed using the SPSS version 26.

Results: The study's findings reveal a prevailing trend of dissatisfaction (80.1%) among beneficiaries of NHIF packages, both in public and private healthcare facilities. Factors such as facility level, ownership, gender, education, modern layout and environment for NHIF packages clients, Availability of drugs, medical supplies, and all diagnostic services ordered under the NHIF package, and provider's response were associated with satisfaction. Notably, despite their discontent, over half of the participants expressed a willingness to repurchase (54.5%) and recommend NHIF packages (55.6%), presenting an opportunity for the government to expand enrolment through policy adjustments, advocacy, and health insurance education.

Conclusion: This study adds to the existing knowledge on patient satisfaction within Tanzania's NHIF context, emphasizing the need for ongoing, in-depth research to monitor satisfaction changes and assess the impact of NHIF reforms. Understanding patient perspectives is crucial for achieving high-quality, patient-centered healthcare services in the country.

Keywords: *NHIF packages; Satisfaction; Insurance; Public and Private Health Facilities*

CU07HSD: Practicability and Functioning of Hospital Ethics Committees: An Overview from Lake-zone, Mwanza-Tanzania

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Background: Hospital ethics committees (HECs) are a vital component within healthcare facilities, aiding clinicians in addressing ethical predicaments that arise during the provision of active medical care. The functions and challenges of research ethics committees (RECs) are well-documented, encompassing the protection of human subjects participating in research and the facilitation of ethically sound research. Conversely, the functions of hospital ethics committees, such as the examining, deliberation, analysis and reporting of ethical issues that arise in patient care, are comparatively obscure, leading to uncertainty regarding the existence of formally established HECs. This cross-sectional study investigated whether selected hospitals had formal HECs, their functioning and the types of ethical dilemmas encountered in selected hospitals located in Mwanza, Tanzania.

Methods: The study involved 19 key members of hospital ethics committee, key informants of the medical ethics field at Bugando Medical Centre, Butimba district hospital, Sekou-Toure Regional Referral Hospital, Butimba district hospital, Makongoro Health Centre and Kirumba dispensary as well as directors, doctors, nurses and members of the research ethics committee. From May to July 2023, in-depth interviews were conducted. Data transcribed verbatim, translated, coded, categorized and content-analyzed by using NVIvo 14 Software.

Results: The study revealed that hospital ethics committees are not formally established in the studied areas, despite there being a consensus among healthcare providers of their existence. Moreover, the findings shed light on the frequent ethical dilemmas and challenges faced in the process of delivering healthcare services including abandonment and denial of medical procedures. This study also highlighted that hospital ethics committees operating informally did not fully utilize their potential in enhancing the quality of healthcare.

Conclusion: The establishment of formal hospital ethics committees may present certain challenges and factors to consider. However, it is crucial to recognize the significant role these committees play in fostering ethical healthcare practices. Moreover, the demand for such committees, particularly in intensive care units, is urgent and undeniable.

Keywords: *Hospital Ethics Committee; Ethical dilemma; Tanzania*

CU08HSD: Dignity Preservation Among Hospitalized Patient: A Case study of Bugando Medical Centre, Northwestern Tanzania

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Background: Dignity preservation is regularly emphasized as one of the basic patient rights in both national and international codes of ethics in medical practices. Therefore, it was important to explore this concept based on the patient's experience to maintain and respect their dignity, improve the quality of health services, and increase patient satisfaction in health care. The study aimed to explore the experience of dignity preservation among hospitalized patients during their hospital stay.

Methods: This was a qualitative descriptive study in which 20 hospitalized patients were recruited. Purposive sampling was used to select study participants from wards of different departments of Bugando Medical Centre (BMC). Patients were interviewed about the experience related to the preservation of their dignity during their hospital stay. Data were analyzed using content analysis.

Results: Four major themes emerged from the analysis of the data obtained from the interview. Patient-provider relationship, shared decision-making, inadequate privacy and confidentiality, and affordability of treatment cost.

Conclusion: From the patient's experience, human dignity needs to be preserved and maintained in hospitals. Respect for their privacy, confidentiality, and involvement in decision-making in the treatment plan should be taken into consideration.

Keywords: *Dignity; Preservation; Hospitalized Patient*

CU09HSD: Using Geographic Information Systems (GIS) to assess Diffuse Response Intervals for Community Bystander-Driven (Tier-1) Emergency Medical Services integrated with Emergency Medical Dispatch in Mwanza, Tanzania

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Background: The global injury burden disproportionately affects low- and middle-income countries (LMICs), which lack robust emergency medical services (EMS). Where formal, professionally staffed, ambulance-driven (Tier-2) EMS is not financially feasible, the World Health Organization recommends community bystander-driven (Tier-1) EMS as the first step toward formal EMS. On-scene response intervals for Tier-2 EMS systems are known to vary by density of centralized responder dispatch sites per population. Whereas Tier-1 EMS system community bystander responders are mobile, diffuse, and non-centrally dispatched. We used GIS to analyse prospectively collected data from a Tier-1 dispatch-enabled EMS program in Tanzania to assess response intervals.

Methods: In 2015, the Tanzania Rural Health Movement launched a Tier-1 lay first responder program integrated with Beacon, a mobile EMD platform for responder coordination in Mwanza, Tanzania. Chief complaint characteristics, diurnal emergency variation, and response intervals (for emergencies with ≥67% data compliance) were prospectively recorded for descriptive analysis. Geographic information systems (GIS) software (ArcGIS Pro 2.8) used recorded latitude/longitude for compliant entries with available data for analysis of response interval and distance from Mwanza, plotted on a logarithmic distribution for correlation.

Results: 1,397 data entries were catalogued (2017-2022). 192 simulated test incidents and 701 data entries lacking ≥67% data compliance were filtered, leaving 504 entries for analysis. Of chief complaints, 77.6% were road traffic injury-related, 5.23% were fall-related, 5.12% were burn-related, and 11.98% were other. Median on-scene response interval was 1 minute 47 seconds (mean=7 min,50 sec) (n=497). 49% of emergencies occur between Friday-Sunday, with 66.3% between 6am-6pm. There is no correlation between response interval and distance from Mwanza (r=0.0053957) (n=355).

Conclusion: A community bystander-drivenTier-1 EMS system with integrated mobile EMD demonstrates on-scene response intervals that are irrespective of distance, suggesting response intervals are not geographically dependent, which may be due to inherent Tier-1 responder diffusion and EMD coordination.

Keywords: *EMS; First Responder; RTA*

CU10HSD: The Influence of the IMPACT Approach on Antenatal Care Clinic health commodity availability and Healthcare workers' Knowledge, Practice, and Perceptions: A Case Study of Itilima District Council

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Background: Antenatal care services have been a means for reducing maternal and unborn child morbidity and mortality. However, health commodities availability at antenatal care clinics has been below the 80% standard set by the World Health Organization and Tanzania Ministry of Health guidelines. The Information Mobilized for Performance Analysis and Continuous Transformation (IMPACT) approach model was introduced to promote the generation and utilization of quality data for evidence-based decision-making and the continuous improvement of health commodities availability at antenatal care clinics. This work aimed at examining the influence of the IMPACT Approach on Antenatal Care Clinic Health Commodity availability and Healthcare Workers' Knowledge, Practice, and Perceptions at Itilima district council.

Methods: Mixed methods were employed in a Quasi-experimental and Case study design. The data were collected by a self-administered questionnaire, complemented by in-depth interviews for the qualitative component, documents' review and observation. Data were analysed using SPSS version 25, and Nvivo version 12 for qualitative data. Ethical clearance was sought from the BMC/CUHAS Joint Ethics & Review Committee and permission from respective local authorities was acquired. Informed consent from each participant was sought.

Results: The study revealed that 59 participants (64.8%) had adequate knowledge, 76 participants (84.6%) had good practice and 83 participants (91.2) had a positive perception on IMPACT approach. The mean performance for ANC health commodities indicators showed significant improvement from year 1 (45.3%) to year 4 (90.4%) ($p<0.0001$). Most of the health care workers were aware of the IMPACT approach, commending on its influence to enhance availability of health care commodities.

Conclusion: Healthcare workers viewed the IMPACT approach positively, despite a need to improve their capacity in distributing guidelines and data analysis skills. Council Health Management Teams (CHMT) should oversee revenue collection for health commodity procurement. Addressing healthcare worker shortages and harmonizing professional roles in facilities are crucial. These enhancements can make IMPACT a valuable tool for managing health commodities, supporting progress toward Sustainable Development Goal 3 in healthcare.

Keywords: *IMPACT Approach; Health Commodities; Antenatal Care; Tanzania*

CU11HSD: Quality of Life and Complications among Patients Living with Indwelling Urinary Catheters Attending Bugando Medical Centre Northwestern Tanzania

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Background: Indwelling urinary catheterization (IUC) is common for managing patients with lower urinary tract problems globally and patients in need are discharged home with it. Urinary tract infections (UTI) are the commonest complications of IUC and have been found to affect the quality of life (QoL) of these patients. This study provides information on prevalence and indications for long-term IUC, catheter-associated urinary tract infections (CA-UTI) and associated factors, QoL and lived experiences among patients with long-term IUC in Northwestern Tanzania.

Methods: The study utilized mixed method design involving inpatients and outpatients with IUC aged 18+ years attending urology clinics at BMC between December 2016 and September 2017. A total number 202 outpatients who had long-term IUC (>14 days) and 238 inpatients who had short-term IUC (≤14) days were conveniently non-repetitively enrolled. Socio-demographic, clinical and laboratory data were collected using standardized data collection tools. Descriptive analysis was done using STATA version 11 and phenomenological qualitative research was conducted to investigate the lived experiences with a long-term IUC at home.

Results: Prevalence of living with IUC at home was 9.6% (202/2112). The median age of 202 patients was 69 [IQR 61–77] years with 195(96.5%) being males. The commonest indication was benign prostatic hypertrophy, 129 (63.9%). Endless appointments were the commonest reason for the long stay with an IUC for ≥ 6 weeks at home. CA-UTI was the leading complication and was significantly higher among outpatients than inpatients (82.2% vs 35.3%, $p < 0.001$). Poor Quality of life (QoL) in all the domains was observed among outpatients with long-term IUC. On lived experiences only two main themes were evident: "*Adjustments to positive living with a catheter" and "The home environment influences negative or positive living*".

Conclusion: To the best of our knowledge, this is the first study in Sub-Saharan Africa (SSA) to document the prevalence of patients living with IUCs, QoL and living experience among patients with IUC. There is a need to develop guidelines/protocols to ensure quality nursing care of inpatients and outpatients with IUC. Furthermore, there is a need for further studies to establish the effectiveness of living experience adjustments on QoL in Tanzania and SSA among patients with IUC.

Keywords: *Indwelling urinary catheter; UTI; Quality of life*

CUIT: INNOVATIVE TECHNOLOGIES IN SUPPORT OF MEDICAL EDUCATION

CU01IT: Implementation of TAMSA research mentorship program among undergraduate medical and pharmacy students at the Catholic University of Health and Allied Sciences

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Background: Research is critical to promote better healthcare in Tanzania and Africa. TAMSA research scholar program was established in 2021 for senior medical and pharmacy students who are interested in research, so as to equip them with skills and practical exposure in areas like proposal writing, generating research question, data analysis, results dissemination and publication. We evaluated the 2-year implementation and the impact of the research scholars' program.

Methods: Fourth year medical students and third year pharmacy students applied and were competitively selected to be part of the scholar cohort. The qualified scholars were paired with research mentors from CUHAS and other research institutions, to develop and implement a research proposal. Scholars completed lectures and small group discussions on including research design, analysis and dissemination. Pre- and post-implementation surveys were used to evaluate knowledge change. Data on scientific productivity including conference presentations, grants and publications was collected.

Results: The program's initial pilot cohort (2021-2022) comprised of 10 medical students and later expanded to include pharmacy students. The 2nd cohort (2022-2023) comprised 8 medical students and 3 pharmacy students. 90% of scholars stated the lectures were helpful, 70% of scholars recommended additional lectures on data analysis, all scholars scored > 80% in knowledge post-test. Research productivity was high, 70% of scholars presented their research findings in local and international conferences, 5 scholars submitted their manuscripts in journals for publication and 2 grant proposals were written and accepted for funding based on their research.

Conclusion: Research mentorship is crucial in building a supply of physician-scientists in Tanzania. This program was well accepted and received by students at CUHAS, yielding a high impact. However, we require sustainable funds and more volunteer mentors in the program so as improve the program's recruitment capacity.

Keywords: *Research mentorship; Undergraduate health students; Physician-scientist*

CU02IT: Perception of Learning Environment among Medical Imaging and Radiotherapy Students at the Catholic University of Health and Allied Sciences in Tanzania

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Background: The learning environment of a medical scholar has a significant impact on achievements and learning outcomes. Despite the validation and accreditation of the programme by the Tanzania Commission for Universities (TCU), the learning environment is not only perceived by the documented curriculum but also by the interactions within the campus, and relations between students and lecturers. This study aimed at evaluating the perception of the learning environment among Bachelor of Science in Medical Imaging and Radiotherapy (BMIR) programme students at the Catholic University of Health and Allied Sciences (CUHAS).

Methods: A cross-sectional study was conducted where all students taking BMIR programme at CUHAS were included, DREEM (Dundee Ready Educational Environment Measure) questionnaire was provided to all participants. Data analysis was done through Microsoft Excel and SPSS v20 using descriptive statistics. The mean was calculated for all the items in each year level and across the year levels.

Results: A total of 62 students (96.9%) of BMIR responded to the questionnaire. The overall total score for the three classes was 131.7/200 (65.9%) indicating that the majority had a positive perception towards the learning environment. The lowest score was seen among third-year students.

Conclusion: Educational environment perception by the students is a key factor in determining the nature of their learning experience. This study illustrated the challenge of maintaining an equitable and positive learning environment for all classes in the programme and underlines the need for careful ongoing evaluation of the learning environment and review of the curriculum.

Keywords: *Perception; Education; Students; Lecturer*

CU03IT: Effectiveness of Red-Light Vein Visualization Device in Facilitating Intravenous Cannulation in Children with Dark Skin

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Background: Globally, up to 80% of children attending health facilities require cannula insertion into a vein to administer medications, blood products, or deliver nutrients. However, obtaining intravenous access in sick children with collapsed or barely visible veins requires complex skill, and can be time-consuming; with difficult venous access requiring as much as nine attempts and a longer time to succeed. It is even more difficult in children with dark skin due to poor contrast between veins and the skin. Multiple failed attempts to achieve venous access are costly and associated with an increased risk to complications. The study aimed at evaluating the effectiveness of using a red-light vascular imaging device to facilitate intravenous cannulation in children with dark skin in Uganda.

Methods: 156 children aged 1-9 years were randomly assigned to either the intervention group n=78 or the control group n=78 using block randomization with concealed allocations. Data was collected on the time taken to successfully insert the cannula, the number of attempts, the level of discomfort experienced by the children, and any adverse events recorded.

Results: Intention to treat analysis was done, and the median time to successful cannulation was significantly shorter in the intervention group 89 seconds than in the control group 149 seconds (HR=2.01, p-value<0.001). Other factors associated with successful cannulation were age (HR=1.07, p-value of <0.001), and the health practitioner (HR=0.87, p-value of 0.141). There was also interaction between the method of cannulation and the health practitioner (HR=0.80, p-value of <0.001). No adverse events related to using the A-Lite vein locator were reported.

Conclusion: Suitable veins for cannulation were more easily visible with the A-Lite vein locator, reducing the number of failed attempts per patient, procedure time, and complication rates.

Keywords: *Vein locator; Children; Red-light*

CUID: INFECTIOUS DISEASES AND ANTIMICROBIAL RESISTANCE

CU01ID: Trends in Case Detection Rate for Leprosy and Factors Associated with Disability among Registered Patients in Zanzibar, 2018 to 2021

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Background: Leprosy is still the disease of the public health concern. Globally, 2 to 3 million people are thought to be affected by leprosy's disease-related disabilities. Regarding leprosy status in Zanzibar, limited information is available. Determining changes in detection rates and factors associated with disability is crucial for the treatment and preventative strategies for this debilitating disease. This study aimed to determine trends in case detection rate for leprosy and risk factors for disability among registered patients in Zanzibar between 2018 and 2021.

Methods: The study included all leprosy patients who received treatment in 11 districts of Zanzibar between 2018 and 2021. Prevalence and new case detection rate (NCDR) was calculated. Multivariable Poisson regression analyses were used to identify factors associated with leprosy disability. Crude and adjusted prevalence ratios (APR) and their respective 95% confidence intervals (CI) were reported. P-values ≤0.05 was considered significant.

Results: Out of the 490 leprosy cases reported between 2018 and 2021, 95.7% were new patients, and 71.2% of them were multi-bacillary. The disease was found to be more common in male (60.4%). The average prevalence was 7.43/100,000 population while the average NCDR was 7.13/100,000. There was a significant decrease in disability grades from diagnosis to the end of the treatment over a 4-year period (P<0.001). Male sex (APR=1.55; 95% CI: 1.18-2.04), advanced age (APR=5.01; 95% CI: 1.91-13.17), multi-bacillary (APR=6.99; 95% CI: 3.16-15.44) and HIV negative patients (APR=1.51; 95% CI: 1.11-2.06) were more likely to develop physical disability.

Conclusion: This study found that leprosy disability grades at diagnosis compared to the end of treatment declined. There was no significant change in point prevalence and NCDR. Disability was associated with male sex, advanced age, multi-bacillary, and HIV-negative patients. To prevent leprosy-related disability and transmissions, health education, early case detection and adequate multidrug therapy should be prioritized.

Keywords: *Leprosy; Disability; Trend; Zanzibar*

CU02ID: Seropositivity of Rubella IgG Antibodies and Associated Factors among Pregnant Women attending Antenatal Clinics in Unguja, Zanzibar

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Background: Rubella virus (RV) infection is associated with congenital Rubella syndrome (CRS) which is characterized by deafness, heart diseases and cataracts. Rubella sero-positivity among pregnant women has been reported to range from 54.1% to 95.2% in Africa. Study conducted in Mwanza 10 years ago reported 10% of women of reproductive age were susceptible to Rubella primary infection. This study reports the seropositivity of Rubella virus infection in Unguja 9 years after the implementation of Measles-Rubella vaccination programme.

Methods: A cross-sectional study involving 171 pregnant women attending different antenatal clinics in Unguja, Zanzibar was conducted from May 2023 to July 2023. Sociodemographic and other relevant information were collected using structured questionnaires and blood samples were collected from each consented woman. Detection of rubella IgG antibodies was done using an indirect Enzyme Linked Immunosorbent Assay kit (Vircell, S.L. Parque Technologico de la Salud, Avicena 8, Spain). Data was entered into the Microsoft excel sheet for cleaning and coding followed by descriptive analysis using Stata version 15.

Results: The median age of the enrolled participants was 27 [IQR: 23-31] years. The overall seroprevalence of Rubella IgG antibodies was found to be 161/171(94.15%) [95% CI:89%-96%]. No factor was found to be associated with seropositivity of Rubella IgG antibodies among pregnant women attending antenatal clinics in Unguja Zanzibar.

Conclusion: Nine years after implementation of Rubella vaccine programme 6% of pregnant women attending antenatal clinics are susceptible to Rubella virus infection

Keywords: *Rubella virus; Congenital Rubella Syndrome (CRS); Measles-Rubella vaccine; Pregnant women*

CU03ID: Genetic Diversity, Multiplicity of Infection and kelch13 Mutations among Plasmodium falciparum Infected Children in Mwanza, Tanzania

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Background: *Plasmodium falciparum* malaria is still a public health concern in Tanzania, and the main challenges in controlling and eliminating malaria results from genetic diversity, multiplicity of infection and artemisinin resistance. We report the diversity of merozoite surface protein (*msp*) markers and existing *Plasmodium falciparum kelch13(k13)* mutations among children infected with malaria an endemic area in Tanzania. We aimed to determine the genetic diversity, multiplicity of infection and *Plasmodium falciparum k13* mutations among malaria infected children in Mwanza, Tanzania.

Methods: A total of 168 samples collected in different seasons between 2016 and 2022 were genotyped at the highly polymorphic *Plasmodium falciparum* coding for merozoite surface proteins; *msp1* and *msp2* using nested PCR, and respective *k13* targeted sequencing. Bioinformatics and descriptive analysis of sequences was done using Geneious Prime Software version 2023.2 and STATA version 15 respectively.

Results: A total of 122/168 (72.62%) samples were positive for *msp1* and 95/168 (56.55%) for *msp-2* allelic markers. Merozoite surface proteins were highly diverse such that K1(*msp1*) allele was the predominant 93/122 (76.23%). For *msp2* markers, 3D7 was the most frequent allele 68/95 (71.58%). The multiplicity of infection was 1.52 and 1.30 for *msp1* and *msp2* respectively. Regarding *k13* artemisinin resistance marker mutations, 125/143 (87.41%) were similar to known wild type, and only 18/143 (12.59%) mutations were non-wild type with 11/18 (61.11%) being non-synonymous. One sample had R561H mutation which is associated with artemisinin resistance. There was no significant association between *msp* genotypes with *k13* mutations [(p>0.05)].

Conclusion: High genetic diversity and allele frequencies in *P. falciparum* isolates provide clear evidence of ongoing high transmission rates. There is also a circulating R561H mutation, which is the WHO validated mutation associated with artemisinin resistance in Mwanza.

Keywords: *msp1; msp2; k13; Genetic diversity; Multiplicity of infection*

CU04ID: Uptake of COVID-19 vaccination and associated factors among patients attending oncology services at the Ocean Road Cancer Institute in Dar es Salaam, Tanzania

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Background: COVID-19 vaccination campaigns have reduced diseases severity and fatalities around the globe. However, Sub-Saharan Africa faces vaccine uptake challenges. Global data shows 67.7% of the general population are vaccinated, and Tanzania is reported appealing findings on the targeted vaccinating coverage (over 70%) among individuals aged 18 years and above by December 2022. However, a more specific assessment of the vaccination coverage by groups is needed, and cancer patients are priority groups owing to their vulnerability.

Methods: A cross-sectional study design was conducted. A stratified sampling was used for quantitative, and convenience sampling was applied for qualitative data collection. Data were collected through a mobile application, Open Data Kit (ODK) and analysed using the statistical software 'R'. Qualitative data were collected through in-depth interviews and analysed by 'R'. A total of 505 cancer patients participated in the study, with 479 in quantitative and 26 in qualitative. Univariate and multivariate logistic regression analyses were performed to determine significant associations between socio-demographic, clinical and health belief model (HBM) variables and COVID-19 vaccine among cancer patients. A thematic qualitative was conducted to explore the underlying beliefs and perceptions influencing vaccination decision.

Results: A total of 384 (80.2%) of the interviewed participants were female with a mean age of 48 years (± SD 12.4) years; ranging from 18 to 83 years. Approximately 58.2% (278/479) of the participants reported to be vaccinated against COVID-19, and among them 79.5% were females. Two factors showed significant associations with vaccine uptake: perception on COVID-19 vaccine (OR 8.86, CI 2.84–32.2, p<0.001) and perceived severity of COVID-19 (OR 0.56, CI 0.36-0.87, p=0.010). In the qualitative part, the findings suggest that individuals' beliefs, perceptions, and external factors play a role in their decision to get vaccinated.

Conclusion: Approximately 6 out of 10 cancer patients at the ORCI reported to be vaccinated; with patients care setting, perception on COVID-19 vaccine, and perceived severity being significantly associated with COVID-19 vaccination uptake. Public health interventions should leverage these identified factors to promote enhanced vaccine acceptance and uptake, through recognizing and tailoring communication efforts to specific characteristics.

Keywords: *COVID-19 vaccine; Cancer patient; Oncology services; Ocean Road Cancer Institute (ORCI)*

CU05ID: SARS-CoV-2 seropositivity among people living with and without HIV in the first year of the COVID-19 pandemic in Haiti and Tanzania

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Background: In people living with HIV (PLWH), compromised humoral immune response against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) may influence serology test results. We aimed to estimate the seroprevalence of immunoglobulin G (IgG) antibodies against SARS-CoV-2 among people with and without HIV in Tanzania and Haiti.

Methods: In Tanzania between September 2020 and May 2021 participants were recruited from the HIV&HTN cohort. In Haiti, participants were recruited from several ongoing cohort studies including a community-based study of cardiovascular disease and cohorts of adults living with HIV and with a history of tuberculosis (TB) between September 2020 and September 2021. Demographic and clinical information was abstracted from electronic medical records. A single blood sample was collected from participants in Tanzania and two blood samples were collected six months apart from participants in Haiti. All participants were aged ≥18 years. Quantitative detection of anti-SARS-CoV-2 antibodies was measured using commercially available assay, R&D COVID-SeroIndex, Kantaro Quantitative SARS-CoV-2 IgG Antibody RUO Kit. Statistical analyses were performed using R.

Results: In Tanzania, a total of 128 adults PLWH and 142 HIV-uninfected adults and a total of 383 adults PLWH and 484 HIV-uninfected individuals in Haiti were enrolled in the study. In both countries, we found levels of antibodies to be lower in PLWH compared to uninfected individuals. In Tanzania, SARS-CoV-2 seropositivity was less common in PLWH (27.3%) compared to HIV-uninfected adults (51.4%). In Haiti, cumulative incidence of SARS-CoV-2 antibodies was significantly lower among PLWH compared to HIV-uninfected individuals (50.7% versus 67.5% respectively; p <0.001). In Tanzania, obesity was found to be associated with SARS-CoV-2 seropositivity (53.5%; p=0.002). No association between SARS-CoV-2 seropositivity and sex, level of education, and income was found in both countries.

Conclusion: These results suggest that PLWH may not mount as high of an antibody response against SARS-CoV-2 compared to uninfected individuals. Repeated infection by SARS-CoV-2 and longer viral shedding may explain why the prevalence of seropositivity increased rapidly in PLWH over time. These data suggest that PLWH would benefit from focused COVID-19 prevention programs, testing initiatives and robust vaccine scheduling.

Keywords: *COVID-19; SARS-CoV-2; Antibodies; Seroprevalence; PLWH*

CU06ID: Prevalence and Associated factors of Cytomegalovirus IgG antibodies among Sickle Cell Patients admitted at Paediatric department Bugando Medical Centre, Mwanza Tanzania

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Background: Cytomegalovirus (CMV) infection is a significance concern for individuals with sickle cell diseases (SCD). CMV can cause severe complications such as acute chest syndrome, pneumonitis, and increased SCD-related complications such as vaso-occlusive crises and stroke among children with SCD. Information on the burden of CMV among sickle cell in Tanzania is limited. This study aimed to determine the prevalence of Cytomegalovirus IgG antibodies among sickle cell patients admitted at paediatric department of the Bugando Medical Centre.

Methods: A laboratory based cross sectional study involving 180 achieved sera collected from sickle cell patients was conducted. Detection of Cytomegalovirus IgG antibodies was done using Enzyme Immunoassay. Socio-demographic data were collected using standardized questionnaire. Data analysis was done using STATA version 15 according to objectives of the study.

Results: The median [IQR] age of participants was 5.5[0.1-15.4] years, the overall prevalence of CMV IgG antibodies was 90.2% (83/92). History of blood transfusion (P=0.006) was found to significantly associated with CMV IgG antibodies.

Conclusion: High prevalence of CMV IgG antibodies among sickle cell patients was observed, Appropriate measures should be taken to overcome CMV related complications among SCD patients.

Keywords: *Cytomegalovirus; Sick cell; Mwanza*

CU07ID: Prevalence of Hepatitis B surface antigen and Associated factors among Diabetic patients attending Bugando Medical Centre in Mwanza, Tanzania

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Background: Hepatitis B virus has been termed as major public health concern especially in high-risk groups such as diabetic patients. Hepatitis infection can progress to serious liver diseases such as cirrhosis and hepatocellular carcinoma. However, there is a limited information about the magnitude of Hepatitis B among diabetic patients in Mwanza leading to underprivileged management of HBV infection in this high-risk group. This study aimed to determine the prevalence of hepatitis B surface antigen and associated factors among diabetic patients attending BMC Mwanza, Tanzania.

Methods: A cross sectional study involving 177 diabetic patients was conducted between May and June 2023 at BMC in Mwanza, Tanzania. Socio-demographic information and medical history of the study participants were collected using structured pretested data collection tool. About 3-5ml of blood sample from each participant was collected in a plain tube and use to detect HBSAg using One Step HBSAg Rapid Test kit. Data analysis was done using STATA version 15 software.

Results: The median [IQR] age of the study participants was 61[29-85] years. The prevalence of HBSAg was 4.5% among diabetic patients. Sharing of cutting equipment was statistically significant associated with HBsAg positivity (p=0.022).

Conclusion: There is intermediate endemicity of Hepatitis B virus infection among diabetic patients attending clinic at BMC in Mwanza with sharing of cutting equipment significantly contributing to Hepatitis B virus infection.

Keywords: *Hepatitis B surface antigen; Diabetic patients; Mwanza*

CU08ID: Efficacy of In2Care® EaveTubes against wild populations of malaria vectors in a small-scale field study at Kagera Sugar Ltd, Misenyi, Tanzania

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Background: A small-scale efficacy study with the new malaria vector control product the In2Care® EaveTubes was carried out at Kagera Sugar Ltd, Missenyi, Tanzania between October 2019 and July 2020. Its main aim was to collect proof of impact against wild populations of anopheline mosquitoes (malaria vectors) in Tanzanian field settings.

Method: In total, 350 Eave Tubes were installed in 100 iron sheet barrack rooms and 35 mud houses in a selected camp where workers of Kagera Sugar Ltd resided. Two similar camps did not receive any malaria interventions and served as control sites to monitor baseline mosquito densities. During the 9-month intervention, the quality and durability of the insecticide used in the EaveTubes were tested. Furthermore, malaria disease cases were monitored to provide an indication of potential epidemiological impacts.

Results: Entomological data showed that EaveTubes significantly reduced indoor anopheline vector densities with 58% overall and 75% during the peak mosquito season. Quality control results showed there was no degradation of insecticide content or mosquitocidal efficacy of EaveTube netting samples used for 6 months under field conditions. The deltamethrin-treated product was effective against wild mosquitoes, reared insecticide-susceptible mosquitoes, and reared pyrethroid-resistant mosquitoes. Malaria incidence results showed a decline in disease cases in the EaveTubes-treated camp and the control camps, compared to the baseline. The highest malaria case incidence reduction was in the EaveTube intervention camp (25.6%).

Conclusion: These findings indicate the high efficacy and durability of EaveTubes against wild malaria mosquito populations and nuisance mosquitoes in Tanzania. EaveTubes can thus complement malaria vector control in areas where insecticide resistance has compromised existing vector control tools.

Keywords: *Anopheles gambiae; Culex quinquefasciatus; Electrostatic effect; resistance; Insecticides*

CU09ID: Knowledge and risk Assessment of Hepatitis B Infection among Barbers and Beauty Salon Workers in Mwanza, Tanzania

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Background: Community-acquired hepatitis B virus (HBV) infection is increasing in developing countries. In Tanzania, there is an exponential increase in barbershops and beauty salons, which are potential sites of transmission of HBV. Occupational exposure rates and HBV vaccination rates among salon workers are unknown. Their level of knowledge about infection prevention and control (IPC) is also not known. The aim of this study was to evaluate the risk of infection and the knowledge of barbers and beauty salon workers about HBV transmission and prevention.

Methods: A cross-sectional study was conducted among 200 barbers and beauty salon workers in the urban district of Mwanza, Tanzania. Thirteen barbershops and 13 beauty salons were selected using convenience sampling. Data were collected using a self-administered questionnaire.

Results: Fifty-four percent of the study participants were females, and the mean age was 25 (21.0-29.5) years. A total of 126 (63%) participants were aware of the existence of HBV infection, of which only 22% had general good knowledge of HBV transmission and prevention. Both awareness of HBV awareness ($p<0.001$) and good knowledge ($p=0.03$) were associated with higher education level. Seventy-three (36.5%) participants reported a history of occupational injuries. Only 27.8% and 14.3% were familiar with the correct methods of decontaminating beauty tools and correct post-exposure wound care, respectively. Vaccination coverage was very low (2%) among Barbers and Beauty Salon Workers.

Conclusion: Barbers and beauty salon workers lack basic knowledge about HBV transmission and prevention, placing the clients they serve at high risk for HBV infection. The HBV IPC training should focus on this specific group and the implementation of these measures should be closely monitored in barbershops and beauty salons. This vulnerable group should be considered for global vaccination program.

Keywords: *Knowledge; Occupational; Exposure; Hepatitis B; Salon; Barbers; Tanzania*

CU10ID: Association between Latent Tuberculosis Infection and Glucose Intolerance among Adults in Mwanza City, Northwestern Tanzania

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Background: Tuberculosis (TB) remains a significant global health concern, primarily caused by the bacterium *Mycobacterium tuberculosis*. It primarily targets the lungs but can affect various body parts. Notably, not all individuals infected with TB bacteria develop the active disease; instead, two TB-related conditions exist: Latent TB Infection (LTBI) and TB Disease.

Methods: This study employed a retrospective cohort study design nested within the Chronic Infections, Co-morbidities, and Diabetes in Africa (CICADA) cohort. It recruited participants from the Ilemela and Nyamagana districts who had previously taken part in the Nutrition, Diabetes, and Pulmonary Tuberculosis (TB-NUT) study conducted from 2006 to 2009. These individuals were later invited to join the CICADA cohort, a study investigating diabetes' burden and risk factors in Mwanza, Tanzania, spanning from 2016 to 2020. The study primarily relied on secondary data to establish the association between LTBI and glucose intolerance.

Results: Over a nearly ten-year period, a total of 194 neighbours (NB) and households (HH) of the TB case index were recruited and enrolled in this cohort between April 2006 and December 2009. These participants were followed up to assess the development of glucose intolerance (including pre-diabetes and diabetes) during the study period. Among the 194 participants, 113 (58.2%) from NB and HH returned for glucose intolerance examinations between 2016 and 2020. Of this group, 54 (47.8%) tested LTBI-negative, and 59 (52.2%) tested LTBI-positive at the baseline recruitment, as determined by QuantiFERON-TB Gold In-Tube (QFT) testing. Individuals with latent TB infection were found to be 2.7 times more likely to develop pre-diabetes or diabetes.

Conclusion: These findings underscore the need for further research in understanding the intricate interplay between infectious and metabolic diseases. Such knowledge can significantly inform clinical practices and public health strategies, contributing to improved health outcomes in regions burdened by both TB and diabetes.

Keywords: *Latent Tuberculosis Infection; Glucose Intolerance; Mwanza City; Northwestern Tanzania*

CU11ID: High seropositivity of Severe Acute Respiratory Syndrome Coronavirus-2 and associated factors among pregnant women in selected health facilities in Mwanza, Tanzania

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Background: Coronavirus disease -19 (COVID-19) pandemic resulted to about 200 million cases and 4.3 million deaths. Many studies had been carried out to explore the burden of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) among the general population as well as pregnant women in developed countries. However, there is limited data on the magnitude of SARS-Cov-2 among pregnant women which hinders its control efforts in this group. Therefore, this study determined the seroprevalence of SARS-CoV-2 and associated factors among pregnant women in selected health facilities in Mwanza, Tanzania.

Methods: A hospital-based cross-sectional study involving 192 consented pregnant women attending antenatal clinics in Mwanza was conducted from July to November 2022. Data were collected using a structured questionnaire and the detection of SARS-CoV-2 antibodies was done by using rapid immunochromatographic tests. The descriptive data analysis was done using STATA version 15.

Results: The mean age of enrolled pregnant women was 25.4 ± 5.4 years, and a mean gestation age was 25.6 ± 8.3 weeks. The overall seroprevalence of SARS-CoV-2 among pregnant women was 72.4% (95% CI: 65-78%) in Mwanza, Tanzania. The seroprevalence of IgG alone was 70.8% and for both IgG and IgM was 1.6%. High education level (OR:2.19, 95% CI= 1.06 - 4.54, P=0.035) and advanced gestation age (OR:4.38, 95% CI= 1.16- 16.53, P= 0.029) were independently associated with SARS-CoV- 2 seropositivity.

Conclusion: Almost three-quarters of pregnant women in Nyamagana, Ilemela, and Sengerema districts were previously infected with SARS-CoV-2. This calls upon the Ministry of Health to advocate continued health education on preventive measures, implementation of vaccination programs, and screening activities to protect this vulnerable group.

Keywords: *SARS-CoV-2; COVID-19; Seropositivity; Mwanza*

CU12ID: Five years retrospective cross-sectional study to determine the burden of Candida spp. infections of urinary tract system among patients attending tertiary hospital in Northwestern, Tanzania

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Background: Urinary tract infections (UTIs) stand as a prominent global health concern. This study entails a five-year retrospective analysis, utilizing a cross-sectional study design to examining microbiology laboratory data of individuals clinically diagnosed with UTIs at Bugando Medical Centre (BMC) to gain insights into the prevalence and factors linked to candiduria.

Methods: Data extracted were meticulously cleaned and coded in an MS-Excel sheet, subsequently transferred to STATA version 15 for analysis. Binary logistic regression analysis was employed to identify factors associated with candiduria. A probability value below 0.05 at a 95% confidence interval (CI) was considered statistically significant.

Results: Urine samples for culture and sensitivity comprised 33.4% (20,755) of the total biological samples (62,335). The median age of the patients stood at 19 years. A slight majority were female, accounting for 52.8% (10,051), and two-thirds sought treatment at outpatient departments (67.5%, 12,843). Among patients with significant pathogenic growth, the prevalence of candiduria was 4.6% (221 out of 4,772). Notably, inpatients exhibited a higher incidence of candiduria compared to outpatients, with rates of 9.4% (1,882) versus 1.6% (2,890), yielding a statistically significant p-value of 0.000. Non-albicans *Candida* spp. (NAC) remained the most prevalent pathogen. Factors significantly associated with candiduria included being female (odds ratio (OR) = 1.7, 95% CI 1.3-2.3) and hospital admission (OR = 6.6, 95% CI 4.7-9.2).

Conclusion: Candiduria affect 5 out of every 100 UTI-diagnosed patients, predominantly among females and those admitted to the hospital. Clinicians at tertiary hospitals should consider urinary Candidiasis as a potential diagnosis for patients at risk who present with UTI-like symptoms.

Keywords: *Candida* spp.; Candiduria; Non albicans *Candida* spp.; UTI patients

CU13ID: High seropositivity of Mumps IgG Antibodies among School Aged Children in Mbeya Region in Tanzania

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Background: Mumps virus infection is mostly characterized by complications such as orchitis, oophoritis, aseptic meningitis, mastitis, encephalopathy, deafness, and spontaneous abortion among many others. It is vaccine preventable disease, and its incidences is low in countries implementing vaccination programme. Tanzania is among the countries whereby the Mumps vaccine is not implemented. Despite its complications, there is limited information on its magnitude in Tanzania which hinders its control efforts. This study reports high seroprevalence of Mumps IgG antibodies and associated factors among school aged children in rural areas of Mbeya region, Tanzania.

Methods: A cross-sectional study involving 196 school children aged children was conducted from May to July 2023. Structured questionnaire was used to collect participant's socio-demographic information and other relevant information. Blood samples were collected, and sera were used for detection of Mumps immunoglobulin G antibodies (IgG) using indirect Enzyme-Linked Immunosorbent Assay (ELISA) (Vircell, S.L. Parque Technologico de la Salud, Avicena 8, Spain). Descriptive data analysis was done using STATA version 15.

Results: The median age of enrolled children was 13 with interquartile range (IQR): 8-13) years. The seropositivity of Mumps IgG antibodies was 88.8%, (95% CI: 83.5-92.5) among 196 children tested. By multivariable logistic regression analysis, history of fever (OR: 5.36 95% CI:1.02-28.22 P=0.047) and sharing utensils (OR: 8.05 95% CI:1.99-32.65 P=0.003) were found to be associated with Mumps IgG seropositivity among school aged children in Mbeya.

Conclusion: Mumps IgG seropositivity is high in Mbeya region and is significantly associated with history of fever and sharing of utensils. This suggests that the virus is endemic and might contribute to Mumps associated complications. This calls for the need of surveillance of Mumps infections and associated complications across the country to provide data that can guide a need of vaccination programme.

Keywords: *Mumps; Mbeya; IgG; Tanzania*

CU14ID: Effectiveness of Hepatitis B vaccination programme in Mwanza Tanzania

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Background: Hepatitis B virus **(**HBV) is a global public health problem due to its worldwide distribution and the potential to cause adverse consequences such as acute hepatitis B, chronic hepatitis B, hepatocellular carcinoma, and liver failure. HBV vaccine was implemented in Tanzania since 2002 targeting children below five years of age. Since its introduction the vaccine coverage across the country has been found to range from 83% in 2007 to 100% in 2022 while in Mwanza the coverage was between 94% in 2005 and 98% in 2022. This study was designed to determine the prevalence and associated factors of HBsAg among school aged children aged children born during HBV vaccination implementation programme in urban and rural areas of Mwanza, Tanzania.

Methods: A laboratory based analytical cross-sectional study involving 334 archived sera collected in 2018 from school aged children in different public primary schools in urban and rural areas in Mwanza was conducted from July to August 2023. Detection of HBsAg was done using one step HBsAg Rapid Test kit. Descriptive data analysis was done using STATA version 15.

Results: The median age of the study participants was 9 (IQR: 6-12) years. Female formed 62.3% (n=208) of the study participants. Majority of the study participants 252 (75.5%) were from urban settings. Only one participant (0.3%) tested positive for HBsAg compared to the positivity between 3% and 8% that has been observed among pregnant women, healthcare workers and medical students in the same settings.

Conclusion: Prevalence of HBV is very low among school aged children born during HBV vaccination implementation suggesting effectiveness of HBV vaccine programme in the lake zone.

Keywords: *Hepatitis; Hepatocellular carcinoma; children*

CU15ID: Prevalence of Hepatitis B Viral Infection and Its associated Factors among Patients with Hepatocellular Carcinoma attending Bugando Medical Centre Mwanza, Tanzania

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Background: Hepatocellular carcinoma (HCC) is the most common primary liver malignancy and a leading cause of cancer-related deaths worldwide. Chronic hepatitis B virus and chronic hepatitis C virus have been found to be associated with HCC in more than 70% of cases. However, there is a limited information about the magnitude of Hepatitis B as well as factors associated with it among patients with hepatocellular carcinoma attending Bugando Medical Centre, Mwanza, Tanzania.

Objective: This study aimed at determining the prevalence of hepatitis B infection and associated factors among HCC patients attending BMC in Mwanza.

Methods: A cross sectional study involving HCC patients was conducted between May and July 2023 in Mwanza. Socio-demographic and clinical information of the study participants were collected using structured pretested data collection tool. Blood sample from each participant was collected in a red top tube followed by serum analysis to detect HBsAg using One Step HbsAg Rapid Test kit. Data analysis was done by using STATA version 15.

Results: The median [IQR] age of study participants was 43[18-86], overall positivity of HBsAg was 46.5 %(27/58) [95% CI: 33%-59%]. Being an older adult (age group 64+) (OR: 0.81 95% CI: 0.01-0.68, P=0.021) showed significant association with seropositivity of HBSAg.

Conclusion: The study found high HBsAg seropositivity among HCC patients in Bugando Medical Centre. Being in an older adults' group had a significant association with HBSAg positivity.

Keywords: *Hepatitis C; Hepatocellular Carcinoma; Bugando Medical Centre*

CU16ID: Evaluating the Field Performance of Rapid Tests for Herpes Simplex Virus-Type 2 in Rural Tanzania

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Background: Globally, an estimated 491 million people are affected with herpes simplex virus-type 2 (HSV-2), the leading cause of genital ulcer disease. HSV-2 infects women at a rate two times greater than men and increases the risk of the acquisition and transmission of HIV, particularly for women. Rapid and point of care test for HSV-2 would allow clinicians to distinguish HSV-2 from other genital ulcer diseases and improve genital ulcer disease management. We evaluated the performance of two rapid POC tests for HSV2.

Methods: We collected blood specimens from women attending a screening visit for enrolment into a cohort. Blood samples were tested in the field for HSV2 antibodies by Biogate Labs HSV-2 IgG/IgM Rapid Test, and the OnSite Duo HSV-1/2 IgG/IgM Rapid Test. The same blood samples were tested for HSV2 antibodies by Kalon HSV-2 IgG ELISA in the laboratory. The results for the two rapid POC tests were compared with the ELISA results.

Results: Ten samples were concordant positive and 23 concordant negative by Biogate POC test and Kalon ELISA, giving a sensitivity and specificity of 30.3% and 100% respectively. Similarly, 23 samples were concordant positive and 20 samples were concordant negative for Onsite Duo POC test and Kalon ELISA, giving a sensitivity of 69.7% and specificity of 87.0% respectively. Older age of first sex was associated with a false negative Biogate test result. A lower Kalon ELISA optical density value was associated with a false negative OnSite Duo result, but not with a false negative Biogate result (2.7 [2.2-3.2] versus 1.0 [0.8-1.8], p<0.001).

Conclusion: In our setting, Onsite duo test has a better sensitivity than Biogate though slightly lower specificity. Thus, it is important to validate the tests before they are used.

Keywords: *Herpes simplex virus-type 2; Diagnosis; Rapid Point-of-Care Testing*

CU17ID: COVID-19 vaccine coverage among non-medical personnel in selected public health facilities in the city of Mwanza: Lessons for future pandemic

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Background: During COVID-19 pandemic, a significant number of premature deaths observed among medical personnel. In the health facilities, clients receive medical care from health workers, but non-medical personnel also provide support to smoothen the operations in the health facilities. Hence, non-medical personnel (cashiers, receptionists, laundry attendants) may be at risk of contracting contagious infections due to close interaction with patients and close relatives within health facility premises. This study aimed at determining the level of COVID-19 vaccine uptake and proportion of hesitancy among non-medical personnel.

Methods: A cross sectional study was conducted between April and May 2023 involving a convenient sample of 203 non-medical personnel from the Bugando Medical Centre (85, 42%), Sekou Toure regional hospital (51, 25%), Nyamagana district hospital (29, 14%), Buzuruga Health Centre (24, 12%), and Karume Health Centre (14, 7%). We involved only non-medical personnel who were present at work during data collection. A structured questionnaire was self-administered, and data analysis was done using STATA version 13.

Results: Less than a quarter (17%, 203) of non-medical personnel had received COVID 19 vaccine in selected health facilities. Almost two third (60%, 203) of the participants were in hesitancy level and significant proportion (12%, 203) refused to be vaccinated. Lack of communication and reliable information on the safety, efficacy, side effects, and misconception on level of risk assessment hindered uptake of COVID 19 vaccine.

Conclusion: Low uptake of COVID 19 vaccine among non-medical personnel with almost two third being in hesitancy level were observed in selected health facilities in the city of Mwanza. This is a missed opportunity in non-medical personnel when fighting for contagious conditions such as COVID-19 in hospital settings. Non-medical personnel should be fully engaged and involved in infectious diseases prevention campaign and vaccination programs in the future pandemic.

Keywords: *COVID 19 pandemic; COVID 19 vaccine; non-medical personnel; hesitancy; Tanzania*

CU18ID: Molecular Detection of High-Risk Human Papillomavirus and Associated Factors Among Patient with Esophageal Carcinoma at Bugando Medical Centre in Mwanza, Tanzania

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Background: Human papillomavirus (HPV) colonization in the oesophagus, especially the high-risk subtypes is an increasingly reported risk factor of esophageal carcinoma, however the role of HPV in the development of this condition remains unclear in our setting. Our study aimed to determine the prevalence and associated risk factors of high-risk HPV in formalin-fixed paraffin-embedded (FFPE) tissue blocks with esophageal carcinoma at BMC in Mwanza, Tanzania.

Methods: DNA samples from 118 FFPE tissue blocks were analysed by convectional Polymerase chain reaction (PCR) using MY 09/11 degenerate primers targeting the L1 conserved region of HPV genome and specific primers for HPV 16 and HPV 18 targeting the E6/E7 region of types of HPV 16 and 18 respectively.

Results: Of the 118 FFPE tissue blocks enrolled, esophageal Squamous carcinoma (ESCC) 107 (91%) was a predominant histological type followed by esophageal adenocarcinoma (EAC) 11(9%). Majority belonged to males (68.67%) from Mwanza region with median age of 59.5 (48.5-68) years. A total of 63 (53%) tissue blocks tested positive for high-risk HPV; out of these 43(68.25%) were from males and 20 (31.75%) were from females. Among the 63 positive high-risks HPV FFPE tissue blocks, 41(65.08%) tested positive for HPV subtype 16, 15(23.8%) tested positive for HPV subtype 18 and 7 (11.11%) tested positive for other high-risk HPV subtypes. The factors associated with HPV status were alcohol consumption and cigarette smoking (p-values: 0.040 and 0.0010 respectively).

Conclusion: Around half of the esophageal carcinoma FFPE tissue blocks were positive for HPV DNA using PCR. The predominant HPV subtype was HPV 16. The HPV status was significantly associated with cigarette smoking and alcohol use.

Keywords: *Oesophageal carcinoma; Squamous cell carcinoma; Human papillomavirus (HPV)*

CU19ID: Incremental prediction of inflammatory biomarkers and their relationship with outcomes among patients with COVID-19 pneumonia admitted at Bugando Medical Centre, Mwanza, Tanzania: a retrospective cohort study

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Background: Coronavirus disease 2019 (COVID-19) pandemic affected millions of people worldwide. Inflammatory markers are crucial for the early identification of patients' outcomes and their subsequent monitoring. However, previous studies conducted at Bugando Medical Centre (BMC) have not assessed combination of markers in predicting outcomes to optimize existing management algorithms.

Methods: Retrospective cohort study was conducted at BMC from February to April 2023 involving patients admitted with RT-PCR confirmed COVID-19. We used recorded data in the hospital electronic management information system. Inflammatory markers such as Neutrophil: Leucocyte (N: L) ratio, Full Blood Picture (FBP), D-dimer, C - reactive protein (CRP), and Serum ferritin at admission were extracted. Analysis was done using STATA version 15 using regression analysis and receiver-operating curves (ROC) with area under the curve (AUC).

Result: A total of 210 patients were enrolled with mean age was 59 (SD ±12.42) years and males were 114 (54.3%). Median (IQR) hospital stay was 9 [6-15] days, and overall mortality was 37.1% (78/210). Biomarkers had predictive AUCs for COVID-19 severity of 0.7999, 0.7934, 0.7762, and 0.7703 for CRP D-dimer, N:L ratio, serum ferritin. In triple combinations, D-dimer, N:L ratio, and CRP showed a higher AUC of 0.8999; the AUC of all four biomarkers was 0.9146. The predictive AUCs for COVID-19 mortality of D-dimer, CRP, N:L ratio, and serum ferritin, were 0.725, 0.7034, 0.7029, and 0.6880. In triple combination, predictive ability for mortality increased, with CRP, D-dimer, and N:L ratio being the highest (AUC 0.7992), lower than all four markers (AUC 0.8013). Biomarkers had low ability in predicting the length of hospitalization among patients with COVID-19.

Conclusion: The use of multiple biomarkers during admission improves the ability to predict disease outcome in patients with COVID-19 pneumonia. The use of at least three inflammatory markers at admission is therefore, recommended to maximize predictive potential while managing COVID-19 patients.

Keywords: *COVID-19; Mortality; Disease severity; Length of hospital stay*

CU20ID: Prevalence of Hepatitis B virus infection, associated risk factor, knowledge and vaccination status among household contacts of Hepatitis B index cases in Mwanza, Tanzania

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Background: Hepatitis B virus (HBV) infection is a major cause of morbidity and mortality worldwide. People who live with someone who has hepatitis B virus infection are identified as one of high-risk group because of their frequent exposure. Despite the high risk posed to the family members of the index cases, most people remain unaware of their infection status. Contact tracing is useful strategy to find new cases and reduce the costs of screening and vaccinating the entire population. The current study determined the prevalence of HBV infection, associated risk factors, and vaccination status among household's contacts of hepatitis B index cases in Mwanza region, Tanzania.

Methods: A cross-sectional study was conducted between July and August 2023. The study involved 97 index cases obtained from the BMC Hepatitis B clinic database, whereby 402 household contacts were enrolled as the study population. Social demographic data and other relevant information were collected using pre-testing questionnaire. About 3.5-4 mls of blood sample was collected from each household contact who met the criteria for Hepatitis B Surface antigen (HBSAg) screening.

Results: The prevalence of Hepatitis B virus infection (HBV) among household contacts was 5.4% (95% CI, 2.9-9.0) with significantly high proportion observed in older adults > 45 years (16.6%, p=0.005) and in males (9.9%, p=0.035). Only, 73 (18.2%) of household contacts had good Knowledge of HBV infection. A total of 56.7% of the household contacts had completed the full hepatitis B vaccination series. On multivariate analysis only being male was significantly associated with HBsAg seropositivity (OR: 7.16, 95%CI: 1.81-28.2, P=0.005).

Conclusion: The significant proportion of male household contacts was HBSAg seropositive. In addition, the majority of household contacts had poor to fair knowledge regarding HBV infections with more than one third were not vaccinated against HBV. There is a need to enhance awareness and education regarding HBV infection among household contacts to ensure the majority of the contacts are fully vaccinated.

Keywords: *HBV index case; Household contacts; Vaccination status; Prevalence*

CU21ID: High mortality among hospitalized confirmed COVID-19 patients with elevated inflammatory markers at Bugando Medical Centre

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Background: The COVID-19 pandemic resulted in premature deaths globally with elderly population, people living with non-communicable diseases, and health care workers being mostly vulnerable. In this study, we investigated the prevalence of SARS CoV-2 infection, risk of death, and clinical factors associated with mortality among hospitalized patients with COVID-19 like symptoms at Bugando Medical Centre.

Methods: A chart review approach was utilized to capture demographic characteristics, clinical presentations, and inflammatory markers from a cohort of hospitalized patients with COVID-19 like symptoms. Descriptive statistics were obtained, and Cox regression model was fitted to identify clinical factors associated to mortality using STATA13.

Results: A total of 593 patients with COVID-19 like symptoms were retrieved of which 52% were female with average age of 59 years. The most common clinical presentation at admission were cough (66%), difficulty breathing (63%), body weakness (47%), and chest pain (46%). Almost half of patients were known hypertensive (46%). Only 16% of patients had oxygen saturation below 90%. Prevalence of the laboratory confirmed SARS-CoV-2 infection was 41% [95%CI 36.7-45.9]. The overall mortality was 31.7% [95% CI 27.9 – 35.8]; however, was significantly higher among SARS-CoV-2 laboratory confirmed patients than to patients with negative SARS-CoV-2 PCR test (39.8% vs 26.9%, P=value = 0.005). Furthermore, antibiotics were commonly prescribed (58%) among study participants although bacteria screening was done in only 23%, of which prevalence of bacterial co-infection among confirmed COVID-19 patients was 27%. Elevated inflammatory markers such as D-dimer, neutrophils, CRP showed significantly high hazard ratio of 6.3 [95% CI 2.5-15.9] among patients with confirmed SARS-CoV-2 infection results.

Conclusion: Almost half of hospitalized patients with COVID-19 like symptoms had confirmed disease. Elevated inflammatory biomarkers were associated with poor survival among confirmed COVID-19 patients. Antibiotics were commonly prescribed despite the fact less than one third had bacterial co-infections.

Keywords: *COVID-19; Mortality; Inflammatory markers; Antibiotic use; Bacterial co-infection*

CU22ID: Low magnitude of consistent condom uses in HIV-infected youth on antiretroviral therapy in Ilala Dar Es Salaam, Tanzania: The need to address parenthood desire affecting consistent condom use among youth living with HIV.

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Background: The global HIV pandemic has profoundly impacted sub-Saharan Africa, highlighting the need for consistent condom use among youth to mitigate transmission in high-incidence groups. However, research on condom use among HIV-positive youth in Tanzania has been limited. This research aimed to determine the prevalence and associated factors of consistent condom use among sexually active HIV-positive youth receiving antiretroviral therapy at care and treatment clinics in Ilala district, Dar es Salaam, Tanzania.

Methods: Utilising a cross-sectional design, this study enrolled 420 sexually active HIV-positive youth aged 15-24 years attending clinics in Ilala District from July to August 2023. Participants completed a questionnaire on socio-demographics, knowledge, attitudes, behaviour and consistent condom use. Data were analysed using STATA software (version 17).

Results: The prevalence of consistent condom use was low at 31.9%. Multivariate analysis found youth attending healthcare centres as compared with those attending at dispensaries (AOR 0.36, p=0.044) as well as youth desiring parenthood as compared to those not desiring parenthood (AOR 0.06, p=0.000) were associated with low consistent condom use. Disclosing HIV status (AOR 5.53, p=0.003) was associated with consistent use.

Conclusion: Consistent condom use among HIV-positive youth was suboptimal. Key factors included facility type, disclosure status and reproductive desires. Targeted interventions include promoting HIV status disclosure, strengthening the health system by creating demand among sexually active youth living with HIV to consistently use condoms and proper counselling during clinical visits for all people living with HIV desiring parenthood to constantly use condoms until attained optimal viral load suppression as recommended by World Health Organisation (WHO) that Undetectable is Untransmittable (U=U).

Keywords: *Youth; Prevalence HIV; Associated factors; Consistent condom use*

CU23ID: Prevalence and associated factors of newly diagnosed pulmonary tuberculosis among adult diabetic patients admitted with poor glycaemic control in Mwanza

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Background: Undiagnosed, inadequately treated and poorly controlled diabetes appears to be a greater threat to tuberculosis prevention and control. Innate immunity is compromised by poor glycaemic management, which also increases the likelihood of acquiring active tuberculosis up to three times higher than in people with good glycaemic control. The study which was previously done in Mwanza showed that 6.2 % of diabetes had tuberculosis regardless of the level of glycaemic control. This study aimed to determine the prevalence and associated factors of newly diagnosed PTB among diabetic patients admitted with poor glycaemic control in Mwanza.

Methods: A cross-sectional study was conducted at Bugando Medical Centre (BMC) and Sekou Toure Regional Hospital (SRRH) in Mwanza. All consented adults admitted with poor glycaemic control were enrolled in this study. Structured questionnaires were administered, and physical examinations done. BMI, FBG/ RBG, HBA1c, GeneXpert, and chest-Xray were measured. STATA version 15 was used to analyse data.

Results: A total of 120 patients were enrolled for analysis. Out of them, 97(91.5%) participants had HBA1C ≥7%, indicating poor glycemic control. Male were 58(59.8%). Most of them 72(74.2%) aged below 60 years with mean age 48(+/- 14). The prevalence of newly diagnosed PTB was 18.6%; of which 12(12.4%) were GeneXpert positive and 6(6.2%) were diagnosed based on clinical symptoms and suggestive chest radiographs.

Among the participants, 35(36%) were overweight and 31(32%) were obese. Obesity was statisticallly significance associated with PTB..

Conclusion: Patients who are obese and overweight and age<60 admitted with poor glycaemic control should be screened for PTB using GeneXpert and chest radiographic imaging.

Keywords: *Poor glycaemic control; Diagnosed PTB*

CU24ID: Demographic, Antiretrovirals Eligibility and Uptake as Per WHO-2015 Guideline Characteristics among Chronically Hepatitis B Infected Patients in Lake Zone, Northern Tanzania

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Background: Hepatitis B virus (HBV) infection is the global public health problem. In an effort to fight HBV infection, Tanzania introduced infant/paediatric HBV vaccination in 2002 and started treatment in 2009. However demographic, and antiretroviral (ARV) eligibility and uptake as per WHO-2015 guidelines characteristics of HBV infected patients in Tanzania are poorly known since then. This study aims at determining demographic, clinical and virologic characteristics of HBV infected individuals attending at Bugando Medical Centre (BMC).

Methods: A retrospective-prospective hospital laboratory-based study involving 196 samples from HBsAg positive patients attending at the BMC-HBV clinic was conducted from May to October 2023. Whole blood, serum and plasma were used to analyse for full blood picture (FBP), alanine aminotransferase (ALT), aspartate amino transference (AST), and hepatitis B viral load (HBVL). Demographic, laboratory findings and ARV uptake data were extracted from medical records. Descriptive analysis was done using STATA version 15.

Results: A total of 196 HBV chronically infected patients were enrolled with a median age of 39 [32-47.5] years. The majority 194 (99%) were older than 20 years. Male formed the majority 144 (73.6%) of the studied participants. HBVL median was 979 [185-8467.5], with 18.9% above 20,000IU/mL HBVL. Aspartate-platelet ratio index (APRI) score median was 0.34 [0.25-0.68] and those with APRI score > 2 were 22 (11.2%). ARV eligibility and ARV uptake were 22.5% and 6.8% respectively based on WHO-2015 HBV prevention, care and treatment guidelines.

Conclusion: In this study, most of the chronically infected patients were older than 20 years old. ARV eligibility results were in agreement with the already reported global proportions, however, ARV uptake was far less from expectation of WHO-HBV achievement targets towards eliminating HBV infection by 2030. There is a need to develop a local protocol in line with WHO guidelines for the management of Chronic HBV infections at BMC.

Keywords: *Chronic HBV infection; ARV eligibility HBVL; Fibrosis*

CU25ID: Laboratory and simulated semi-field larvicidal efficacy of Aframomum angustifolium (Sonn.) K. Schum and Tagetes patula essential oils against Anopheles gambiae

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Background: Malaria is a vector-borne, important public health problem spread by mosquitoes in tropical regions. The use of synthetic insecticides for mosquito control has been linked to insecticide resistance. Thus, plants may be alternative sources of mosquito control agents. Therefore, this study focused on evaluating the larvicidal activity of *Aframomum angustifolium* and *Tagetes patula* essential oils against *Anopheles gambiae* larvae in laboratory and simulated semi-field conditions.

Methods: The Essential Oils (EOs) were extracted by the hydro distillation method, and the chemical compositions were determined using Gas chromatography-mass spectrometry. Laboratory and simulated bioassays were done according to the WHO protocol using laboratory-reared and field-collected larvae, as well as non-targeted organisms (*Gambusia affinis)* The test concentrations were (10,25,50,75, and 100) ppm. The collected data were analysed using probit analysis, and their means were compared in one-way analysis of variance (ANOVA) using IBM SPSS Statistic version 26.

Results: The main active ingredients in *T. patula* EO were terpinolene (20.75%) and (Z)-ocimene (17.10%), and in *A. angustifolium*, cis-pinen-3-ol (58.48%) and β-pinene (31.03%). The EO of *T. patula* was the most efficacious in the bioassay. The larvicidal bioassay findings demonstrated that the mortality rate was dose- and exposure-dependent. In the laboratory, the EOs of *A. angustifolium* and *T. patula* had larvicidal activity against *An. gambiae* larvae, with LC50 values of 1.71 and 0.71 ppm after 48 hours, respectively. Both binary combinations of the EOs showed synergistic interactions at 24 h but antagonistic interactions at 48 h. In the simulated-field trial using laboratory-reared larvae, the mortality rate was higher in the simulated setting compared with the laboratory setting for all the tested concentrations for both EOs. Only *A. angustifolium* EO was toxic against *Gambusia affinis* at 100 ppm.

Conclusion: The findings of this study have shown that *T. patula* and *A. angustifolium* oils have good larvicidal activities for *An. gambiae*. The two plants are obviously potential sources of larvicidal compounds that could be used to control the malaria vector.

Keywords: *Larvicidal efficacy; Essential oils; Mosquitoes*

CU26ID: Blood culture samples contamination rate and its associated factors in a microbiology laboratory at Bugando Medical Centre - Mwanza, Tanzania

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Background: The rate of blood culture contamination is an important quality laboratory indicator in isolation of pathogens causing blood infection. The acceptable blood culture contamination rate should be lower than 3%. Performance of blood culture tests is greatly affected by the presence of contaminants such as normal skin flora. This can have a direct impact in patient management, such as administration of unnecessary antibiotics, wastage of laboratory resources, and risks to patient life.

Methods: The study involved 7,528 blood culture samples received in microbiology department at BMC from August 2021 to July 2022. All samples meet the laboratory acceptance criteria were incubated in Bactec blood culture machine to look for possible contaminants.

Results: Of the 7528 blood samples processed, 2038 (27%) were positive cultures. Of these positive blood samples 1039(13.80%) found to be contaminated with skin normal flora. The most prevalent contaminant organisms were Coagulase Negative Staphylococcus 75.36%, followed by Bacillus species 18.09%. Generally, contamination rate was high to all clinics/wards, but the highest in the ICU wards (18.10%), and the lowest rate was 8.26% in the premature ward.

Conclusion: The rate of blood culture contamination in this setting is high, alarming the need of urgent IPC continuous improvement, monitoring and training of staff on aseptic techniques of blood specimen collection.

Keywords: *Blood culture contamination; Pathogens, Coagulase negative staphylococcus; Infection Prevention and Control; Continuous improvement; Aseptic techniques*

CU27ID: High incidence of ventilator associated pneumonia among patients on mechanical ventilator admitted in the Intensive Care Units at tertiary care hospitals in Dar es Salaam, Tanzania

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Background: Ventilator Associated Pneumonia (VAP) refers to a nosocomial pneumonia which develops 48-72 hours after endotracheal intubation. VAP is the second most common Health care associated Infections (HAI) in the Intensive Care Units (ICU) in the developed countries, with an incidence ranging from 7.47 to 21.3 per 1000 ventilation days. Most bacterial causing VAP are multi-drug resistant organisms, resulting in significant increase of ICU stay, health care cost as well as mortality. Investigating the incidence and bacteria etiological patterns of the VAP is important in reducing VAP associated the mortality.

Methods: Prospective cohort study was carried out for seven months, August 2019 to March 2020, among patients on mechanical ventilator at ICU from two tertiary hospitals. Bronchial secretions were collected from patients meeting clinical definition of VAP using mucous extractors. Bacterial culture, identification and antimicrobial sensitivity was done following standard laboratory procedures. A standard questionnaire was used to collect patients' socio-demographic and clinical data. SPSS version 20.0 was used for statistical analysis.

Results: The study enrolled 334 patients (median age 46, IQR 16-67), 65 were excluded, leaving 269 for analysis. Ventilator-associated pneumonia (VAP) occurred at a rate of 41/1000 ventilation days, primarily caused by *Pseudomonas aeruginosa* (24.7%) and *Klebsiella pneumoniae* (19.8%), with 70.1% being multidrug-resistant. Smoking (OR 3.4, 95% CI 1.22-9.45) and prior hospitalization (OR 6.02, 95% CI 1.81-8.23, p=0.003) independently predicted VAP.

Conclusion: High VAP rates in three ICUs; Gram-negative rods prevalent. Smoking history and healthcare contact predict VAP in mechanically ventilated patients

Keywords: *Ventilator associated pneumonia; ICU; MDR*

CU28ID: Prevalence of urinary tract candidiasis among PLWHIV with clinical diagnosis of urinary tract infections attending tertiary care hospitals in Mwanza, Tanzania

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Background: Urinary tract candidiasis (UTC), caused by *Candida* spp., is more severe in immunocompromised individuals like HIV-infected patients, increasing morbidity and mortality risks. Screening for *Candida* spp. in UTI-suspected cases is uncommon. Treatment guidelines lack empirical management for urinary candidiasis, relying on fungal culture as a last resort. This study aimed at assessing UTC prevalence and associated factors in HIV-positive patients.

Methods: This cross-sectional study was conducted from May to August 2022 among PLWHI attending Care and Treatment Clinic (CTC) at Bugando Medical Centre with signs and symptoms suggestive of UTI diagnosed by attending physicians. Social-demographic data were collected using pretested questionnaire and clean-catch mid-stream urine samples were collected observing all the standard procedure. The quantitative culture was done on Sabouraud Dextrose Agar (SDA). The SDA plates with growth equal or above 10^4 colony forming unit per millilitre (CFU/ml) were considered significant growth and pure colony from significant growth were cultured on CHROM agar for species identification. Data analysis was done using STATA version 13.

Results: A total of 246 patients were enrolled with a median age of 33 (IQR, 18-58) years. The prevalence of urinary tract candidiasis among PLWHIV clinically diagnosed with UTI patients was 44(17.8%). *Candida albicans* was the most isolated pathogen 31 (70.5%) followed by *Candida tropicalis* 10(22.7%) and *Candida krusei* 3(6.8%). The CD4 count below 200 cells/ml independently predicted the presence of urinary tract candidiasis among PLWHIV attending CTC (OR 0.99, 95% CI: 0.99-0.996, P=0.000).

Conclusion: Urinary tract candidiasis was found in 17.8% of PLWHIV, with *Candida albicans* as the primary culprit; lower CD4 counts predicted UTC.

Keywords: *PLWHIV; Urinary candidiasis; Bugando Medical Centre*

CU29ID: Old antibiotics as a new arsenal for multi-resistant isolates in diabetic foot ulcer infections: Therapeutic value of parenteral Colistin versus multi-resistant Pseudomonas species isolate strains. Case Report

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Background: Antimicrobial resistance to current novel antibiotics is posing a major threat to both human and zoonotic life. In the absence of new novel antibiotics molecules, clinicians have resorted into a desperate last resort to review and re-introduce old antibiotics as their new weaponry in the fight against multi-resistant Gram-negative bacteria.

Case Report: We report a case of a 77-year-old bed ridden diabetic and hypertensive with renal impairment diagnosed with bilateral lower limbs wet gangrene. She underwent trans-femoral on her right and trans-tibia amputation on her left lower limb. She developed surgical site infection on her right stump and wet gangrene on her left stump. Surgical toilet, debridement and stump revision was done on her right stump and a trans-femoral amputation on her left lower limb. Pus swab on her right stump revealed carbapenem resistant strains of *Pseudomonas aeruginosa*. She was instituted on parenteral Colistin and showed no bacterial growth 7 days post treatment. We report this case to highlight the isolation of carbapenem resistant strains of *Pseudomonas aeruginosa* and the efficacy and safety of Colistin as a salvage antibiotic in renal impaired patients.

Conclusion: In this current clinical scenario of increasing AMR, old and current active antimicrobials should be engaged in combating severe infections due to multi-drug resistant strains of Gram-negative bacteria.

Keywords: *Pseudomonas aeruginosa; Colistin; Gangrene*

CU30ID: Virological impact of HIV drug resistance testing in children, adolescents and adults failing first-line ART in Tanzania

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Background: HIV drug resistance plays a substantial role in antiretroviral therapy treatment failure in low- and middle-income countries where genotypic drug resistance testing is not routinely available. This study aimed at assessing virological impact of HIV drug resistance testing in patients with virological failure in Tanzania.

Methods: Patients were randomly assigned to either the control or the experimental group, the experimental group in addition to the standard of care had access to genotypic drug resistance testing, genotypic results used when changing regimen and both groups were followed up at 6 month and 12 months to determine their virological suppression.

Results: A total of 261 patients with a median age of 32 [IQR: 14.7-44.7] years were enrolled with 167 (64.0%) being females. In the intention-to-treat analysis suppression was achieved in 58 (42.3%), [95% CI, 34.1-50.1] versus 51 (41.1%), [95% CI, 32.5-49.8] with a p-value of 0.4 at 6-months and in 110 (80.3%), [95% CI, 73.6-87] versus 99 (79.8%), [95% CI,72.8-86.9] with a p-value of 0.5 at 12-months in experimental and control groups respectively. In the per-protocol analysis suppression was observed in 59 (40.7%), [95% CI, 32.7-48.7] versus 50 (43.1%), [95% CI, 34.1-52.1] with a p-value of 0.7 at 6-months and 81.4%, [95% CI, 75-87.7] versus 77.6%, [95% CI, 70-85.2] with a p-value of 0.2 at 12-months in experimental and control group respectively.

Conclusion: HIV drug resistance testing did not significantly improve virological suppression in patients virologically failing first-line ART in Tanzania.

Keywords: *HIV Drug Resistance; Virological Failure; HIV Drug Resistance Testing*

CU31ID: Antimicrobial Resistance Surveillance in Skin and Soft Tissue Infections: hospital-wide bacterial species and antibiograms to inform management at Bugando Medical Centre, Mwanza, Tanzania

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Background: Skin and soft tissue infections (SSTIs) are common clinical conditions whose presentations can be mild to fatal and require appropriate antimicrobial therapies. However, the growing burden antimicrobial resistance (AMR) is a significantly challenging existing antimicrobial therapy. The Tanzania National Action Plan of AMR (NAP-AMR) is exclusively focused on blood stream infections and urinary tract infections, and therefore, there is an urgent need to include SSTIs in the AMR surveillance for holistic SSTIs patients' management.

Methods: This analytical cross-sectional AMR surveillance study was conducted between January and June 2023, involving 614 patients. Pus samples were cultured on Blood agar and MacConkey agar, followed by identification test and antimicrobial susceptibility testing (AST). The proportion of laboratory confirmed SSTIs, bacteria isolates, and AMR phenotypes were determined. Data analysis was done using WHONET and STATA software.

Results: Of 614 patients enrolled, male accounted for 54.4%, and the median age (IQR) was 34 (14-54) years. Laboratory confirmed SSTIs was 72.5% (445/614), yielding 586 bacterial isolates. Frequently SSTIs types were surgical site infections (25.7%), chronic wounds (19.7%), and traumatic wounds (12.4%). Out of 580 bacteria species analysed in the WHONET software, predominant pathogens were *Staphylococcus aureus* (17.1%), *Escherichia coli* (17.1%), and *K. pneumoniae* (16.0%). Sensitivity of *S. aureus* was 70.1% (cefoxitin/cloxacillin), gentamicin (87.9%) and chloramphenicol (97.1%). Variable sensitivities were observed among Gram negative bacteria to gentamicin (56.9%-81.3%), piperacillin/tazobactam (82.8%-96.6%), meropenem (80.0%-92.9%) and amikacin (86.4%-98.9%); with exception of *Acinetobacter* spp. which showed remarkably low sensitivities (41.1%, 62.7%, 52.0% and 78.7%, respectively). The AMR phenotypes were MRSA (29.4%), ESBL (47.3%) and Carbapenem resistance, CarbR (12.94%). The overall MDR phenotype was 56.6% and was significantly more among inpatients [OR (95%CI); p-value] = 1.86 (1.33-2.59); p-value<0.001.

Conclusion: This is the first large single hospital study on SSTIs AMR surveillance showing a substantial proportion of laboratory confirmed SSTIs with varying AMR phenotypes. Revisiting SSTIs antimicrobial treatment options in this setting, and a need to include SSTIs in the on-going AMR surveillance in Tanzania are reiterated in these findings.

Keywords: *Skin and soft tissue infections (SSTI); AMR; surveillance; MDR*

CU32ID: Incidence, bacteriological patterns and factors associated with surgical site infections among patients undergoing split thickness skin grafting at Bugando Medical Centre, Mwanza, Tanzania

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Background: Surgical site infection (SSI) is the most terrifying complication of the split thickness skin grafting surgeries (STSGS) which can result in the loss of the entire graft. This study reports the incidence of SSI, bacteriological profile, antibiotic susceptibility patterns and factors associated with SSI following STSGS at Bugando Medical Centre.

Methods: This prospective longitudinal study was conducted in surgical wards at BMC involving patients who underwent STSGS between January and June 2023. Wound/pus swabs for culture and susceptibility testing were collected before and after STSGS procedures.

Results: A total of 96 patients with median age [IQR] of 38.4[21.5 - 54.5] years were enrolled. Male sex accounted for 49 (51.0%). Traumatic skin loss, 33(34.4%) was the most common indication for skin graft surgery. About 30.2% (n=29) and 27.1% (n=26) developed clinical and laboratory confirmed SSI respectively. Gram-negative bacteria were predominantly isolated (92.3%; n=24) and exhibited high resistance towards ceftriaxone. Male sex (p=0.021), diabetes mellitus (p=0.009), diabetes mellitus and hypertension (p=0.012), HIV infection (p=0.028), wound size of >100cm^2 (p<0.001), preoperative low haemoglobin of <10g/dL (p<0.001), preoperative wound infection (p=0.008), rank of the surgeon (p=0.04), and the duration of surgery (p<0.001) were significantly associated with SSI after STSGS.

Conclusion: The incidence of surgical site infections after split thickness skin grafting surgeries is high and is caused by pathogens resistant to ceftriaxone. The usefulness of the ceftriaxone as prophylactic antibiotic for STSGS at BMC needs to be re-evaluated.

Keywords: *Skin graft; Surgical site infections; Tanzania*

CU33ID: The Prevalence, factors associated and treatment outcome of symptomatic vaginal candidiasis in non-pregnant women attending outpatient clinics in Mwanza, Tanzania

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Background: Vaginal candidiasis is a prevalent concern for women, affecting approximately 70-75% at least once in their lifetime, with recurrence rates ranging from 6-9%. However, there is a notable scarcity of data regarding its prevalence, contributing factors, and treatment effectiveness in developing nations, highlighting the significance of addressing this knowledge gap to mitigate associated complications.

Methods: A cross-sectional study was conducted from May 2022 to May 2023, focusing on non-pregnant women attending outpatient clinics at BMC, SRRH, and SDDH hospitals. The research employed standardized questionnaires to gather social and clinical data, while high vaginal swabs were collected using aseptic techniques and processed following established laboratory protocols. Data analysis, aligned with the study's objectives, was carried out using STATA version 13, with statistical significance determined at a 95% confidence level (P≤0.05).

Results: Among the 548 participants included in the analysis, the median age was 35 years (range: 28-43). A substantial majority, 65.7%, reported experiencing vaginal candidiasis at least once in their lifetime. Notably, 36.7% of participants had typical symptoms of vaginal candidiasis, and 69.9% practiced vaginal douching. Laboratory-confirmed vaginal candidiasis was prevalent in 24.3% of cases. Women exhibiting symptomatic vaginal candidiasis were seven times more likely to have positive culture results compared to those without candidiasis-related symptoms. Factors associated with vaginal candidiasis included an increase in age (OR 1.04, 95% CI 1.02-1.06, P=0.003), student status (OR 2.9, 95% CI 1.2-6.9, P=0.015), history of antimicrobial use (OR 3.7, 95% CI 2.4-9.7, P=0.0009), and clinical symptoms of vaginal candidiasis (OR 3.1, 95% CI 1.6-5.9, P=0.0001). Approximately 20% of women continued to experience symptoms after a standard full dose antifungal treatment. Striking was the prevalence of prior diagnoses with vaginal candidiasis among patients with persistent vaginal discharge.

Conclusion: The study sheds light on the substantial burden of vaginal candidiasis among non-pregnant women. Age, student status, antimicrobial history, and clinical symptoms were identified as associated with candidiasis. The persistence of symptoms post-treatment emphasizes the need for further investigation into treatment efficacy and potential antifungal resistance. Addressing this knowledge gap is crucial for refining approaches to managing and preventing vaginal candidiasis in this population.

Keywords: *Vaginal candidiasis; Non-pregnant women; Treatment outcome*

CU34ID: Bacterial contamination and associated factors of Escherichia coli and Salmonella spp. on raw and edible non-peelable fruits and vegetables from local markets in Mwanza City, Tanzania: a cross sectional study

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Background: The prevalence of bacterial contamination of fruits and vegetables is higher in developing countries leading to increased risk of contracting food borne infections. Previous studies focused on the microbial colonies that reside inside the fruit. Here we report the bacterial contamination and associated factors of *Escherichia coli* and *Salmonella* spp. on non-peel able fruits and vegetables in Mwanza city, Tanzania.

Methods: A cross sectional study involving 240 samples of fruits and vegetables from local markets collected from July to August 2023. A structured data collection tool was used to gather preliminary information from the sellers. Detection of pure colonies of *Escherichia coli* and *Salmonella* spp. was done using established standard operating procedures in microbiology laboratory. Data was analysed by STATA version 15.

Results: A total of six local market were involved with majority of samples (fruits or vegetables) obtained from Mirongo market 72 (30.0%). Majority of vendors were female 187(77.9%), obtain their fruits and vegetables from large scale vendors 150(62.5%), transport them by van 104(43.3%) and display them on the table 176(73.3%). A total of eight and four types of vegetables and fruits respectively, were involved in the study with equal contribution on the sample size 20(8.3%). Overall prevalence contamination was 31(12.9%) with the average prevalence for each pathogen being 11(4.6%) for *Escherichia coli* and 20(8.3%) for *Salmonella* spp. It was noted that fruits sold at Mirongo market had low odds of being contaminated (OR 0.14, 95% CI 0.02-0.84, P=0.031), however fruits handled by the vendor with no formal education (OR 4.54, 95%CI 1.6-12.85, P=0.004), stored in water (OR 6.57,95% 1.74-24.86,P=0.006) and those stored in plastic container (OR 5.11,95% 1.58-16.51, P=000.6) were associated with contamination.

Conclusion: The public health sector of Tanzania should conduct routine safety assessments of locally vended fruits and vegetables, inspect the selling and storage premises of marketplaces, and regularly perform health checkups on personnel vendors involved in the market sales business. This will help to ensure the safety of food products sold in markets and reduce the risk of foodborne illness.

Keywords: *Vegetables; Non-peeled fruits; Escherichia coli; Salmonella* **spp.***; contamination; Mwanza*

CU35ID: Non-prescribed antibiotics for respiratory tract infections like symptoms in the community pharmacies and accredited drug dispensing outlets in Mwanza city, Tanzania: A simulated client approach

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Background: Dispensing antibiotics without prescription is a major contributing factor to antimicrobial resistance particularly in Low- and middle-income countries where community drug outlets are considered as convenient and first contact of health care services. The purpose of this study was to determine the non-prescribed antibiotic dispensing practices for respiratory tract infection like symptoms in community pharmacies and accredited drug dispensing outlets in Mwanza city, Tanzania.

Method: This study which used simulated client method was conducted in Nyamagana and Ilemela districts in Mwanza region, Tanzania between 2nd and 30th March 2021 involving 366 community drug outlets. During data collection mystery clients presented with symptoms of respiratory tract infections such as cough, sore throat, and lack of food taste. Immediately after leaving the drug outlet, the MCs were required to record the interaction using Epicollect5 software. Descriptive analysis was done using STATA version 15.

Results: A total of 366 community pharmacies (n=109) and accredited drug dispensing outlets (ADDOs) (n=257) were visited by mystery clients (MCs). Nyamagana district comprised 147 and 76 ADDOs and community pharmacies respectively while Ilemela comprised 110 and 32 ADDOs and community pharmacies respectively. Overall dispensing antibiotics without prescription was 237(64.8%). The commonest antibiotics dispensed were ampicillin/cloxacillin (ampiclox) 134 (49.45%) and amoxicillin 91 (33.58%). As per standard treatment guidelines ampiclox was dispensed as first line antibiotic for the suspected respiratory tract infections in 50.72% and 45.31% in ADDOs and community pharmacies respectively. Out of 134 MCs who were given ampiclox, only 12 (8.9%) were provided with right usage instruction.

Conclusion: Dispensing antibiotics without prescription was high, though half of the drug dispensers could adhere to the 1st line standard treatment guideline of respiratory tract infections of but could not provide the proper usage instructions. There is a need for sustained antibiotic stewardship programs among dispensers in community drug outlets in order to control the threat of antimicrobial resistance.

Keywords: *Upper respiratory tract infection; Drug dispensers; Antimicrobial resistance; Inappropriate dispensing of antibiotics*

CU36ID: Chronic pulmonary aspergillosis among smear negative tuberculosis patients in Mwanza, Tanzania

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Background: Chronic pulmonary aspergillosis (CPA) and tuberculosis are both progressive and debilitating parenchymal lung diseases with overlapping risk factors, symptomatology and radiological findings that often results in misdiagnosis of either disease. Therefore, this study aimed at investigating the prevalence and pattern of *Aspergillus* species causing CPA among smear negative tuberculosis patients in Mwanza Tanzania.

Methods: A cross sectional hospital-based study was conducted from May to August 2022. Sputum and blood samples were processed for detection of CPA. Data was analysed by using a STATA version 13.0.

Results: This study involved 122 smear-negative tuberculosis patients, averaging 49.5 years (SD 17.6). Slightly majority were male (58.2%), and roughly two-thirds were married (68.9%), with only 10.7% (13) reporting smoking history. About 44.3% (54) were hospitalized for a median of 5 days (range: 3-10). Prior TB diagnosis was in 22.1% (27) cases. *Aspergillus* spp. growth was found in 29.5% (36), primarily *Aspergillus fumigatus* (83.3%). Nine patients had multiple *Aspergillus* spp., and three had mixed *Aspergillus* spp. and *Candida* spp. growth. Regarding serology, 17% (21) had *Aspergillus* spp. antibodies; 81% (17) with positive antibodies also had culture growth. Of the 101 with negative antibody results, 81.2% (82) showed no culture growth. A total of 34 were diagnosed with CPA due to *Aspergillus fumigatus*, via culture or antibody testing, or both. Among these, 67.6% (23) were male, aged 13 to 82. Seven were smokers, eight had prior pulmonary TB diagnoses. Notably, 20 were HIV negative. All presented with coughing symptoms, with ten reporting haemoptysis. Cough duration varied from 14 to 365 days, seven had fever, and 24 recently used antibiotics for chest-related symptoms.

Conclusion: This study sheds light on the prevalence and characteristics of *Aspergillus* spp. in smear-negative tuberculosis patients. A significant proportion exhibited Aspergillus growth, particularly *Aspergillus fumigatus*, indicating a potential co-infection and highlighting the clinical significance of identifying Aspergillus infections in this population. The presence of Aspergillus antibodies correlated with positive culture results, emphasizing their diagnostic relevance. Routine screening for *Aspergillus* spp. in smear-negative tuberculosis cases, especially in TB endemic region is highly recommended.

Keywords: *Chronic pulmonary Aspergillosis; Aspergillus fumigatus; TB coinfection; Smear negative tuberculosis*

CU37ID: Whole genome sequencing unravels the genetic determinants of colistin resistance in multi-drug resistant Klebsiella pneumoniae isolated from patients admitted in the ICU of a tertiary care hospital in Kampala, Uganda.

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Background: Multidrug resistance (MDR) and extensive drug resistance (XDR) among gram-negative bacteria is of a particular concern because it has exhausted all standard therapeutic options. This has necessitated clinicians to reconsider colistin, an "old sort" antibiotic which was deemed toxic for clinical use. Colistin is now used as the last-line antibiotic for treatment of Carbapenem resistant *Klebsiella pneumoniae* infections. Unfortunately, following its increased use or misuse in human and animals, swift resistance towards colistin by *K. pneumoniae* has been reported in different parts of the world. Despite this, studies on colistin resistance in *K. pneumoniae* in East Africa remain limited. The study aimed at investigating the genetic determinants of colistin resistance in *K. pneumoniae* isolated from patients in a tertiary care hospital in Kampala, Uganda.

Methods: This was a descriptive cross-sectional study which used colistin resistant *K. pneumoniae* isolates obtained from rectal swabs of patients admitted to the Mulago Hospital ICU. DNA isolation was performed using CTAB method. Genomic library preparations were carried out using Nextera DNA XT library preparation kit. Sequencing was performed on illumina Novaseq6000 platform. In-silico sequence data analyses were done using established web-based bioinformatics tools.

Results: The sequence analysis of the commonly known genes involved in colistin resistance revealed several non-synonymous mutations in nucleotide sequences of *pmr*A, *pmr*B, *pho*P, *pho*Q and *mgr*B genes. Insertion transposase genes for the insertion sequences IS1 and IS5 which are highly implicated in colistin resistance via modification or the inactivation of *mgrB* gene were identified in all isolates and were located in the chromosomal DNA at different genomic positions. No plasmid-borne mcr genes were detected. More so, the strains harboured numerous multidrug resistant genes.

Conclusion: This study underscores the need for genomic surveillance of *K. pneumoniae* strains to limit further spread of colistin resistance genes to avert the potential risk of pan-drug resistance. And the use high throughput sequencing is imperative.

Keywords: *Whole genome sequencing; Multi-drug resistance; Extensive drug resistance; Pan-drug resistance; Colistin resistance*

CU38ID: Isolated Renal and Urinary Tract Aspergillosis: A Systematic Review

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Background: Aspergillosis localised to the kidneys and the urinary tract is uncommon. We conducted a comprehensive systematic review to evaluate risk factors and clinical outcomes of patients with isolated renal and genito-urinary tract aspergillosis.

Methods: We systematically searched Medline, CINAHL, Embase, African Journal Online, Google Scholar, and the Cochrane Library, covering the period from inception to August 2023 using the key terms "renal" OR "kidney*" OR "prostate" OR "urinary bladder" OR "urinary tract*AND "aspergillosis" OR "aspergillus" OR "aspergilloma" OR "mycetoma". We included single case reports or case series. Review articles, guidelines, meta-analyses, animal studies, protocols, and cases of genitourinary and /or renal aspergillosis occurring as a part of disseminated disease were excluded.

Results: a total of 91 renal and urinary aspergillosis cases was extracted from 76 publications spanning 1925 to 2023. Among the participants, 79 (86.8%) were male, with a median age of 46 years. Predominantly, presentations consisted of isolated renal infections (74 instances, 81.3%), followed by prostate (5 cases, 5.5%), and bladder (7 cases, 7.7%) involvement. *Aspergillus fumigatus* (42.9%), *A. flavus* (9.9%), and *A. niger/glaucus* (1.1% each) were isolated. Underlying risk factors included diabetes mellitus (29.7%), HIV (12.1%), haematological malignancies (11%), and liver cirrhosis (8.8%), while common symptoms encompassed flank pain (36.3%), fever (33%), and lower urinary tract symptoms (20.9%). An autopsy was conducted in 8.8% of cases. Diagnostic work-up involved histopathology (70.5%), renal CT scans and urine microscopy and culture (52.6% each), and abdominal ultrasound (17.9%). Treatments included amphotericin B (34 cases, 37.4%) and azole-based regimens (29 cases, 31.9%). Nephrectomy was performed in 16 of 78 renal cases (20.5%). All-cause mortality was 24.4% (19 cases). No significant mortality rate difference was observed among antifungal regimens (p=0.739) or nephrectomy status (p=0.8).

Conclusion: Renal and urinary aspergillosis is an important cause of morbidity and mortality, particularly in immunocompromised and diabetic patients. While varied treatment strategies were observed, mortality rates showed no significant differences based on treatments or nephrectomy status. Further research is needed to refine diagnostics, optimise treatments, and enhance awareness among clinicians for early detection and management.

Keywords: *Isolated renal aspergillosis; Genito-urinary tract; clinical presentation; risk factors; treatment outcomes*

CU39ID: Antibiotic resistance and bacteriological profile of pathogens causing neonatal sepsis in Tanzania. A systematic review with meta-analysis

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Background: Neonatal sepsis is the leading cause of neonatal mortality in Low- and Middle-Income countries (LMICs), where 99% of global neonatal mortality occurs. WHO's antibiotic treatment guidelines have not kept pace with the exponential rise of antimicrobial resistance in sub- Saharan Africa, potentially exacerbating neonatal sepsis deaths. We performed a systematic review and meta-analysis to determine bacteriological profile, antibiotic susceptibility of pathogen and outcome of neonatal sepsis in Tanzania.

Methods: A systematic literature search on online databases such as PubMed/ Medline, Embase, Cochrane, google scholar and web of science for peer reviewed publications from year 2010 until May 2023 was done. The data were meta-analysed using STATA version 14 and risk ratios (RR) was used as the measure of the effect size with 95% CI.

Results: A total of 14 studies with 4077 neonates was included in the review. Overall, the pathogens with the most resistance were *Staphylococcus haemolyticus* (24%), *Staphylococcus aureus* (9.5%) and *Klebsiella pneumoniae* (7.9%). The overall mortality rate was 18%. The antibiotics used as second line were slightly more susceptible than the first line antibiotics: ampicillin and ciprofloxacin (RR= 1.195, 95%CI 1.121 - 1.269), ampicillin and cefotaxime (RR= 1.257, 95%CI 1.136 - 1.378) and ampicillin and ceftriaxone (RR= 1.250, 95%CI 1.184 - 1.316). We also noted comparable susceptibility between the antibiotics of the specific regimen: ampicillin and gentamicin (RR= 1.062, 95%CI 1.003 - 1.121), ceftriaxone and cefotaxime (RR= 1.052, 95%CI 0.866 - 1.237), meropenem and amikacin (RR= 1.481, 95%CI 1.241 - 1.722) and meropenem and piperacillin tazobactam (RR= 0.771, 95%CI 0.598 - 0.944). There was considerable heterogeneity among all analyses which might have resulted from the different regions where the studies were conducted and the majority of studies were from tertiary hospital settings, which may overestimate the burden of AMR.

Conclusion: There is a high prevalence of AMR and neonatal sepsis mortality rate. There is no statistical significance between resistance in the first line regimen of ampicillin and gentamicin with comparable performance of antibiotics in the second line regimen. There is a need for revisiting the antibiotic guidelines of the management of neonatal sepsis in Tanzania especially in tertiary hospitals.

Keywords: *Antimicrobial resistance; Neonatal sepsis; Meta-analysis; Gram-negative bacteraemia; Gram-positive bacteraemia*

CU40ID: Cross sectional study on Urinary candidiasis among pregnant women in Zanzibar, Tanzania

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Background: Urinary tract infections (UTIs) pose a significant global health challenge, particularly for vulnerable populations such as pregnant women, given the associated morbidity. This study aimed to evaluate Candida species prevalence, antifungal susceptibility, and candiduria factors in pregnant women at Mnazi Mmoja Referral Hospital, Zanzibar, Tanzania.

Methods: This cross-sectional hospital-based study was conducted from September 2022 to 2023. Mid-stream clean catch urine was collected and processed in accordance with established standard operating procedures in the microbiology laboratory. Antifungal susceptibility testing was performed following CLSI guidelines. Data were analysed using STATA version 15 according to study's objectives.

Results: A total of 398 pregnant women participated, with a median age of 28 [IQR: 24-32] years. The median gestational age was 28 [IQR: 19-34] weeks. A total of 94 participants (23.38%) presented with clinical signs and symptoms consistent with UTI. The overall prevalence of candida urinary tract infection was 9.05% (n=36). The predominant species identified were *C. albicans* (38.89%, n=14), followed by *C. tropicalis* (36.11%, n=13), and *C. glabrata* (25.00%, n=9). Non-albicans Candida species (NAC) accounted for 61.11% (n=22) of cases, while *C. albicans* constituted 38.89% (n=14).

A 35.7% and 28.6% of *C. albicans* demonstrated sensitivity to fluconazole at MIC of 0.06ug/ml and voriconazole at MIC of 0.125ug/ml, respectively. All *C. tropicalis* were resistance to fluconazole at an MIC of 0.06ug/ml. A 44.4% and 88.9% of *C. glabrata* were sensitive to fluconazole and itraconazole at an MIC of 0.06ug/ml respectively. None of the NAC species demonstrated resistance to voriconazole across all concentrations tested. Increase in gestation age (p=0.030), having clinical symptoms (p=0.005) and increase number of household members (p=0.025) were factors associated with candiduria among pregnant women.

Conclusion: There is a notable prevalence of candida urinary tract infections, primarily attributed to *C. albicans*, in pregnant women, with an overall occurrence rate of 9.1%. Different Candida species displayed varying degrees of susceptibility to antifungal agents. There is a crucial need for customized strategies in both management and prevention of candida UTI for patients at risk. Further investigations and interventions are imperative to gain a deeper understanding and effectively management.

Keywords: *Candida urinary tract infections; Clinical symptoms; antifungal susceptibility; Non-albicans Candida* **spp.**

CU41ID: Prevalence, Candida species diversity, and antifungal susceptibility of Candida vaginitis among pregnant women: A cross sectional study in Zanzibar, Tanzania

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Background: Vulvovaginal candidiasis ranks among primary concerns voiced by pregnant women seeking care at antenatal clinics, particularly during their third trimester. This study presents findings on occurrence, types of Candida, and the susceptibility to antifungal agents for VVC in symptomatic pregnant women attending the antenatal clinics at Mnazi Mmoja Hospital in Zanzibar, Tanzania.

Methods: The cross-sectional study was conducted from September - October 2022. High vaginal swab was collected from symptomatic pregnant women, properly transported and processed in accordance with established standard operating procedures in the microbiology laboratory. Antifungal susceptibility testing was performed following CLSI guidelines. Data were analysed using STATA version 15 according to study's objectives.

Result: A total of 384 pregnant women, with a median age of 28 years (IQR: 24-32), were included. Mostly participants, 74.7% (n=287), had attained a secondary education, and 96.1% (n=373) were married. The most common presenting symptoms were curd-like discharge, reported by 42.9% (n=162), followed by odour, noted by 31.3% (n=120).

The overall prevalence of VVC was 42.45% (n=163). The most prevalent species identified was *C. albicans*, at 22.14% (n=85), while the least common was *C. krusei*, at 1.56%. *C. albicans*, 32.94% were sensitive to fluconazole at 0.06ug/ml, while 20% showed sensitivity to clotrimazole at 0.0075ug/ml. *C. tropicalis*, 67.57% were sensitive to fluconazole at 0.125ug/ml, and 86.49% were sensitive to itraconazole at 0.06ug/ml. For *C. glabrata*, 80% and 62.86% were sensitive to voriconazole, and itraconazole at 0.06ug/ml, respectively. Only 33.33% of *C. krusei* exhibited sensitivity to both fluconazole and itraconazole at 0.06ug/ml.

Conclusion: On average, 40% of symptomatic pregnant women, predominantly presenting with curd-like discharge and odour, are diagnosed with VVC, primarily attributed to *Candida albicans*. The susceptibility testing results emphasize that voriconazole and fluconazole exhibit superior effectiveness when compared to itraconazole and clotrimazole across various *Candida* species. These findings emphasize the critical need for prompt and precise VVC diagnosis in pregnant women, especially in resource-limited settings. Furthermore, the identified susceptibility patterns highlight the potential for personalized antifungal treatment approaches. Ongoing research and surveillance efforts are imperative to monitor shifts in Candida species prevalence and antifungal resistance trends.

Keywords: *Symptomatic pregnant women; Vulvovaginal Candidiasis; Susceptibility testing; Timely and accurate diagnosis; Tailored antifungal treatment*

CU42ID: Extended-spectrum beta-lactamases and carbapenemase-producing Gram-negative bacteria contaminating inanimate hospital surfaces at Magu District Hospital in Mwanza, Tanzania.

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Background: Inanimate hospital surfaces contaminated by extended-spectrum beta-lactamase and carbapenemase-producing Gram-negative bacteria (ESBL-GNB and CR-GNB) act as potential exogenous sources of healthcare-associated infections (HCAIs). Prevalence, bacteria species, and their susceptibility towards non-beta-lactam antibiotics are well documented at tertiary hospitals whereas limited is known at district hospitals. For that reason, this study aimed to determine the prevalence, bacteria species, and their susceptibility towards non-beta-lactam antibiotics of ESBL-GNB and CR-GNB contaminating inanimate hospital surfaces at Magu District Hospital in Mwanza Tanzania.

Methods: This cross-sectional hospital-based study was conducted between May and August 2023. Inanimate surfaces were swabbed by using moistened sterile swabs. Swab samples were transported in Stuart transport media to the Microbiology laboratory for processing. MacConkey agar plates supplemented with cefotaxime 2µg/ml (MCA-C) and meropenem 1µg/ml (MCA-M) were used for the isolation of ESBL-GRN and CR-GNB respectively. The disk combination methods were used for phenotypic confirmation of ESBL-GNB and CR-GNB. Matrix-assisted laser desorption ionization on Vitek MS was used for the identification of bacteria species. Data was analysed by STATA version 15.0.

Results: A total of 314 swabs were collected from patients' beds (n=194), wards' floors (n=72), hand-washing sinks (n=24) and doorknobs (n=24). About 28.9% (91/314) of swab samples had positive growth on MCA-C and a total of 99 bacteria species were isolated. Out of 37 Enterobacterales, 31 (83.8%) were confirmed as ESBL-GNB with the predominance of *E. aerogenes* (32.3%, 10/31). On the other hand, 55 (17.5%) out of 314 swabs had positive growth on MCA-M and a total of 62 bacteria species were isolated. About 83.9% (58/62) were positive phenotypes for carbapenemase production with the predominance of *Acinetobacter* spp., (68.9%, 40/58). Patients' beds and wards' floors were highly contaminated by both ESBL-GNB and CR-GNB.

Conclusion: Contamination of inanimate hospital surfaces by ESBL-GNB and CR-GNB is unacceptably high at Magu District Hospital in Mwanza, Tanzania. Therefore, we recommend thorough and routine cleaning of the hospital environment to minimize the risk of outbreaks of HCAIs by multidrug-resistant bacteria.

Keywords: *Inanimate hospital surfaces contamination; Extended-spectrum beta-lactamase; Carbapenemase-producing Gram-negative bacteria*

CU43ID: Prevalence and susceptibility patterns of bacteria colonizing the external ocular surfaces of patients undergoing ocular surgeries at BMC in Mwanza, Tanzania.

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Background: Surgical sites infections accounts for about 15% of all nosocomial infections leading to increased mortality, morbidity, cost of treatment and prolonged postoperative hospital stay. The predominant pathogens causing SSI are often the normal microbial flora colonizing the sites, antibiotic prophylaxis decreases the risk of SSI. However, the use of antibiotic without guidance of culture and sensitivity leads to poor prophylactic outcomes and increased risk to AMR. Predominance of Gram-positive bacteria such as *S. aureus*, CoNS, and *Streptococcus* spp. causing SSI after ocular surgeries has been reported but at Bugando Medical Centre (BMC) in Mwanza, Tanzania.

Methods: This was a hospital based cross sectional study involving a total of 148 ocular samples from patients undergoing ocular surgeries at BMC from May to August 2023. A structured questionnaire was used to collect participant's information. Ocular samples were enriched in BHI then cultured onto BA and MCA; identification of bacteria was based on conventional biochemical tests. Data was entered into the Microsoft excel sheet for cleaning and coding, then analysed using a STATA version 15.

Results: The study participants had a median age of 61[IQR 1-89] years. A total of 81.8% (121/148) had ocular colonization with the predominance of *S. epidermidis* [39.9%(n=59)] followed by *Pseudomonas aeruginosa* [`17.6% (n=26)], *S. aureus* [15.5%(n=23)] and *Klebsiella pneumoniae* [14.2% (n=21)]. High proportions of resistance were observed among gram positive bacteria towards cotrimoxazole 82.6% (76/92), erythromycin 66.3% (61/92), tetracycline 59.8% (55/92) and ciprofloxacin 46.7% (43/92). This study isolated 52 Gram-negative bacteria which showed high resistance towards amoxicillin/clavulanic acid 76% (18/25) and ceftriaxone 45.1% (23/51, high proportion of MDR was observed at 44.6% (n=66). However, low sensitivity was notable for gentamicin, linezolid and piperacillin-tazobactam.

Conclusion: Over 80% of all patients undergoing ocular surgical procedures are being colonized by bacteria in their external ocular surfaces with a predominance of *S. epidermidis, P. aeruginosa,* S. *aureus* and *K. pneumoniae* which have higher sensitivities toward gentamicin, linezolid and piperacillin tazobactam.

Keywords: *SSI; AMR*

CU44ID: Biomarkers of Neonatal Sepsis: A Guiding and Early Diagnostics Tool for Neonatal Sepsis in Sub Saharan Africa

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Background: The diagnosis of neonatal sepsis is challenging, and inflammatory markers are widely used to guide clinical decision making and management. In the present study we determined the use of serial quantitative C-reactive protein (CRP) and White Blood Cells count (WBC) in the prediction of microbiologically confirmed sepsis in neonates admitted at Bugando Medical Centre, Mwanza, Tanzania.

Methods: A total of 112 neonates with clinical diagnosis of sepsis were enrolled between February and May 2023. Demographic and clinical data were collected using standardized data collection tool. Blood culture and susceptibility testing was performed. Serial blood specimens for Complete Blood Count, quantitative CRP were done at admission, 48hours and 90hours.

Results: The median age of the enrolled neonates was 1 [IQR 1-4] days, with the majority (94%) aged ≤3days. Female neonates were 58 (51.2%). Out of these neonates, 30(26.8%) were laboratory confirmed to have bacterial neonatal sepsis. Gram negative bacteria 24/30 (80%) formed the majority of the isolated bacteria with *Klebsiella pneumoniae* being the most frequently isolated bacteria. The median CRP levels (1st and 2nd) of neonates with laboratory confirmed sepsis was significantly higher than the median of those with negative culture (18.8 vs 3.6, p=0.003). No significant association was observed between laboratory confirmed sepsis and WBC both total and differential. As CRP increases, the odds of culture positive significantly increased (OR 1.04, 95%CI: 1.02-1.07, p<0.001).

Conclusion: In place where blood culture is limited neonates having clinical features of sepsis with high CRP levels should urgently be initiated on appropriate management in order to reduce morbidity and mortality associated with neonatal sepsis.

Keywords: *C reactive protein; Neonatal sepsis; WBC*

CU45ID: Global emergence of Candida auris: First outbreaks in Germany

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Background: The globally distributed human fungal pathogen *Candida auris* is known for a rapid development of antifungal drug resistance and resilience to environmental stress. In contrast to most other *Candida* species, *C. auris* can easily be transmitted between individuals leading to hospital outbreaks which are hard to manage. In contrast to many other countries, the number of reported *C. auris* infections is still low in Germany. We collected fungal isolates and patient data from every *C. auris* case reported to the German National Reference Center for Invasive Fungal Infections (NRZMyk).

Methods: Isolates were genetically and phenotypically characterized to analyse antifungal drug resistance and its underlying mutations. Furthermore, we focused on the diversity between closely related isolates from patient-to-patient transmission events. Isolates from a transmission event were further analysed regarding strain-specific genetic mutations. Antifungal drug susceptibility was tested with broth microdilution according to EUCAST.

Results: Between 2015 and 2020 only 6 cases were reported to the NRZMyk. However, this number increased up to over 100 cases in 2023. Non outbreak related clinical data were available for 35 cases. 19 of them could be assigned to colonization events and 16 to infections. The majority of *C. auris* primary isolates belonged to clade I. More than 80% (28/35) had fluconazole MICs of ≥ 32µg/ml. Except one isolate, all strains were susceptible to echinocandins. MICs for amphotericin B were between 0.5 and 2 µg/ml. We also analysed ten serial isolates from a transmission event in a Germany tertiary care hospital which included four patients. WGS analysis revealed that 10 isolates obtained from these patients derived from one ancestor. Interestingly, four of the strains were susceptible to fluconazole while the other isolates were resistant. In addition, we recorded another ongoing outbreak event with over 30 patients affecting 4 university hospital units.

Conclusion: We observed a dramatically increase of *C. auris* cases in the last years. Increased awareness for colonization and infection with *C. auris* is required for a timely development of appropriate strategies regarding containment and surveillance of *C. auris* in Germany. This will also contribute to a better understanding of patient-to-patient transmissions.

Keyword: *Candida auris; Fluconazole; Amphotericin*

CU46ID: Seropositivity of *Brucella melitensis* and *Brucella abortus* among Pregnant Women Attending Antenatal Clinics in Unguja Zanzibar: A cross sectional study

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Background: Brucellosis is a serious public health issue that causes significant morbidity in both humans and animals. Pregnant women with Brucellosis rare at increased risk of having unfavourable pregnancy outcomes which include including miscarriage, stillbirth, premature labour, and low birthweight. Despite being widespread in tropical areas, there is little information on the seroprevalence of *Brucella* spp. among pregnant women contributing to little public awareness of this disease. This study presents the seroprevalence of *Brucella melitensis* and *Brucella abortus* antibodies and its associated factors among pregnant women in Unguja, Zanzibar.

Methods This was a cross sectional study involving 270 pregnant women attending antenatal clinics in Unguja Zanzibar between June and July 2023. Data were collected using a structured questionnaire. *B. melitensis* and *B. abortus* antibodies were detected using slide agglutination test (EUROCELL, UK). Descriptive data analysis was done using STATA version 15.

Results: The mean age of study participants was 26.9 years (±5.7) with the majority of participants being married 245/270(90.7%). A total of 236/270(87.4%) participants were from urban. The seroprevalence of *B. melitensis* and *B. abortus* antibodies was 4.4% and 5.2% respectively.

Conclusion: Less than one tenth of pregnant women in Unguja Zanzibar are Brucella spp. seropositive, the seroprevalence is significantly low compared to studies from Tanzania mainland.

Keywords: *Brucella melitensis; Brucella abortus; Pregnant women*

CU47ID: Prevalence of Hepatitis B and Hepatitis C virus and associated Factors among Pregnant Women attending Antenatal Care Clinics in Unguja, Zanzibar

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Background: Hepatitis B Virus (HBV) and Hepatitis C virus (HCV) infections account for up to 80% of all cases of hepatocellular carcinoma worldwide. As of 2019, there were 354 million people worldwide infected with HBV and an estimated 58 million people with chronic HCV infection. However, there are limited data on the magnitude of HBV and HCV among pregnant women attending different antenatal clinics in Unguja, Zanzibar hindering its control efforts. Therefore, this study determined the prevalence of HBV and HCV and associated factors among pregnant women attending to antenatal care clinics in Unguja, Zanzibar.

Methods: A hospital based cross sectional study involved 270 pregnant women attending antenatal care clinics in Unguja, Zanzibar was conducted between May and July 2023. Data were collected using pretested structured data collection tool. Detection of hepatitis B surface antigen (HBsAg) and anti-HCV antibodies were done using immuno-chromatographic test. Descriptive data analysis was done using STATA version 15.

Results: The Mean (±SD) age of participants was 26.9(±5.7) years, the majority of them were married 245(90.7%) and from urban 236(87.41%). The prevalence of HBsAg positivity among the pregnant women was 2.96% (8/270) [95% CI: 1.5%-5.2%] while all were negative for anti-HCV antibodies. Being HIV positivity (OR: 22, 95% CI: 2.7-190.5, P=0.001), history of syphilis (OR: 12, 95% CI: 1.05- 156.2, P=0.046) were significantly associated with HBsAg positivity.

Conclusion: Active hepatitis B infection among pregnant women in Unguja-Zanzibar is of intermediate endemicity according to WHO classification of hepatitis B infection and is significantly with HIV positivity and syphilis disease. Routine screening of HBsAg coupled with the vaccination of those at risk should be improved to prevent HBV infections and associated complications.

Keywords: *HBV; HCV; Pregnant women; Zanzibar*

CUNCD: NON-COMMUNICABLE DISEASES AND THEIR PREVENTION

CU01NCD: Prevalence of Gestational Diabetes Mellitus and associated risk factors among women attending antenatal care in health facilities in Unguja, Zanzibar

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Background: The global burden of gestational diabetes mellitus (GDM) has risen from 16% (2016) to 28% (2021), while sub-Saharan Africa, including Tanzania's mainland, has witnessed a rise from 18% (2014) to 28% (2020). The complications of GDM include obstructed labour, perinatal and maternal mortality, pre-eclampsia, foetal macrosomia, foetal organomegaly, and birth trauma. There is a paucity of data on the burden of GDM and associated risk factors in Zanzibar. It is not known how the globally known GDM risk factors such as advanced maternal age, obesity, and a family history of diabetes operate among Zanzibarian, nor how their culturally diverse lifestyle affects the burden of GDM. The objective of this study was to determine the prevalence of GDM and associated risk factors among women attending antenatal care in Unguja, Zanzibar.

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

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

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

Keywords: *GDM; Pregnant women; Zanzibar; ANC*

CU02NCD: Frequency, mortality, and risk factors among patients admitted with stroke in the medical ward at Kilimanjaro Christian Medical Centre, Kilimanjaro, Tanzania: A Retrospective Observational study

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Background: Worldwide, the burden of stroke has increased in recent years, particularly in low and middle-income countries. In this study we aim to determine the number of stroke admissions, and associated co-morbidities, to a referral hospital in Northern Tanzania.

Methods: This was a retrospective observational study, conducted at a tertiary referral hospital, Kilimanjaro Christian Medical Centre (KCMC) within the Northern zone of Tanzania. The study included adults aged 18 and above, who were admitted to the medical wards from 2017 to 2019. Primary outcome was the proportion of stroke patients admitted at medical ward at the Kilimanjaro Christian Medical Centre, and the secondary outcome was clinical outcome such as mortality. We conducted a retrospective audit of medical records from 2017 to 2019 for adult patients admitted into the medical ward at the KCMC. Data extracted included demographic characteristics, previous history of stroke, and outcome of the admission. Factors associated with stroke were investigated using logistic regression.

Results: Among 7,976 patients admitted in medical ward between 2017 and 2019, 972 (12.2%) were stroke patients. Trends showed an increase in patients admitted with stroke over the 3 years with 222, 292, and 458 for 2017, 2018, 2019 respectively. Of the stroke patients, 568 (58.4%) had hypertension while 167 (17.2%) had Diabetes mellitus. The proportion of stroke patients aged 18-45 years increased from 2017 (n=28, 3.4%) to 2019 (n=40, 4.3%). The in-hospital mortality related to stroke was 229 (23.6%) among 972 stroke patients, and females had 50% higher odds of death compared to male patients (OR:1.5; CI: 1.30,1.80).

Conclusion: The burden of stroke on individuals and health services is increasing over time, which reflects a lack of awareness on the cause of stroke and effective preventive measures. Prioritizing interventions directed towards the reduction of non-communicable diseases and associated complications, such as stroke, is urgently needed.

Keywords: *Stroke; Hospital; Patients; Trends; Mortality*

CU03NCD: Periconceptual Folic Acid Supplementation Uptake, Initiation, and Associated Factors Among Mothers of Infants with Congenital Anomalies Attending Bugando Medical Centre in North-Western, Tanzania

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Background: Folate and iron deficiency during pregnancy are risk factors for congenital anomalies, anaemia, preterm delivery, low birth weight, and may contribute to poor neonatal health and increased maternal mortality. The World Health Organization recommends supplementation of folic acid and iron for all pregnant women to prevent such complications.

Methods: This was an analytical cross-sectional survey which employed a mixed method approach in data collection. Quantitative data was collected using structured questionnaires while qualitative data was collected using in-depth interviews and focus group discussions.

Results: Approximately 49% of the participants fell within the age range of 18 to 24 years, with a median age of 25. The majority (76%) of the participants reported using folic acid during pregnancy while only 10.9% used the supplements before pregnancy. Those who utilized folic acid during pregnancy had a notably reduced likelihood of having children with congenital heart diseases, neural tube defects, and oral facial clefts with a 14% (aPR = 0.86, 95% confidence interval [CI] = 0.14 to 0.98), 52% (aPR = 0.48, 95% CI = 0.16 to 0.81) and 15% (aPR = 0.85, 95% CI = 0.27 to 0.93) lower chance as compared to those who did not use folic acid during pregnancy respectively.

Conclusion: The protective effect against congenital anomalies offered by periconceptual Folic Acid supplementation during pregnancy is very significant among study participants. This calls for need to design targeted interventions to increase the knowledge on the importance of using folic acid and adherence to the dosage of folic acid among women of reproductive age and hence reduce the risk of congenital anomalies problems in our country.

Keywords: *Folic acid; Periconceptual; Determinants; Uptake; Congenital anomalies*

CU04NCD: Causes and consequences of persistent anaemia after 6 months of antiretroviral therapy in Tanzania: an observational comparative cohort study

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Background: Anaemia is common among people living with HIV (PLWH), particularly in Africa. Older antiretroviral therapy (ART) regimens may have contributed to this anaemia. Anaemia outcomes for PLWH on modern ART regimens are not well documented. We conducted an observational comparative cohort study to determine the outcomes and predictors of anaemia after ART initiation in Tanzania.

Methods: We enrolled and followed ART-naïve PLWH and HIV-uninfected community controls at three clinics in Mwanza, Tanzania. We grouped participants into four longitudinal categories based on haemoglobin concentration measured at baseline and six months after ART initiation (normal, resolved anaemia, incident anaemia, persistent anaemia) and followed them for 24 months. We performed logistic regression analyses to determine factors associated with persistent anaemia.

Results: There were 991 study participants (494 PLWH, 497 HIV-uninfected). Prevalence of anaemia at baseline was 49.4% for PLWH compared to 15.1% for HIV-uninfected controls. After six months of ART, 33.9% of PLWH had persistent anaemia and 9.9% had incident anaemia for PLWH, compared to 12.6% and 9.6% for HIV-uninfected controls. Female gender (adjusted odds ratio (aOR): 2.62; 95% CI: 1.91, 6.75) and low income (aOR: 3.10; 95% CI: 1.36, 7.20) were strong predictors of persistent anaemia for both PLWH and HIV-uninfected individuals. For PLWH, having a nadir CD4 count less than 350 cells/mm3 (aOR: 0.34; 95% CI: 0.15, 0.73) was significantly associated with anaemia resolution. Mortality was higher for PLWH who had persistent anaemia or incident anaemia after six months on ART, compared to normal haemoglobin or improved anaemia (Hazard ratio 4.0, 95% CI 1.3-12.2).

Conclusion: One-third of Tanzanian adults starting modern ART in Tanzania had persistent anaemia after six months on ART, and persistent anaemia was associated with increased mortality. PLWH with persistent or incident anaemia after six months on ART deserve close follow-up, particularly women and low-income adults.

Keywords: *Anaemia; HI; ART Initiation*

CU05NCD: Primary Breast Burkitt Lymphoma. A Case Report of a 16-Year-Old Female with a Rapidly Growing Unilateral Breast Mass

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Background: Primary breast Burkitt lymphoma is extremely rare. Commonly endemic Burkitt lymphoma presents with abdominal, jaw, periorbital, or genitourinary mass.

Case Presentation: We report a case of a 16-year-old girl with rapidly enlarging left breast swelling associated with evening fevers. This was later confirmed to be stage 1 primary breast Burkitt lymphoma involving the left breast. This represents the first described case of primary breast endemic Burkitt lymphoma in Uganda. She was started on chemotherapy and exhibited an impressive response to the drugs.

Conclusion: This case raises awareness of rare sites for endemic Burkitt lymphoma in Uganda. Accurately diagnosing this case was of great importance since it determined the treatment modality (mastectomy or not) that would have an everlasting impact on her life.

Keywords: *Primary Breast Burkitt lymphoma; Uganda*

CU06NCD: Incidence and Progression of Diastolic Dysfunction in People with HIV in Tanzania: A Comparative Cohort

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Background: Diastolic dysfunction and left ventricular mass index (LVMI) are markers of pre-clinical cardiovascular disease and have been associated with HIV in cross-sectional studies. Longitudinal data are lacking, especially from sub-Saharan Africa, which carries the highest global burden of HIV. We sought to (1) describe the incidence of diastolic dysfunction in people living with HIV (PLWH) compared to community controls in Tanzania, (2) describe the progression of diastolic function and LVMI in PLWH after antiretroviral therapy (ART) initiation, and (3) explore traditional, endemic, and HIV-specific risk factors for diastolic function and LVMI.

Methods: In the Mwanza HIV&CVD cohort, a prospective longitudinal cohort of 496 PLWH and 504 HIV-uninfected, echocardiograms were completed at enrolment and annually thereafter. Adjusted Cox-proportional hazard ratio models were used to determine the incidence of diastolic dysfunction and multi-variable mixed-effects regressions were used to determine the progression and risk factors for diastolic function and LVMI.

Results: 781 participants (367 PLWH) were followed for up to 5 years, completing a total of 1,955 echocardiograms. There was no difference in incidence of diastolic dysfunction by HIV status using the American Society of Echocardiography (aHR: 1.09 [95%CI: 0.70, 1.68]) and CHART study (aHR: 0.90 [95%CI: 0.57, 1.42]) definitions. Baseline differences in diastolic function and LVMI in PLWH before ART initiation resolved within 3 years of treatment. Hypertension and obesity were key modifiable risk factors for diastolic dysfunction while subclinical kidney disease, anaemia and manual labour were endemic predictors of diastolic dysfunction and LVMI.

Conclusion: Efforts to prevent diastolic heart failure in Africa must focus on addressing hypertension and obesity while also examining non-traditional risk factors like subclinical kidney disease, anaemia, and manual labour.

Keywords: *Diastolic Dysfunction; HIV; Left Ventricular Mass Index; Hypertension*

CU07NCD: Androgen receptor overexpression status by immunohistochemistry in malignant salivary gland tumors in Tanzania

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Background: Malignant salivary gland tumours (MSGTs) present diagnostic challenges with a limited treatment option. Despite the potential for targeted therapy, little is known about androgen receptor (AR) status and its relative anti-androgen receptor therapy in the management of metastatic, and unresectable MSGTs in Africa. This study aimed to determine the proportion of MSGTs overexpressing AR by immunohistochemistry (IHC), and its association with demographic and clinicopathological characteristics.

Methods: This was a cross-sectional analytical study of Archived Formalin-Fixed Paraffin-Embedded (FFPE) tissue blocks of MSGTs at Muhimbili National Hospital from 2019 to 2022. Data including age, sex, site, histological subtype, and grade were retrieved from pathology records and re-evaluation of haematoxylin and eosin-stained slides was done. Immunohistochemical staining was done using a monoclonal Rabbit Anti-Human Androgen Receptor, and interpretation was done by Allred score. Data was analysed using STATA version 15.0. The results were expressed as means with SD and as proportion. A Chi-square test was used to compare categorical variables. A *p-value* of 0.05 was considered statistically significant.

Results: A total number of one hundred and fifteen (115) FFPE tissue blocks of MSGTs underwent AR immunohistochemistry. The mean age of the patients was 49.7±17.9, females were 53%. Major salivary gland involvement was 58.1%, predominantly parotid gland (52.2%). Minor salivary gland involvement was predominantly in the gingiva (35.4%). Adenoid cystic carcinoma was the most common tumour accounting for 33%. High grade tumours were prevalent accounting for 46.1%. Androgen receptor overexpression was observed in 42.6%. A significant association was observed between AR and parotid gland location (aOR =3.45, 95% CI = 1.1-10, p = 0.027), and high-grade tumours (aOR = 5.1, 95% CI = 1.4-19, p = 0.014). No association was seen between AR overexpression and age (p-value 0.253), sex (p-value 0.708), and histological subtype (p-value 0.557), although highest proportion were seen in SDC (71.4%).

Conclusion: High grade malignant SGTs, parotid gland location, SDC and age above 60 years showed androgen receptor overexpression. This suggests that androgen deprivation therapy (ADT) has the potential to play a role in the management of advanced SGTs. However, large-scale studies that will include comprehensive molecular investigations and efficacy exploration of ADT are required to validate these finding.

Keywords: *Androgen receptor overexpression; Immunohistochemistry; Salivary gland tumours*

CU08NCD: Risk Factors, Histological Types, Clinical Stages, and Treatment Modalities of Sinonasal Cancer Patients at Muhimbili National Hospital and The Ocean Road Cancer Institute.

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Background: Sinonasal cancer accounts for 3-5% of head and neck cancer (HNC). Squamous cell carcinoma (SCC) is leading histological types (50-80%). Males are affected more than females with a ratio of 2:1, and the diagnosis peaks during the 5th -6th decade of life. Occupational exposures to carcinogens- wood dust, leather dust, chemical industries, agriculture, and construction work have been implicated in these malignant tumours. Smoking, alcohol consumption, and HPV infection have a role too. This study aimed to determine the risk factors associated with sinonasal cancer, histological types, clinical stage, and the treatment modalities at Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI).

Methods: This was a cross-sectional which involved 134 histologically confirmed sinonasal cancer subjects at MNH and ORCI from September 2022 to March 2023. Ethical clearance was sought from MUHAS IRB, MNH, and ORCI research Units. Informed consent and assent for <18 years of age were obtained. A structured questionnaire was used to collect data, and analysis was done by SPSS version 24, and a p-value < .05 was considered statistically significant.

Results: A total of number of 134 participants were enrolled with a mean age (±SD), of 51.7(±15.6) years, and males were more than females (1.1:1). The majority of the participants were aged above 56 years (41.8%). Majority had single exposure (68.7%) and 87(64.9%) were involved in agricultural activities, 40(29.9%) were exposed to pesticides and 41(30.6%) to herbicides. Wood dust, leather dust, textiles, chemical industry, and hairdressers accounted for 15% inclusively. Alcohol consumption was the most common non-occupational risk factor (35.1%). SCC is the most common histological type (50%), and the majority were at stage III (44%), and 47.8% received surgery followed by adjuvant chemotherapy, Radiotherapy, or combined chemo-radiotherapy as treatment mode.

Conclusion: The majority of the participants were agriculturalists and exposed to related chemical products. Other known occupational exposures were less prevalent, and alcohol consumption led to non-occupational risk factors. The majority presented late, SCC predominance and multimodality treatment approaches were noted. Education programs to the community to raise awareness on risk factors, early signs, and symptoms are recommended, and treatment modalities based on histological types among Otorhinolaryngologists.

Keywords: *Occupational exposure; Agriculture; Herbicides; Pesticides*

CU09NCD: Factors Associated with a Two-Year Survival Among Children Under Comprehensive Cancer Care at Bugando Medical Centre, Northwestern, Tanzania

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Background: Interventions are needed in low - and middle-income countries including Tanzania to address global disparities in child survival after cancer diagnosis. For nearly a decade, Tanzania has established zonal cancer centers and introduced comprehensive cancer care services as mitigation measures. This study aimed to evaluate prognostic factors associated with a two-year survival among children under comprehensive cancer care at Bugando Medical Centre, in Northwestern Tanzania.

Methods: This is a retrospective cohort study of children diagnosed and treated with cancer at Bugando Medical Centre between January 2017-December 2019. The pre-test checklist was used for data collection from patients' medical records, registries, and other sources. The data were entered into Excel, cleaned, and analysed using a statistical package for social sciences. Categorical variables were summarized as proportions while continuous variables were summarized as mean ± standard deviation and presented in tables. Univariate and multivariate logistic regression analysis was conducted to determine factors associated with a two-year survival rate. The 95% confidence interval was determined and p-value < 0.05 was considered statistically significant.

Results: A total of 369 children with a mean age of 6.5 years (standard deviation = 4.6) participated in this study. The majority of participants were males (54.2%), aged < 5 years (48.8%), from the Mwanza region (23.6%), had no family history of cancer (95.4%), diagnosed with Lymphoma (32.0%) followed by nephroblastoma (21.9%), and leukaemia (13.3%). The majority of Participants had unclassified cancer stages (59.3 %), and high cancer risk (96.2 %). Most of the participants with cancer staging results from stage 3 or 4 (26.6%). Anaemia was the most common comorbidity (20.6%) followed by malnutrition (3.3%). A child's place of residence (by region) and time spent after enrolment into comprehensive cancer care at Bugando Medical Centre were found to be independent predictors of two-year survival.

Conclusion: This study gives an update on the two-year survival rate among children diagnosed with cancer in Northwestern Tanzania. Therefore, the provision of educational interventions relating to childhood cancer to the public by considering their residence and time spent post-enrolment into comprehensive cancer care is recommended.

Keywords: *Children; Comprehensive cancer care; Survival rate*

CU10NCD: Prevalence, Patterns, and Associated Factors for Dyslipidemia Among HIV-Infected Patients on Dolutegravir Based First Line Antiretroviral Therapy Regimen Attending Bugando Medical Centre, Mwanza, Tanzania

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Background: The use of antiretroviral medication to treat HIV infection for a long time has been linked to dyslipidaemia and subsequent cardiovascular diseases. People who are at a higher risk of cardiovascular disease may benefit from antiretroviral drugs with better lipid profiles. Dolutegravir (DTG) a newer Antiretroviral agent has been recommended to be used in combinations with dual nucleoside reverse transcriptase inhibitors. Little is known regarding the prevalence, pattern, and associated factors for dyslipidaemia among People Living with HIV (PLWH) using these new regimens. The objective was to determine the prevalence, patterns and associated factors for dyslipidaemia among HIV-infected patients on dolutegravir based regimen attending CTC-BMC.

Methods: This was Hospital based cross-sectional study whereby a convenient sampling method was used to enrol a total of 374 PLWH on DTG based first line treatment conducted from May 2023 to June 2023 at BMC's CTC clinic. A structured questionnaire was used to collect patients' demographic and clinical information. Blood, urine, and stool samples were collected for laboratory analysis. Dyslipidaemia was defined by NCEP-ATP III, as at least one abnormality in lipid parameter among the following: TC > 5.17 mmol/l or TG > 1.7 mmol/l or HDL-c < 1.03 mmol/l or LDL-c > 3.36 mmol/l. Data was analysed using STATA 13.

Results: A total number of (255/374) 68.18% PLWH on DTG based first line regimens had dyslipidaemia. The most common pattern was single dyslipidaemia which was low HDL-C in 43.9% (112/255) and the most common mixed dyslipidaemia was high TC + LDL-C in 13.7% (35/255) of all patients with dyslipidaemia. Factors associated with dyslipidaemia were age ≥ 55 years, office SBP ≥ 140mmHg, duration of DTG therapy ≥ 30 months, overweight, and obesity.

Conclusion: Our findings show a high prevalence of dyslipidaemia among PLWH on DTG based therapies. The most prevalent type of dyslipidaemia was single dyslipidaemia of low HDL-C. The use DTG ≥ 2 years and 6 months, age ≥ 55 years, elevated office SBP, overweight and obesity were associated factors for dyslipidaemia Therefore, routine assessment of lipid profiles for targeted high-risk individuals is recommended.

Keywords: *Dyslipidaemia; Dolutegravir based regimen; Adults; HIV/AIDS; Antiretroviral therapy*

CU11NCD: Prevalence, and factors Associated with Persistent Pulmonary Hypertension and Diagnostic utility of Differential Oxygen Saturation among newborn babies in Mwanza, Tanzania

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Background: Persistent pulmonary hypertension is a complication that occurs when there's feta-neonatal transition failure. If not treated, it may cause chronic lung disease, neurological disorders, cognitive impairment, and even death. This study was conducted to determine the prevalence, factors associated with persistent pulmonary hypertension and diagnostic utility of differential oxygen saturation among newborn babies in Mwanza, Tanzania

Methods: This was a cross-sectional study conducted for 6 months. A total number of 860 newborns were recruited randomly by convenient sampling. Data on the history, physical examination, differential oxygen saturation and echocardiography findings were documented. We included all newborns from 1 to 28 days of life and excluded those with major congenital anomalies. STATA version-13 was used for analysis, and p-value of less than 0.05 at a 95% confidence interval was considered statistically significant.

Results: The prevalence of persistent pulmonary hypertension was 6.17% and associated factors were caesarean section, meconium aspiration, and respiratory distress with odd ratios of 1.99, 5.8 and 2.66 respectively. The area under the curve for utility of differential oxygen saturation was 0.8903. At the cut point of 5% sensitivity, specificity, positive and negative predictive values were 75.47%, 89.47%, 16.82% and 99.2% respectively. At the cut point of 10% sensitivity, specificity, positive and negative predictive values were 41.51%, 98.64%, 4.47% and 100% respectively.

Conclusion: There is a high prevalence of persistent pulmonary hypertension among newborns in our setting. Risk factors found to contribute were babies born at term or near term, delivery by caesarean section, respiratory distress, and meconium aspiration. A differential oxygen saturation, of 5% and 10% suspects, and of 10% and more strongly suggests the disease intervention can be started and confirmed by echocardiography.

Keywords: *Pulmonary hypertension of the newborn; Differential oxygen saturation; Risk factor*

CU12NCD: Adherence to Hydroxyurea therapy among Caregivers of children with sickle cell anemia attending sickle cell clinic at Bugando Medical Centre, Mwanza, Tanzania

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Background: Hydroxyurea has been an effective treatment for reducing complications associated with sickle cell anaemia. But adherence to hydroxyurea among caregivers of children with disease remains a challenge. Bugando Medical Centre serves as a focal point for treating paediatric sickle cell anaemia, yet adherence and factors contributing are not well-documented. This study aims to evaluate the rate of adherence to hydroxyurea among caregiver and to identify contributing factors to non-adherence.

Methods: This was a cross-sectional study. A total number of 172 participants were enrolled. Data analysis was performed using Stata version15. Modified poison regression was used to determine the association between exposures and adherence to treatment among study participants.

Results: More than half (68.6%) of the children were aged between 1-10 years. Their Median age was 8(IQR: 5-12) years. A significant percentage of the participants (23.8%) had good adherence to treatment and (76.2%) of the participants they had moderate to poor adherence on hydroxyurea. Children who were aged 1-10 years had significantly two times more chance to have good adherence (aPR= 2.98, 95% CI=1.18,7.47) as compared to reference group aged 11-17 years. Children who belong to caregivers with secondary education had significantly 41% higher chance of good adherence on treatment (aPR= 1.41, 95% CI=1.19,2.87) as compared to those children belong to caregivers with primary education; similarly, children who belong to caregivers with college/university education had significantly 92% higher chance of good adherence on hydroxyurea (aPR= 1.92, 95% CI=1.09,4.63) as compared to those children belong to caregivers with primary education. Participants with good knowledge on hydroxyurea had significantly 55% higher chance of having good adherence on hydroxyurea (aPR= 1.55, 95% CI=1.10,4.78) as compared to their control with poor knowledge on hydroxyurea treatment

Conclusion: The study revealed that certain factors, including the child's age and caregiver's educational level, are associated with good adherence to treatment for sickle cell anaemia. Despite these associations, the rates of good adherence remain low in the studied population. These findings underscore the urgent need for targeted interventions aimed at increasing knowledge and awareness about the critical importance of adherence to hydroxyurea.

Keywords: *Adherence, Hydroxyurea; Sickle cell anemia; caregiver.*

CU13NCD: Comparison of diagnostic performance of lung ultrasonography and chest radiography in diagnosing respiratory distress syndrome among neonates at Muhimbili national hospital.

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Background: Lung ultrasound (LUS) has emerged as a potential modality of choice in diagnosing respiratory distress syndrome (RDS). LUS in the diagnosis of respiratory distress syndrome (RDS) has shown high sensitivity and specificity. However, it is not currently being used in Tanzania. This study aimed to determine diagnostic performance of lung ultrasonography compared to chest radiography and risk factors of RDS in neonates at Muhimbili National Hospital from June to December 2022.

Methods: A quantitative cross-sectional study was conducted at Muhimbili National Hospital between June to December 2022. A sample of 179 neonates meeting the inclusion criteria was obtained through consecutive sampling. Demographic and clinical information was obtained using a structured data collection and monitoring tool. Data analysis was done using SPSS version 23, and descriptive statistics, sensitivity, specificity, positive and negative predictive values, univariate and multivariate logistic regression were employed. Significance was determined at p-value < 0.05. Ethical clearance was obtained from the Research and Publication committee of the Muhimbili University of Health and Allied Sciences.

Results: A total number of 179 neonates were studied (mean gestational age: 32 ± 4) weeks, mean birth weight: 1,769 ± 856 g). A total number of 103 newborns had a final diagnosis of RDS and 76 had other causes of respiratory distress. The prevalence of RDS in newborn was 18% in the study duration. LUS compared to CXR showed high sensitivity, specificity, PPV, NPV and diagnostic accuracy in diagnosing RDS, 95.1%vs. 90.3%, 94.7%vs. 89.5%, 96.1%vs. 92.1%, 93.5%vs. 87.2%, 95%vs. 90% respectively. Multivariable analyses demonstrated risk factors significantly associated with RDS were gestational age (p-value=0.01), low birth weight (p-value=0.034), and small for gestational age (SGA), (p-value=0.034).

Conclusion: Lung ultrasonography compared to chest radiography was found to have high diagnostic accuracy, sensitivity, specificity, PPV and NPV for respiratory distress syndrome (RDS) in neonates. RDS was significantly associated with lower birth weights, gestational age and SGA.

Keywords: *Respiratory Distress Syndrome; Lung Ultrasonography; Chest X-ray Respiratory Distress*

CU14NCD: Prevalence, pattern and factors associated with congenital heart diseases among neonates admitted at Bugando Medical Centre in Mwanza, Tanzania.

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Background: Congenital heart diseases (CHD) are the commonest heart disease in children worldwide, and accounts for 28% of all congenital anomalies. The birth incidence of CHD worldwide has been reported to be 75 per 1,000 when trivial lesions are included. The estimation of prevalence of CHD has been challenging as it is affected by the timing of assessment, limited screening, and diagnostic modalities. Late diagnosis of CHD is associated with poor outcomes. This study aimed at determining the magnitude, pattern, and factors associated with CHD among neonates admitted at Bugando Medical Centre in Mwanza, Tanzania.

Methods: This was a hospital-based cross-sectional study conducted from November 2022 to March 2023 which included 513 neonates aged 0-28 days admitted at Bugando Medical Centre. Physical examination and screening echocardiography was done to all enrolled neonates. Data analysis was done by using STATA version 13.

Results: A total number of 513 neonates were enrolled, the median age was 5 [3-9] days. The prevalence of CHD confirmed by echocardiography was 21.27% (104/513), acyanotic CHD was the leading type. Patent ductus arteriosus was the commonest acyanotic lesion accounting for 41.35% of CHD, while Transposition of great arteries was the commonest cyanotic lesion. The prevalence of critical CHD requiring intervention within the first year of life was 6.8% (35/513). CHD was significantly associated with a maternal history of residency near mining activities (OR 2.9 [1.2 – 6.9], P-0.017), not using folic acid in the first trimester (OR 2.5[1.4 – 4.4], P- 0.001) and alcohol use during pregnancy (OR 2.3[1.0 – 5.6], P- 0.05). Low pre-ductal oxygen saturation (<90%), tachycardia and presence of central cyanosis were independently associated with the presence of CHD (OR 3.2 [1.4 – 7.3], P-0.005), (OR 2.8 [1.3 – 5.9], P-0.007) and (OR 3.9 [1.1 – 13.6], P-0.031) respectively.

Conclusion: About 20% of admitted neonates were found to have CHD. Maternal history of residing near mining activities, and not using folic acid in the first trimester and alcohol use increased odds of getting CHD. Low oxygen saturation, tachycardia and central cyanosis were associated with the presence of CHD. These risk factors warrant their incorporation in the screening of CHD in neonates.

Keywords: *Neonates; Congenital heart disease; Echocardiography*

CU15NCD: Adulteration of herbal medicinal products used for the treatment of erectile dysfunction in Mwanza City, Tanzania.

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Background: Erectile dysfunction (ED) affects over 200 million men by 2025, mainly in developing countries. Prescription drugs like Sildenafil and Tadalafil tablets are approved for treatment, but herbal therapy has gained popularity as an alternative treatment. Even though the market for herbal medicine is growing every year, there have still been reports of adulterants of these conventional drugs being found in herbal medicines. Adulteration with synthetic drugs can be fatal, especially if those drugs can interact with other prescription drugs or result in other medical disorders. Therefore, detecting the presence and quantity of sildenafil and Tadalafil in herbal medicine is important.

Methods: A total number of forty (40) samples of herbal products for ED were collected from different streets of Mwanza City. Herbal medicine samples were prepared using methanol solvent alongside the standard references of sildenafil and Tadalafil in a Hexane/ethyl acetate/ methanol solvent system. Samples were analysed using High-Performance Thin Layer Chromatography (HPTLC). Sildenafil and Tadalafil were detected by comparing RF values of the standard and corresponding spots in the study samples.

Results: Out of 40 samples more than half 25 (62.5%) of the samples were found to be adulterated with Sildenafil in (5%), Tadalafil (22.5%), Sildenafil+ Tadalafil (37.5%). Among adulterated samples, 5% contained an amount of sildenafil that exceeds the maximum recommended daily dose which is 100mg.

Conclusion: Herbal medicinal products used in the management of erectile dysfunction around Mwanza City are highly adulterated with sildenafil and Tadalafil which are synthetic drugs. This is a health risk to the consumer and therefore measures need to be put by establishing quality control and strict regulation of the herbal medicines sold to the public.

Keywords: *Adulteration; Herbal medicine; HPTLC; Sildenafil; Tadalafil*

CU16NCD: Prevalence, pattern and predictors of cardiovascular event in people living with HIV attending clinic and admitted at tertiary hospital in Mwanza Region

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Background: HIV has contributed to over 39 million deaths worldwide. Sub-Saharan Africa carries larger burden of HIV, accounting for more than 70% of global HIV burden. In Tanzania, it is estimated to a total of 1.4 million PLHIV in 2013. Cardiovascular diseases are the major cause of significant morbidity worldwide, and it is estimated 17.9 million people died from CVDs in 2015 in which ischemic heart diseases (IHD) and stroke were the leading cause of death.

Methods: A cross-section hospital-based study was conducted on January 2023 at BMC involving both outpatients and inpatients. A simple random sampling technique was used to recruit 203 participants with a minimum estimated sample size of 103. The study population were adult HIV infected patents above 18 years old attending CTC clinic and admitted at BMC. The participants were interviewed using a semi structured questionnaire. Weight, height, abdominal circumference and blood pressure were measured.

Results: The overall prevalence of cardiovascular diseases among this population was 4.9% where by 4(40%) had stroke, 3(30%) hypertensive heart diseases, 2(20%) heart failure and 1(10%) coronary artery disease. The prevalence of hypertension was 11.8%, and BMI was related to hypertension (p=0.000). Overweight was seen in 25.1% (n=51) of the participants, and obesity was seen in 22.2% (n=45) of the participants. Alcohol consumption was related with hypertension (p=0.038) where by 59.6% (n=121) consumed alcohol. History of hypertension was related to development of cardiovascular diseases with (p=0.000) where by 25.1% (n=51) of the participants had history of hypertension, and 66.7% (n=34) were on irregular medication and 8(15.7%) consulted a traditional healer for treating hypertension.

Conclusion: Cardiovascular diseases are common among PLHIV, hypertension, obesity, alcohol consumption, and cigarette smoking were the contributing risk factors. There is need to integrate NCD in HIV care and HIV/NCDs screening, also awareness campaign.

Keywords: *HIV; Cardiovascular Diseases*

CU17NCD: Patterns of lipid abnormalities and their predictors among chronic kidney disease patients at tertiary hospital in Northwestern zone of Tanzania

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Background: Chronic kidney disease (CKD) is a growing problem in sub-Saharan Africa, and this may be attributed to an increased burden of diabetes and hypertension in the region. Dyslipidaemia with its resultant atherosclerosis in patients with chronic kidney disease is associated with an increased risk of ischemic heart disease and cerebrovascular disease which predisposes them to recurrent acute heart attack and strokes. This study aimed to determine the patterns of lipid abnormalities and associated risk factors in patients with CKD at BMC.

Methods: This was a cross-sectional study conducted at Bugando Medical Centre for CKD patients who attended dialysis unit between January and September 2022. Data were collected from the Electronic Health Management System (EHMS). Data were coded and entered into SPSS software version 20 for management and analysis. We described our results using proportions (%) for categorical data and means or medians for continuous variables according to distribution; predictors with significant p-values were assessed using Pearson's correlation for predictors, and a p value < 0.05 was considered significant.

Results: A total number of 100 patients were included in this study. The prevalence of dyslipidaemia was found to be 91%. Triglyceride levels were elevated in 12% of the patients, reduced HDL in 90% of the patients, and elevated total cholesterol and LDL in 8% of the patients. Majority of the patients (67%) had Reduced HDL-only pattern of dyslipidaemia, followed by a combination of reduced HDL and elevated triglyceride which accounted for 13% of the cases. We found an association between comorbidity and dyslipidaemia (p <0.05).

Conclusion: Dyslipidaemia is prevalent in CKD patients who are on haemodialysis. Therefore, regular monitoring of blood lipids and early treatment and prophylaxis may decrease the risk.

Keywords: *Chronic Kidney Disease; Haemodialysis; Dyslipidaemia*

CU18NCD: Uptake of COVID-19 vaccination and associated factors among patients attending oncology services at the Ocean Road Cancer Institute in Dar es Salaam, Tanzania

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Background: COVID-19 campaign, and vaccination have reduced diseases severity and fatalities around the globe. However, Sub-Saharan Africa faces vaccine uptake challenges. Global data shows 67.7% of the general population are vaccinated, and Tanzania is reported appealing findings on the targeted vaccinating coverage (over 70%) among individuals aged 18 years and above by December 2022. However, a more specific assessment of the vaccination coverage by groups is needed, and cancer patients are priority groups owing to their vulnerability.

Methods: A cross-sectional study design was conducted. A stratified sampling was used for quantitative, and convenience sampling was applied for qualitative data collection. Data were collected through a mobile application, Open Data Kit (ODK) and analysed using the statistical software 'R'. Qualitative data were collected through in-depth interviews. Univariate and multivariate logistic regression analyses were performed to determine significant associations between socio-demographic, clinical and health belief model (HBM) variables and COVID-19 vaccine among cancer patients. A thematic qualitative was conducted to explore the underlying beliefs and perceptions influencing vaccination decision.

Results: A total number of 510 cancer patients participated in the study, with 479 in quantitative and 26 in qualitative. A total of 384 (80.2%) of the interviewed participants were female with a mean age of 48 years (± SD 12.4) years; ranging from 18 to 83 years. Approximately 58.2% (278/479) of the participants reported to be vaccinated against COVID-19, and among them 79.5% were females. Two factors showed significant associations with vaccine uptake were perception on COVID-19 vaccine (OR 8.86, CI 2.84–32.2, p<0.001), and perceived severity of COVID-19 (OR 0.56, CI 0.36-0.87, p=0.010). In the qualitative part, the findings suggest that individuals' beliefs, perceptions, and external factors play a role in their decision to get vaccinated.

Conclusion: Approximately 6 out of 10 cancer patients at the ORCI reported to be vaccinated; with patients care setting, perception on COVID-19 vaccine, and perceived severity being significantly associated with COVID-19 vaccination uptake. Public health interventions should leverage these identified factors to promote enhanced vaccine acceptance and uptake, through recognizing and tailoring communication efforts to specific characteristics.

Keywords: *COVID-19 vaccine; Cancer patient; Oncology Services; Ocean Road Cancer Institute (ORCI)*

CU19NCD: Stroke Characteristics and Outcomes in Urban Tanzania: Data from the Prospective Lake Zone Stroke Registry

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Background: Stroke is a second leading cause of death globally, with an estimated one in four adults suffering a stroke in their lifetime. We aimed to describe the clinical characteristics, quality of care and outcomes in adults with stroke in urban Northwestern Tanzania.

Methods: We analysed de-identified data from a prospective stroke registry from Bugando Medical Centre in Mwanza, the second largest city in Tanzania, between March 2020 and October 2022. This registry included all adults ≥18 years admitted to our hospital who met the World Health Organization clinical definition of stroke. Information collected included: demographics, risk factors, stroke severity using the National Institutes of Health Stroke Scale, brain imaging, indicators for quality of care, discharge modified Rankin Scale, and in-hospital mortality. We examined factors independently associated with mortality using logistic regression.

Results: The cohort included 566 adults, of which 52% (294) were female with a mean age of 65±15 years. The majority had a first-ever stroke 88% (498). Premorbid hypertension was present in 86% (488) but only 41% (200) were taking antihypertensive medications before hospital admission; and 6% (32) had HIV infection. Ischemic strokes accounted for 66% (371) of strokes but only 6% (22) arriving within 4.5 hours of symptom onset. In-hospital mortality was 29% (127). In the multivariate analysis independent factors associated with mortality were: severe stroke (aOR 1.85, 95% CI:1.56 – 2.19, p<0.001), moderate to severe stroke (aOR 1.81, 95% CI:1.59–2.04, p<0.001), moderate stroke (aOR 1.50, 95% CI:1.22–1.84, p<0.001), leucocytosis (aOR 1.18, 95% CI:1.01–1.39, p=0.039) and not receiving any form of venous thromboembolism prophylaxis (aOR 1.20, 95% CI:1.01-1.41, p=0.03).

Conclusion: We report a stroke cohort with poor in-hospital outcomes in Northwestern Tanzania. Early diagnosis and treatment of hypertension could prevent stroke in this region. More work is needed to raise awareness about stroke symptoms and to ensure that people with stroke receive guidelines-directed therapy.

Keywords: *Stroke; Stroke registry; Performance indicators; Morbidity; Mortality*

CU20NCD: Prevalence of hypogonadism and associated risk factors among newly diagnosed ART naïve HIV-infected males in Mwanza, Tanzania

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Background: Hypogonadism is frequent among human immunodeficiency virus (HIV) infected males and might have significant clinical impact leading to sexual impairment and metabolic derangement. The causes of hypogonadism are not clearly known but can be intensified by various factors including age, infectious and non-infectious agents, weight loss, and drugs among others. There is limited information about the magnitude of hypogonadism and its associated factors among people leaving with HIV in Tanzania. Aim of this study was to determine the prevalence of hypogonadism and its associated risk factors among newly diagnosed antiretroviral therapy (ART) naïve HIV infected men in Mwanza, Tanzania.

Methods: This was a multicentre hospital-based study involving newly diagnosed ART naïve HIV infected men in Mwanza. All enrolled participants underwent thorough clinical and physical examination including anthropometric measurement. Data including socio-demographic and clinical data was collected using a pre-structured questionnaire. Serum total testosterone, follicle stimulating hormone, luteinizing hormone and oestradiol were estimated. Serum testosterone <300 ng/dl, or testosterone >300 ng/dl with high luteinizing hormone and follicle stimulating hormone were taken as markers of hypogonadism. Data were analysed using STATA version 15.

Results: A total number of 388 newly diagnosed ART naïve HIV infected males with a median age of 40 [33 – 46] years were enrolled in this study. The median BMI and CD4 count were 21.1 [19.4 – 23.5] Kg/M^2 and 301.5 [169.0–410.5] respectively. Hypogonadism was found in 186 (47.9%), with secondary hypogonadism (83.9%, 156/186) being the most frequent form. Predictors of hypogonadism among HIV infected males were age above 46 years (Odds ratio [OR], 2.3; 95% confidence interval [CI], 1.1 – 4.6; p = 0.023), herbal medicine use (OR, 2.4; 95% CI, 1.5 – 3.9; p < 0.001), WHO clinical stage 3 (OR, 2.7; 95% CI, 1.4 – 5.2; p = 0.003), and weight loss (OR, 1.8; 95% CI, 1.1 – 3.0; p = 0.016).

Conclusion: Hypogonadism was found in almost one half (47.9%) of ART naïve HIV infected men. Majority (83%) had secondary hypogonadism. Age above 46 years, herbal medicine use, weight loss and advanced clinical stage 3 are useful to identify patients at risk of hypogonadism.

Keywords: *HIV; Antiretroviral naïve males; Hypogonadism; Risk factors*

CU21NCD: Non-Alcoholic Fatty Liver Disease in Tanzania: Prevalence, Determinants, and Correlation with Triglycerides-Glucose Index in Overweight and Obese Individuals

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Background: Non-alcoholic fatty liver disease (NAFLD), which is closely associated with metabolic syndrome (MetS), is rarely reported in Tanzania, where MetS is prevalent. The purpose of this study was to determine the extent and associated factors of this condition in overweight and obese individuals and to correlate standard ultrasound diagnosis with triglyceride-glucose index (TyG) and TyG-body mass index (TyG-BMI).

Methods: A cross-sectional analysis was performed in 181 adult outpatients attending a general medical clinic. Demographic, clinical, and laboratory data were collected and analysed using STATA 13. The presence of fatty liver was detected by ultrasound. The discriminatory power of TyG and TyG-BMI for diagnosing NAFLD was evaluated using Receiver Operating Characteristic (ROC) Curve analysis, and the Area Under the ROC Curve (AUC) was reported.

Results: The overall prevalence of NAFLD was 30.4%. The prevalence's of NAFLD in patients with hypertriglycaemia, class III obesity, class II obesity, and diabetes were 59.6%, 50%, 38%, and 37.5%, respectively. One third of patients with NAFLD had significant steatosis (stages 2 and 3). NAFLD was strongly predicted by hyperuricemia (≥ 360 µmol/L) (p=0.04), and TyG ≥ 8.99 (p=0.003). The best cut-off values of TyG and TyG-BMI to predict NAFLD were 8.99 [AUC 0.735; sensitivity 70.9%, specificity 79.3%] and 312 [AUC 0.711; sensitivity 60% and specificity 75.4%] respectively.

Conclusion: The prevalence of NAFLD is high among people with metabolic disorders in Tanzania, with a significant proportion of asymptomatic participants having an advanced disease. Simple screening tools such as TyG and TyG-BMI can be used to detect these cases early.

Keywords: *Non-alcoholic fatty liver disease (NAFLD); Triglyceride-glucose ratio (TyG; Triglyceride-glucose ratio-BMI (TyG-BMI); Tanzania; Overweight*

CU22NCD: Evaluation of potential risk for developing treatment-associated late effects among childhood cancer survivors in Northern Tanzania

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Background: Global advancement in paediatric cancer treatment has significantly increased survival rates for children with cancer. Childhood cancer survivors (CCS) now represent a growing population at risk of potentially debilitating late effects of their treatment. This study evaluates the potential risk for long-term complications related to cancer therapy among childhood cancer survivors who completed treatment in Tanzania at Bugando Medical Centre (BMC) and compares the relative risk assessment of childhood cancer survivors at BMC as compared to the published British Childhood Cancer Survivor Study (BCCSS) cohort.

Methods: Files of all patients age <18 years with an oncologic diagnosis who received and completed their treatment at BMC from 2016 to 2022 were retrospectively reviewed. Extracted data included patient demographics, primary disease diagnosis and site, treatment received, and cumulative treatment doses. BCCSS risk assessment was assigned and predicted long term follow up surveillance needs were extrapolated from published Children's Oncology Group Long-Term Follow-Up Guidelines.

Results: A total number of 190 patients were initially identified, with 17 excluded due to missing treatment information. Among remaining 173 patients, the mean age was 7years, and 47% were females (n=82). The most common diagnoses were Wilms tumour (30%, n=52), and Burkitt's Lymphoma (26%, n=45). The majority (98%) received chemotherapy (n=170), 42% (n=73) underwent tumour resection, and 8% (n=18) received radiation. Distribution of BCCSS late effect risk assessment included 6% low risk (n=10), 80% moderate risk (n=139), and 14% (n=24) high risk. This was a higher rate of moderate/ severe risk (94%) compared to the published UK BCCSS cohort (84%). Based on treatment received, the late effects with highest potential risk were cardiomyopathy (57% of patients, n=98), bladder and urinary tract toxicity (50%, n=87), and ototoxicity (22%, n=38).

Conclusion: Childhood cancer survivors at BMC have a higher risk of late effects as compared to published survivor cohorts in high-income countries. There is a need to develop and improve long-term follow-up care for survivors by enhancing patient and provider education to promote early detection of late effects.

Keywords: *Cancer survivorship; Treatment late effects; Childhood cancer*

CU23NCD: Prevalence of acute kidney injury among children under five years old with acute watery diarrhea in Mwanza, Tanzania

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Background: Acute watery diarrhoea (AWD) is the leading cause of mortality among children under five years. One of the common complications associated with diarrhoea is dehydration, which is also a common cause of acute kidney injury (AKI). This study aimed to determine the prevalence of acute kidney injury among children under five years old with acute watery diarrhoea in Mwanza, Tanzania.

Methods: A hospital-based cross-sectional study was conducted from June to August 2023. The study involved 77 children under five years old with acute watery diarrhoea attended at Buzuruga and Makongoro health centers in Mwanza, Tanzania. Whole blood (2-3 mls), and urine samples were collected from each patient for serum creatinine and urine albumin testing. Data analysis was done using STATA version 15 according to the objectives of the study.

Results: The median (IQR) age of the children was 16 [12 – 27] months. Approximately fifty seven percent 44 (57.1%) were males, and 49 (63.6%) of the study participants' caretakers were self-employed. Most of the participants 42 (54.6%) were from Buzuruga health centre. The prevalence of acute kidney injury in this study was 3 (3.9%). Out of all factors, only dehydration was significantly associated with acute kidney injury (p=0.000).

Conclusion: We observed a decrease in the overall prevalence of acute kidney injury (AKI) among children under five years with acute watery diarrhoea (3.9%). Early attendance at the health facilities and emphasis on oral rehydration campaigns should continuously be implemented.

Keywords: *Acute watery diarrhoea (AWD); Dehydration; AKI*

CU24NCD: Wasting and stunting levels among children aged 6-24 months in Mwanza Region: Do feeding practices and hygiene matter?

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Background: Consequences of undernutrition in utero and early childhood remain devastating throughout lifetime. Acute and chronic undernutrition reported to associate with poor neurological and cognitive development, morbidity and early mortality across childhood and adulthood. Globally in 2022, 148 million children under five estimated to be stunted and 44 million wasted, with most of them live in Asia (70%) and Africa regions. Poverty, dietary diversity, hygiene practice, food preparation among others attributed to poor malnutrition burden in developing countries. In this study, we investigated the prevalence of undernutrition among 6-24 months children and its association with reported feeding and hygiene practices in Mwanza Region, Tanzania.

Methods: A cross sectional study design involved convenient sample of 5400 pairs of children aged 6-24 months and their care givers attending reproductive and child health clinics in July 2023. Public health facilities with high volume of attendance were preselected from Ilemela, Nyamagana, Misungwi, Sengerema, Magu, Kwimba, Ukerewe, and Buchosa districts. Child anthropometric variables were captured to determine stunting and wasting using WHO Anthro Survey Analyzer. A structured questionnaire was used to capture care givers' characteristics, child feeding and hygiene practices. Data analysis was done using STATA version 13.

Results: Children participated in this study are highly affected by stunting (25%) and wasting (16%) with majority being in 6-11 months and male sex. Exclusive breastfeeding within 24hours of life was reported by 68% although by age of 6 months all children were given at least water, fruit juice, tea, animal or formula milk. Children were infrequently fed deep green vegetables (40%), legumes (32%), fish (31%), eggs (22%), and meat (16%). Children are commonly fed soft rice or maize porridge. Poor hand washing practices were reported during food preparation and baby feeding. Appropriate feeding and hygiene practices were associated with low odds of stunting and wasting whereas male sex was associated with high odds of stunting and wasting.

Conclusion: Child stunting and wasting remain to be a public health concern in Mwanza region. Poor child feeding practices and observed hygiene during food preparation need to be addressed in order to build a healthy future generation.

Keywords: *Stunting, Wasting; Child feeding practices; Hygiene; Handwashing*

CU25NCD: Prevalence and Factors Associated with Electrolyte Abnormalities and Short-Term outcome among Critically ill Children Admitted in The Intensive Care Unit at Bugando Medical Centre Mwanza, Tanzania

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Background: Electrolytes play a key role in maintaining homeostasis along with fluids in paediatric patients. The higher and lower value of electrolytes like sodium, potassium, and chloride can affect cellular processes and result in cardiac, respiratory, and neurological complications, causing morbidity and mortality. The aim of this study was to determine the prevalence, factors associated and short-term outcome of electrolyte abnormalities in critically ill children admitted in intensive care units (PICU and HDU).

Methods: This was a hospital-based cross-sectional study involving critically ill children who were admitted in PICU and HDU in the paediatrics department of the Bugando Medical Centre between September 2022 and February 2023. A data collection tool was used to record important information on the child's history and a physical examination finding within 24 hours of admission. Blood samples were drawn for measurements of serum potassium, sodium, and chloride using the chemistry analyser Cobas Integra 400 plus. Statistical data analysis was performed using STATA version 13 and the p-value of <0.05 was used as a statistical level of significance.

Results: A total number of 312 critically ill children at Bugando Medical Centre were enrolled. Their median age was 36[12 - 72] months and most of them were under five years 203(65%) and the majority were males 189(61%). The most prevalent electrolyte abnormality was hypochloraemia (50.6%) followed by hypokalaemia (32.4%), and both were independently associated with having severe acute malnutrition (p-value 0.04) and (p-value <0.001) respectively. Children with hyperkalaemia and hyperchloremia had increased risk of dying within 48hrs while hypokalaemia and hypernatremic were independently associated with prolonged stay in ICU.

Conclusion: Abnormalities of sodium, potassium, and chloride are very common in critically ill children, and they are associated with severe acute malnutrion, being in a state of shock, having renal disease, convulsions, and diarrhoea, also prolonged ICU stay and death. These electrolytes should be closely monitored in ICU to reduce prolonged stay in ICU and mortality.

Keywords: *Electrolyte Abnormalities; Critically Ill Children; Pediatric Intensive Care Unit; High Dependency Unit*

CU26NCD: Prevalence and factors associated with hypertension among children attending paediatric outpatient clinic at Bugando Medical Centre, Mwanza, Tanzania

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Background: Childhood hypertension is challenging to diagnose and manage due to age group variations and differing definitions. It contributes significantly to global cardiovascular burdens, causing 10.2 million deaths and 208 million disability-adjusted years. Risk factors include family history, obesity, physical inactivity, prematurity, and second-hand smoke.

Methods: This was a hospital-based cross-sectional study which involved 282 participants, aged 3 to 13 years at the paediatric outpatient clinic Bugando Medical Centre in Mwanza Tanzania from March to May 2023. Social demographic and physical examination data were collected using a structured questionnaire and Blood pressure was measured and matched according to age, sex, and height using the 2017 AAP Clinical Practice Guideline for Diagnosis and Management of Hypertension in Children and Adolescents. Statistical analysis was done using the STATA version 13.

Results: A total number of 282 participants were enrolled median age was 7 years (IQR 4 – 10), The prevalence of hypertension was found to be 11.35%, whereby elevated blood pressure was 9.6%, Stage 1 and Stage 2 hypertension was 0.35% and 1.4% respectively. Male sex (OR 2.79: 95%CI:1.20 – 6.91 p = 0.018), chronic kidney disease OR 15:95%CI:1.76 – 128.4, p = 0.013), and family history of hypertension (OR 2.58:95%CI 1.05 - 4.63p= 0.037) were independently associated with Hypertension.

Conclusion: The prevalence of hypertension among children is alarming. There is a significant association between hypertension and a family history of hypertension, chronic kidney disease, and male gender. Measures should be undertaken to screen and follow up on those who are at risk and those with elevated blood pressure levels.

Keywords: *Childhood Hypertension; Hypertension; Paediatric*

CU27NCD: Justification of Imaging Requests and Optimization of Radiation Exposure from Paediatric Chest Radiography at a Tertiary Hospital in Dar-es-Salaam, Tanzania

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Background: Ionizing radiation is a well-known source of hazardous impacts on human health. Therefore, understanding the "Justification and Optimization" principles of radiation protection during chest X-ray (CXR) examinations (commonest radiographic procedures) is vital. This is for minimizing unnecessary exposure to ionizing radiation and implementing effective radiation protection protocols, particularly for children who are at higher risk for lifetime ionizing radiation biological impacts such as developing cancers and hereditary effects.

Methods: Prospective hospital-based cross-sectional study of 320 paediatric participants who underwent AP/PA CXR examinations in a period of six months. Clinical "justification" of the CXR imaging request was concluded by comparing the participant's clinical presentation to the standardized "paediatric CXR imaging referral guideline". For "optimization", six CXR radiographic technical criteria were evaluated and compared to the known standards. These include, type of X-ray projection, collimation, rotation, exposure parameters, repeated CXR exams and use of shielding devices. Data was analysed using SPSS v29.0.

Results: The study included 320 participants; many were males 183(57.2%) versus 137(42.8%) females with a mean age of 3.2 years. The proportion of clinically unjustified CXR requests was 36.6%. Of these unjustified requests, 60(51.3%) lacked clinical information, remaining 57(48.7%), clinical information didn't meet the imaging guideline. Most unjustified requests were from OPD 97(82.9%) versus 20(17.1%) from IPD, $p<0.001$, OR=3.1. AP-projection, unsatisfactory collimation and rotation were 255(79.7%), 223(69.7%) and 204(63.8%) of CXR exams respectively, significantly in under-fives, $p<0.001$. Unnecessary repetition of CXR examinations occurred in 37(11.6%). While 118(36.9%) of exams didn't utilise optimal levels for at least one of the exposure parameters. Shielding tools weren't applied at all.

Conclusion: Around one-third of paediatric CXR examinations were clinically unjustified, while most were performed with sub-optimal radiographic techniques. These underscore the necessity for improved implementation of "justification" and "optimization" principles of radiation protection during CXR imaging.

Keywords: *Justification; Optimization; Ionizing Radiation; Chest Radiography; Paediatrics*

CU28NCD: Patient reported chemotherapy adverse reactions among paediatric cancer patients at Bugando Medical Centre

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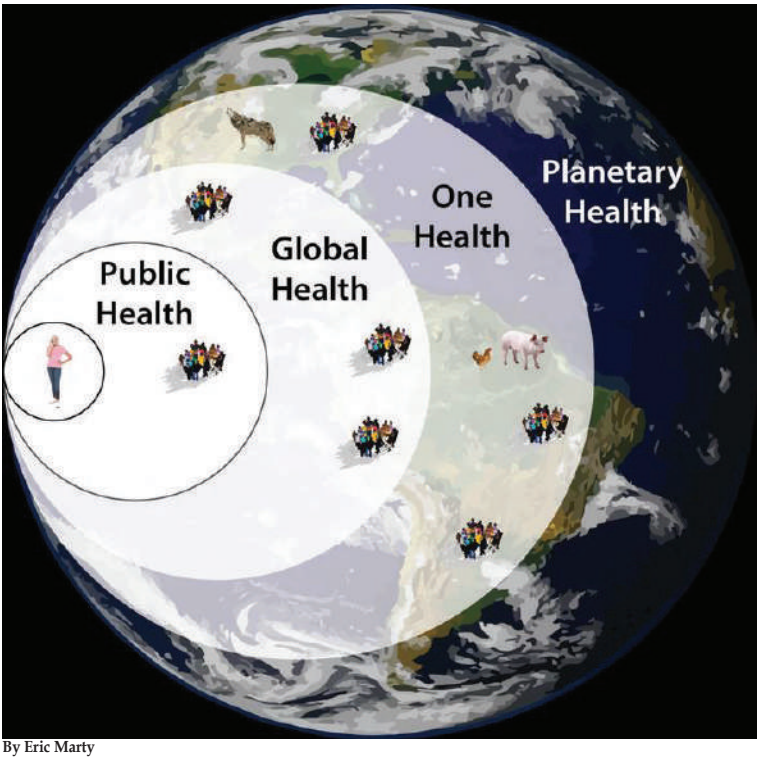
Background: Cancer chemotherapy is the treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing. Chemotherapy causes severe adverse effects due to its lack of selective toxicity (cytotoxic effect) and narrow therapeutic index, thereby causing severe adverse events in patients. The objective was to assess self-reported adverse drug reactions in children with cancer who are receiving cancer chemotherapy.

Methods: The study was conducted at the Bugando Medical Centre (BMC). This study was conducted for one month, from 12th April to 15th May 2023. The study design was a descriptive cross-sectional study. The study population included all paediatric cancer patients who had taken at least one chemotherapy treatment and their primary care takers. The significant association was checked at p value < 0.05.

Results: A total of 120, (67 male and 53 female) paediatric cancer patients receiving chemotherapy were recruited in this study. A total of 43 ADRs were reported. A mean of 5ADRs/patient was observed in this study. The most common ADRs were gastrointestinal effects (taste changes 89 (74.2%), vomiting 53 (44.2%), loss of appetite 47 (39.2%), nausea 42 (35%)) and cutaneous effects such as Alopecia 99 (82.5%), itchy red bumps 41 (34.2%), dry skin 16 (13.3%). Doxorubicin based regimen was significantly associated with occurrence of ADRs (p=0.003). The severity of self-reported chemotherapy adverse reaction ranged from grade1 to grade 3.

Conclusion: all the recruited paediatric cancer patients developed ADRs which differ in type and severity.

Keywords: *Chemotherapy; Adverse Reactions; Paediatric Cancer Patients*



By Eric Marty

CUPH: PLANETARY HEALTH: HEALTHIER PEOPLE AND COMMUNITIES ON A HEALTHIER PLANET

CU01PH: Planetary Health Education - frameworks, characteristics and opportunities

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Background: The SOPHEA (Strengthening One and Planetary Health in Eastern Africa) project is a trilateral DAAD-funded project between the University of Würzburg, University of Eldoret in Kenya and the Catholic University of Health and Allied Sciences (CUHAS) in Mwanza, Tanzania. It aims to support Planetary Health Education (PHE), research and community engagement in the East African region and beyond and to contribute to several of the Sustainable Development Goals (SDG). To strengthen planetary health education is one of the main project goals.

Methods: This presentation will be a synthesis of the main aspects of global frameworks for Planetary Health Education, and the results of several of the authors own research projects on the topic. Main global frameworks are the "Canmore Declaration", the "12 Cross-cutting principles for Planetary Health Education", the "Planetary Health Education Framework" and the "Association for Medical Education in Europe (AMEE) Consensus statement planetary health and education for sustainable health care". Own research projects include the mixed-methods study "PlanetMedEd", examining Planetary Health in Medical Education in several sub studies, including qualitative stakeholder interviews and a survey of planetary health education in medical schools.

Results: Planetary health education has developed rapidly in the past few years, as demonstrated by the publication of several global frameworks. Ten characteristics of high-quality planetary health education from the own PlanetMedEd-Study include (1) complexity and systems thinking, (2) inter- and trans-disciplinarity, (3) ethical dimension, (4) responsibility of health professionals, (5) transformative competencies including practical skills, (6) space for reflection and resilience building, (7) special role of students, (8) need for curricular integration, (9) innovative and proven didactic methods, and (10) education as a driver of innovation.

Conclusion: To prepare health professionals for the future challenges, Planetary Health Education has to be integrated into all levels of education, including higher education. The SOPHEA project aims at supporting this.

Keywords: *Planetary Health; climate resilience; Sustainable Development Goals; Higher Education; Health Professionals*

CU02PH: Planetary Health Visibility in Kenya: The Role of Campus Ambassadors

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Background: Planetary Health is an emerging field with a global attention. There is a potential influence that the social, political, economic, and other complex interactions have on human health as well as the natural systems. In Kenya, several planetary health emergency issues are connected to human-nature interaction. There is an increasing need to bring to people's understanding, the interconnectedness between humans and nature. Planetary health campus ambassadors (PHCAs) in Kenya, from different professional backgrounds, have played a pivotal role in driving this urgent need. This is aimed at stimulating mind-set change towards interdisciplinary and multi-sectorial understanding of human health from natural systems.

Methods: Interdisciplinary Approach: with respect to planetary health, this method involved integrating knowledge and expertise from various fields such as environmental and social science, public health, education, and policy. Significantly, the ambassadors have used the different avenues to educate, organizing workshops, seminars, and campaigns to achieve the urgency of Planetary Health, the intricate link between human health and nature.

Results: A great existence of strong networks and partnerships within campuses, learning institutions, community-based organizations, and government bodies, creating a united force for positive transformation. Contribution to research and innovation in planetary health, planetary health education, Planetary Heath Young Professionals, global cross cutting courses and seminars, exchange programs, community engagements, grassroots projects on water resources conservation, wetlands, solid waste management, green spaces, mental health, sports, and arts. PHCAs have Leverage online platforms and social media to effectively disseminate information, inspiring a broader audience to participate in finding solutions to present-day planetary health concerns in Kenya.

Conclusion: In essence, PHCAs in Kenya are influential agents of positive change, exemplifying the visibility of planetary health concept in their areas of coverage through a multifaceted approach. There is a further need to strengthen collaboration, expand research efforts, prioritize community engagement, and sustain educational programs, policies, and use of online platforms for maximum impact.

Keywords: *Planetary Health Emergency; Visibility; Planetary Health Campus Ambassadors; multidisciplinary approaches*

CU03PH: An International Network of Veterinary Education for Sustainable Antimicrobial Use and Tackling Antimicrobial Resistance (NetVet4SAMU)

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Background: Antimicrobial resistance (AMR) is a global challenge that leads to pathogens becoming insensitive to existing drugs (diseases that are easily treatable now will become life-threatening in the short to medium term). Spreading of resistance is a complex problem that is driven by many interconnected factors, including biology, but also societal considerations. Therefore, interdisciplinary, multi-sectoral, and innovative approaches to understand the drivers of AMR, feasibility, effectiveness, and economic efficiency of potential interventions are required. The overall aim of this network is to facilitate knowledge sharing among veterinary education providers and students and to increase awareness around the importance of veterinary education to mitigate AMR. Our specific objectives are: 1) Assessing knowledge, attitudes and practices (KAP) of final year veterinary students toward antimicrobial use (AMU) and AMR. 2) Reviewing curricula and assessing knowledge gaps in veterinary education regarding AMU and AMR. 3) Co-development of educational and training materials for sustainable AMU for undergraduate, postgraduate students and continuing professional development (CPD) in leading universities and LMICs.

Methods: A systematic literature review (SLR) to assess the impact of veterinary education, training, and antimicrobial stewardship (AMS) on AMU and AMR. The specific objectives are: 1) to identify the current educational, training, and AMS programs either for undergraduate students or post graduate veterinarians to improve AMU and reduce the risk of AMR, 2) to identify studies that assess the impact of these programs. KAP survey for final year veterinary students will be conducted online for which a purposive sampling technique will be used to sample at least three veterinary schools (50 students each) from each country. Academic staff from participating institutes, teaching internal medicine, infectious diseases, pharmacology, and microbiology, will be invited to participate in an online survey to collect data about the contents of the current curricula related to AMU and AMR.

Conclusion: Our international network for veterinary education will provide a step-change for embedding sustainable AMR solutions into the next generation of involved practitioners, kick-starting a virtuous cycle of awareness and action globally. This network will facilitate connectivity between veterinary education providers and researchers at local, national, and international levels.

Keywords: *Vet-Education; Antimicrobial; Resistance; One Health*

CU04PH: Research and implementation priorities for One & Planetary Health in Africa: Needs assessment, options for collaboration & funding

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Background: Emergence and reemergence of zoonotic diseases and other complex health challenges such as antimicrobial resistance (AMR) require interdisciplinary, multi-sectoral, and innovative approaches to understand the drivers, feasibility, effectiveness, and economic efficiency of potential interventions. However, there are many challenges for research and implementation of One Health (OH) and Planetary Health (PH) particularly in low, middle-income countries (LMICs). The overall aim of this participatory workshop is to identify knowledge gaps, challenges, opportunities, and implementation priorities for OH and PH in Africa. It will also facilitate understanding of each other and will help to build collaboration between different disciplines.

Methods: A multidisciplinary approach will be employed, combining expert consultation, literature review and an online survey for expert opinion. Stakeholders will be invited for a participatory workshop during the annual meeting for Strengthening One and Planetary Health in Eastern Africa (SOPHEA) project in Tanzania, 2023. After an introduction to the aims of the workshop, participants will be given a brief presentation on systems thinking and participatory approaches. This will be followed by roundtable discussions to identify knowledge gaps, challenges, and collaboration opportunities for OH and PH. For each table, a facilitator and notetaker will be available. By the end of the discussion, one participant from each table will present a summary of the discussion. After the workshop, the discussion notes captured by the notetakers will be interrogated. A summary of the findings will be shared with the workshop participants for their feedback. The outcomes of the workshop will be complemented with peer-reviewed and other published literature for cross-referenced information.

Conclusion: This international workshop for multidisciplinary stakeholders will provide an opportunity to identify the needs of the global south, research priorities, and implementation priorities following research outcomes from research work conducted in Africa. Moreover, capturing previous experiences from research outcomes via the needs assessments will help identify focal points for future network activity. This network will facilitate connectivity between medical education providers and researchers at local, national, and international levels.

Keywords: *One Health; Planetary Health; Challenges; Opportunities*

CU05PH: The SOPHEA Planetary Health Education Toolbox – a resource for strengthening education on the connections of climate, environment and health

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Background: The SOPHEA (Strengthening One and Planetary Health in Eastern Africa) project is a trilateral DAAD-funded project between the University of Würzburg, University of Eldoret in Kenya and the Catholic University of Health and Allied Sciences (CUHAS) in Mwanza, Tanzania. It aims to support Planetary Health Education (PHE), research and community engagement in the East African region and beyond and to contribute to several of the Sustainable Development Goals (SDG). The aim of the toolbox is to enable learners and teachers to implement PHE in their faculty by providing guidance, frameworks, and materials to develop their own PH curriculum, integrate PH into existing lectures or enhance their knowledge through self-study.

Methods: The SOPHEA team and colleagues have performed an extensive search of literature for background reading, existing courses, case studies, education initiatives and videos. The material in the longlist was grouped in different categories, the most relevant material selected for the shortlist and uploaded to the toolbox. An additional feature are the recordings of the lectures of the 2023 SOPHEA Summer School in Würzburg and model PPT presentations. All materials are accessible through the Moodle-based platform „OpenWueCampus“hosted by the University of Würzburg.

Results: The Toolbox 1.0 will officially be launched at the 2023 CUHAS conference and is freely accessible after registration on”OpenWueCampus“. Users will find relevant material showcasing transformative examples of mitigation and adaptation in several categories: Ecosystem and Biodiversity, Heat, Pollution, Nutrition, Infectious Diseases, One Health, Child Health, Migration, Climate Psychology, Indigenous and traditional Knowledge, Women´s Health and Gender Dynamics, Health systems and Green Health Care, and more. The submission of additional material, new case studies and feedback from users is highly appreciated.

Conclusion: The toolbox can support institutions of higher learning, lecturers as well as students to advance knowledge on and curriculum integration of One & Planetary Health related topics and thus promoting transformation towards sustainability and climate resilience.

Keywords: *Planetary Health; Climate resilience; Sustainable Development Goals; Higher Education; One Health*

CU06PH: Women's health implications of food security and climate change

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Background: The intricate relationship between food security, climate change, and women's health remains a critical global health concern that continues to gain less attention, particularly in the global south. Food security, comprising of availability, accessibility, utilization, and stability of food is an important component of the fundamental human right while climate change causes a drastic disruption to the natural environment. Women, being the backbone of food production, bear a unique brunt at the intersection of these interconnected issues. The study aims to provide an exploration of these connections coupled with awareness creation of gender-responsive policies to enhance the well-being and resilience of women in Nigeria.

Method: The study was a cross-sectional analysis using data available from scientific databases like AJOL, Scopus, PubMed, and nationally published data on women's health and food security. Data was extracted from studies available in these databases from 2010-2023 in Nigeria. Articles were assessed to ensure the inclusion criteria were met; eligible articles include studies on the interaction between climate change, women's health, and food security.

Results: Women's workforce constitutes an estimated 70% of Nigeria's agricultural sector and 6% of the female gender is represented in the policy-making sector.

There was a general trend of increased level of poor access to healthcare the women in climate-affected region, and cultural norms is an essential factor limiting women's autonomy, thus hindering them the liberty to decide on their health. The analysis further revealed that women also encounter challenges in accessing food resources, as climate-induced changes in food security, such as water scarcity, affect their routine daily tasks.

Conclusion: In the race towards addressing climate change and food insecurity, women's empowerment is the key to resilience. Women's voices in Nigeria must be central in decision-making process and the implementation of policies should be gender responsive as this will lower greenhouse gas emissions by 10-29%.

Keywords: *Climate change; Women's health; Food Security*

CU07PH: Planetary Health Campus Ambassador Program: Promoting Sustainability and Health Across the Globe

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Background: As global environmental challenges escalate continuously, there is a growing need for initiatives bridging the gap between environmental sustainability and human health. The Planetary Health Campus Ambassador Program (PHCA) designed by the Planetary Health Alliance to address this issue by empowering committed young leaders to advocate for Planetary Health principles within their educational institutions, communities and beyond. The program aims to educate, engage, and inspire the next generation of leaders to act on issues related to climate change, biodiversity shifts, nutrition, mental health, global pollution, and civil strife and displacement, infectious disease and NCDs, water scarcity and changing food systems.

Methods: The program is implemented through a collaborative effort between environmental organizations, academic institutions, and recruited-dedicated student ambassadors. They receive comprehensive training on key PH topics, communication strategies, and advocacy skills. They then organize and execute a range of educational events, campaigns, and initiatives within their respective institutions.

Results: With 259 PHCAs in more than 70 countries during the last 5 years, the PHCA Program has achieved significant results since its inception. Key outcomes include increased awareness about PH issues, hence greater understanding and concern for these critical issues, education and engagement through workshops, seminars, interactive events, and community education on sustainable practices, inspiring environmentally conscious choices. Policy advocacy through advocating for environmentally friendly policies and practices within their institutions, leading to positive changes in campus sustainability efforts. Networking and collaboration between like-minded individuals and organizations, fostering a supportive network of PH advocates.

Conclusion: The PHCA Program is a valuable initiative that has demonstrated its potential to drive positive change at the intersection of environmental sustainability and human health. By equipping young leaders with knowledge and skills, the program empowers them to become advocates for PH principles on their campuses and in their communities and beyond. It's therefore vital to invest in youth-led initiatives that address the urgent challenges facing our planet and our well-being.

Keywords: *Planetary Health; Planetary Health Campus Ambassador; Planetary Health Alliance; Sustainability; Youth leadership*

CU08PH: Thriving in the Concrete Jungle: The Impact of Urban Farming and Green Spaces on Eldoret's Urban Dwellers' Food Security and Mental Well-Being

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Background: In the rapidly urbanizing world, urban dwellers face the challenges of food security and mental well-being. Eldoret is the fifth largest city in Kenya, located in the Rift Valley region and serves as the capital of Uasin Gishu County has a population of about 500,000 people. The expansion of concrete jungles in Eldoret has led to concerns about limited access to fresh, nutritious food and the adverse effects of urban living on mental health. To address these issues, urban farming initiatives and the creation of green spaces within cities have gained momentum as potential solutions. This study explores the transformative potential of urban farming and green spaces in addressing the challenges within urban environments.

Methods: This study employs a multidisciplinary holistic approach, combining qualitative and quantitative research methods. A comprehensive literature review forms the foundation for understanding the existing body of knowledge on urban farming, green spaces, food security, and mental well-being. Additionally, empirical data will be gathered through surveys, interviews, and case studies in diverse urban settings to provide a nuanced perspective.

Results: The findings from the literature review reveal a multifaceted impact of urban farming and green spaces on urban dwellers. Urban farming initiatives are likely to enhance food security by increasing access to fresh produce, reducing food deserts, and fostering community engagement. Moreover, the presence of green spaces in urban areas is associated with improved mental well-being, including reduced stress, enhanced mood, and increased social cohesion. These findings underscore the potential of integrating agriculture and greenery into urban landscapes to address pressing urban challenges.

Conclusion: In conclusion, urban farming and green spaces have the potential to play pivotal roles in enhancing food security and promoting mental well-being among urban residents. This research will highlight the need for Eldoret's urban planners, policymakers, and communities to prioritize the integration of these elements into urban development strategies. By doing so, we can create healthier, more resilient, and thriving urban environments.

Keywords: *Climate change; Urban farming; Green spaces; Food security; Mental health*

CU9PH: Nutrition and planetary health: Advocating for transparency, accountability, and participation in public budgets

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Background: A healthy planet directly translates to healthy nutritional status among plants, animals, and people at large. Climate change plays a major role in promoting an increase in the triple burden of malnutrition globally which has led to an increase in morbidity and mortality through under-nutrition. Kenya has been experiencing the worst drought situation in the last 40 years. Frequent extreme weather has resulted in: Food insecurity and nutrients loss (protein, iron, and zinc), drying up of rivers, scarcity of safe drinking water and pollinating insects, poor agricultural outcome and loss of income. The government has a constitutional and civic duty to achieve the Right to available, affordable, and safe Food for all Kenyans as required under Article 43 of the Constitution. Despite this, several Kenyans are still grappling with malnutrition without knowing their constitutional right or the amount of budget set aside to prevent or correct any nutritional problems brought about by adverse climate change.

Methods: Advocacy of budget transparency to ensure that governments are investing in nutrition and health in a way that is aligned with the Sustainable Development for a healthier people and planet. Implementation was done through a community-based organization called Nutrition Alliance for Planetary Health and Budget Transparency (NAPHBUT).

Results: Taking part in several conferences and summits to share the work of NAPHBUT, this included the Africa Climate Summit in Kenya, Pan African Climate Justice Alliance, Mama Doing good initiative and Kenya Climate Innovation Center conference in Kenya. NAPHBUT has also been involved in forming partnerships with different organizations to ensure the nutrition agenda in planetary health is established. The CBO has mobilized and registered members of different fields. However, more than 50% of its members are nutritionists who are brought together by Planetary Health advocacy.

Conclusion: A movement for people working in the field of nutrition, planetary health, and budget to advocate for transparency, accountability, and participation in public budgets has been established. The movement will be vital for preventing and mitigating the effects of climate change on the nutritional well-being of populations.

Keywords: *Planetary Health; Nutrition; Budget*

CU10PH: Integrating Planetary Health in Health Professional Education Curriculum

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Background: WHO stipulates that between 2030 to 2050, climate change will cause 250,000 additional deaths yearly. The health profession has a huge responsibility in preparing healthcare practitioners and healthcare systems for anticipated adverse climate health risks. As the global community grapples with the profound challenges posed by climate change, integration of planetary health into healthcare profession Education (HPE) curricula emerges as a paramount imperative. This integration is crucial in equipping the next generation of healthcare professionals with knowledge and skills to address climate induced health crises. Healthcare professionals are trained to advocate for quality healthcare, communicate risks, manage healthcare systems, and remain trusted community leaders, to create planetary health awareness. Through advocating for interdisciplinary education that encompasses the environmental and social determinants of health, planetary health guarantees future healthcare professionals the requisite skills to address climate-related challenges towards healthier people and the planet.

Methods: A mixed-methods approach was employed, involving a review of existing curricula, surveys of health professional educators, and in-depth interviews with key stakeholders. The study assessed the current status of planetary health integration, identified barriers and facilitators, and developed recommendations for curriculum enhancement.

Results: Findings indicate that while some health professional programs have started to incorporate planetary health concepts, there is a significant gap in comprehensive integration. Educators recognize the importance of planetary health but face challenges related to curriculum design, resource allocation, and faculty training. However, examples of successful integration strategies were identified, providing valuable insights.

Conclusion: Integrating planetary health into health professional education curricula is crucial for preparing future healthcare providers to address global health challenges. This study recommends the development of interdisciplinary modules, faculty training programs, and increased collaboration between institutions and stakeholders to promote the integration of planetary health principles. By enhancing the curriculum, we can better equip health professionals to contribute to both human and planetary well-being.

Keywords: *Planetary Health; Health Professionals Education; Climate induced health crises*

CU11PH: Youth Health Implication of Mental Health and Climate Change

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Background: Recent climate change and mental health challenges are now widely acknowledged in low-and middle-income countries in Africa. Climate change has shown an effect on mental health because of issues related to extreme weather events such as floods and droughts which evoke feelings of hopelessness and homesickness often related to mental ill health. Many of the affected turn to alcohol or other substances as a coping mechanism to deal with the stressors. Art has a lot of benefits in which it connects more directly with emotional and personal aspects of climate change.

Method: Art has indisputable benefits for mental health and wellbeing. It is also associated with enhanced self-identity through gaining skills. Art inspired by climate change aims to raise the visibility of the crisis and engage audiences politically and environmentally. This can be done by providing peer to peer mentorship programs. YOUTH ENGAGEMENT IN ART INITIATIVE! is a mental health organization that targets youth artists within existing organizations in Kiamaina village, Mutira ward in Kirinyaga county to take part in a skill building program. The project defines art as painting, photography, craft, drama, and music among others.

Results: In support for action to address climate change we are engaged in community advocacy through art that uses sustainable environmentally friendly media. By having activities such as climate-awareness, therapists can offer support for those with climate change – induced anxiety, while peer support programs create awareness for communities to build resilience. Climate change and mental health represent a rapidly growing area of concern, especially for the youth. YEA initiative has been able to communicate the impact of climate change through art and provided better coping mechanisms such as engaging in art or music activities.

Conclusion: We aim to demonstrate through peer-to-peer support and skills to enhance resilience to climate change and mental health issues.

Keywords: *Climate change; Youth mental health; Art*

CU12PH: Leveraging Fish Microbial Genomics to Prevent Antibiotic Resistance Spread through Food Fish Supply Chain

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Background: The Global Challenges Networking Partnership funded by the Academy for Medical Sciences. under aims to create and maintain an international Network of researchers to work on reducing the public health risk of antimicrobial resistance spread through fish consumption. This is a transdisciplinary Network includes microbiologists, geneticists, nutritionists, anthropologists, human geographers, biotechnicians, bioinformaticians, epidemiologists, aqua-culturists, policymakers and farmers from around the world who can work on multidisciplinary research with a view to providing lasting solutions to the challenge.

Methods: To create a strong and sustainable international network of researchers to address the challenges of antimicrobial resistance spread food fish consumption and along the supply chain, strengthen capacity of researchers in LMIC to evidence the links between fish consumption and foodborne disease risk, identify hotspots of emergence and transmission risk of antimicrobial resistance using Whole Genome Sequencing approach to investigate the best sites of deployment for hygiene interventions, enhance microbiological hazard and antimicrobial resistance surveillance in the animal produce food chain.

Results: Some of the activities undertaken so far include the signing of a collaboration agreement between University of Eldoret and Royal Holloway University of London, two networking workshops held both in Kenya and United Kingdom, capacity building of Kenyan researchers on the use of Whole Genome Sequencing as an advanced tool for detection of antimicrobial resistant bacterial strains and a recent field activity to map out study sites for preliminary survey on source and at community level

Conclusion: The team has held two networking activities both in Kenya and the UK to forge new links and generate innovative transdisciplinary research ideas to address global health challenges and implementing a pilot study to test validate the research tools. The networks formed will be better positioned to compete for more substantive grants offered by future funding initiatives.

Keywords: *Antimicrobial Resistance; Genomics; Network*

CU13PH: Advancing Collaboration across borders through Genomic Innovation: The University of Eldoret Genetics and Genomics Research and Training Laboratory

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Background: In the pursuit of promoting good health, sustainable environment and efficient agriculture, genetics and genomics have emerged as indispensable tools. The University of Eldoret Genetics and Genomics Research and Training Laboratory (FGGRTL) is dedicated to leveraging molecular biology and cutting-edge technologies for the enhancement of agricultural and health practices.

Methods: This abstract presents the laboratory's mission, objectives, core services, and potential for fostering collaboration and innovation in genomics. The primary mission is to expedite the translation of scientific discoveries into tangible services to advance research value-added products. Our objectives encompass leveraging cutting-edge sequencing techniques to unravel the genetic blueprints of various species, thereby enhancing our understanding of their biology and potential for improvement.

Results: The FGGRTL offers comprehensive core services, including DNA and RNA extraction, DNA quantification, PCR amplification, and genotyping. Our core instrumentation features advanced equipment such as the QuantStudio 5 RT-PCR system, Nanodrop spectrophotometers, and ultralow temperature freezers among others to ensure the highest standards of precision and reproducibility in genomic analyses. Some of the research already actualized in the FGGRTL includes DNA barcoding of fish species, whereas others in advanced stages include rice biodiversity studies for resistance to blight, diversity studies, and gene expression, and leveraging fish microbial genomics, Bat-Virus research among others.

Conclusion: By fostering partnerships, we aim to enhance research which can amplify the impact of our research, accelerating progress toward sustainable productivity in agriculture, microbiology, environment, and biotechnology. Our commitment to further equip the lab with cutting-edge instrumentation and a skilled team of scientists, positions us as a catalyst for transformative change in the genomics and molecular research. We invite researchers, institutions, and industries to explore collaborative opportunities with the University of Eldoret - FGGRTL. By pooling our resources and expertise, we can unlock the full potential of genomics in health, agriculture, and environmental conservation to ultimately benefit society.

Keywords: *Genomics Lab, University of Eldoret, collaboration*

CU14PH: Research and Implementation Priorities in One Health and Planetary Health: Needs Assessment, Options for Collaboration and Funding

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Background: In spite of a growing interest in One Health and Planetary Health, and an exponential growth in the number of academic papers published on both topics in recent years, there are still research gaps and implementation gaps. Research gaps include how to understand entire Socioeconomic Systems and how to identify key points for intervention. Key implementation challenges include where best to implement research findings, and how to initiate and manage change. Many disciplines need to work together to tackle inter-related challenges – including but not limited to, environmental science, human and animal health, behavioural science, economics, regulatory and policy science, data science, implementation science and systems science. East African researchers and practitioners with expert local knowledge are best placed to identify key local challenges that may require external funding to address. This chaired workshop will provide a platform for researchers and practitioners to come together to explore how best to work collaboratively, how to identify the priority research gaps and how to target the appropriate funding calls.

Methods: Established and Early Career Researchers from Tanzania and Kenya, along with international researchers attending the CUHAS conference, will come together to discuss key challenges to One and Planetary Health in East Africa and how these can be addressed with the support of partners from local and international universities and research institutes.

Results: Breakout groups will capture key support and resources needed to ensure identified gaps can be acted on, including skills needed to formulate research questions; how to write and apply for grants; how to access funding opportunities; and what skills are needed to undertake and deliver projects once grants are awarded. The workshop will identify which of these current factors present the main challenges. Priority actions will be identified and tasked.

Conclusion: The outcome of the workshop will be a stronger understanding of One Health and Planetary Health research gaps in East Africa; identification of current barriers to addressing these challenges; better awareness of available funding streams and how to apply for them; identification of skills gaps and how to fill them; and recommendations for next stage actions.

Keywords: *Funding; Implementation; Research; Skills; Socio Economic Systems*

CU15PH: Animals in Planetary Health – Integrating Approaches to One and Planetary Health

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Background: Over recent decades, several emerging academic fields have aimed to look at the complex and interdependent assemblages of life on Earth. Interest in environmental health began to grow in the 1960s and 70s. The field of One Health emerged later in the 20th Century as a unified approach to the health of humans, animals, and the environment. It was formalised in the Manhattan Principles on 'One World, One Health' in 2004 (in the wake of the first SARS pandemic) and was refreshed in the Berlin Principles on One Health in 2019 (ironically on the eve of the second). Concurrently, Planetary Health emerged not only an academic field but also a movement for change, to lobby for the preservation of the natural systems on which human civilisation depends. Human and animal health are intertwined, and both are interdependent on the environment. Whether One Health and Planetary Health are complementary approaches to the same challenge, whether one is a subset or subdivision of the other, or whether they are simply different names for the same thing, has been open to debate; however, not least because the former emerged from and is more embedded in veterinary science, while the latter emerged from human medicine and public health.

Methods: During this session, researchers from Tanzania, Kenya and across the world will discuss their research projects, lessons identified, linkages between human and animal health, and key actions for the future to ensure improved health for all.

Results: The aim of this session is to highlight the inter-relatedness of human and animal health; their shared susceptibility to environmental change and emerging pathogens; and how doctors, veterinarians, public health practitioners, environmental scientists and others can better understand the keyways in which different disciplines need to come together to tackle shared challenges.

Conclusion: The conclusions of the session will be a series of action points to help inform a longer discussion on future research priorities scheduled for the final session on Day 2 of the conference.

Keywords: *Complexity; One Health; Planetary Health; Systems Thinking; Trans- disciplinarity*

CU16PH: Integrating Climate, Environment & Human Health at higher learning institutions in Tanzania through University Planetary Health Clubs

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Background: New health threats result from climate change, like changes in vector-borne diseases, malnutrition due to droughts and flooding, direct and indirect physical and mental health effects through extreme weather events. In Tanzania, it is a threat to public health and persistence of future generations. 61 % of Tanzanians population is under 35 years of age, this age group has a huge role to bring solutions through advocacy, research and leadership. Planetary health education needs to be integrated in the curriculum of Tanzania universities, to prepare them for emerging health threats resulting from climate change and environmental dynamics.

Methods: Surveying the Tanzania Universities and higher learning centers, we were able to engage 3 Universities located in Mwanza and Geita region which were: CUHAS, SAUT and Chato College of Health Sciences and Technology. Engagement of universities through workshops, seminars, training, mentorship, and student-centred clubs. To encourage the use of research, awareness campaigns, community based and environmental programs to foster evidence-based solutions. Multisectoral approach through partnership and collaboration workshops at CUHAS for sensitization of medical students at CUHAS and Chato College on planetary health, environmental programs, planting of trees and environmental cleaning along the shore of Lake Victoria at Kamanga ferry. through the use of social media and television. Community programs included awareness campaigns.

Results: In collaboration with SOPHEA, we officially launched CUHAS Planetary Health Club (CPHC) on 26th November 2022 with a total of 104 members which include CUHAS Staff and medical students from all courses, and we are open to more members. We established a Planetary Health Club at Chato College of Health Sciences and Technology in August 2023. We organized a Planetary Health

Conclusion: Planetary health education in universities is a very important aspect to bring sustainable solutions to challenges resulting from climate change. Furthermore, creating environmental health leaders and decision makers. Planetary health should be integrated in the learning curriculum of medical universities to prepare them for possible health outcomes resulting from climate change and have a resilient learning system.

Keywords: *Planetary health education; Youth engagement; Climate change*

CURH: REPRODUCTIVE AND CHILD HEALTH

CU01RH: Knowledge, attitude, and practice of kangaroo mother care among mothers with low-birth-weight babies at Sengerema district hospital

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Background: Low birth weight (LBW) affects roughly 15% of infants worldwide due to preterm birth, intrauterine growth retardation, or both. Studies have shown that LBW infants account for about 60 to 80% of neonatal fatalities. Every year, 25 million LBW babies are born worldwide, with the vast majority coming from low- and middle-income countries, including Tanzania. Cost-effective interventions such as Kangaroo Mother Care (KMC) can significantly reduce the number of neonatal deaths and are deemed necessary in resource-limited settings. Thus, appropriate knowledge, attitude, and practice of nursing mothers towards KMC are crucial for better implementation of KMC and clinical outcomes of babies. However, few studies have investigated the knowledge, attitude, and practice of nursing mothers with LBW babies toward KMC in Tanzania.

Methods: A cross-sectional hospital-based study was conducted among post-natal mothers with LBW babies at the neonatal unit in Sengerema Hospital. A pre-tested structured questionnaire was used to collect socio-demographic data and assess the knowledge, attitudes, and practice toward KMC. Multiple logistic regression analysis was performed using SPSS version 20 software to identify the factors associated with knowledge, attitude and practice.

Results: A total of 125 post-natal mothers were surveyed, with a 100% response rate. Based on this finding, the overall proportion of good knowledge, favourable attitude and good practice of kangaroo mother care were 29.6%, 81.6% and 75% respectively. Formal education (AOR; 3.70; 95%CL; (1.39-20.47), urban residency (AOR;7.58;95%CL; (2.39-23.90), employment (AOR;3.70;95%CL;(1.17-11.67), health condition of the baby (AOR;6.76 95%CL;(2.74-16.69), source of information (AOR;2.71;95%CL;(1.01-7.23), multigravidity (AOR;2.61;95% CL;(1.20-5.67) as well as spontaneous vaginal delivery (AOR;3.05,95% CL;(1.54-6.04) were statistically significant factors for good knowledge, favourable attitude and good practice of mothers on kangaroo mother care.

Conclusion: Overall, knowledge about KMC is low among new mothers of infants with LBW. However, most had a favourable attitude and good practice of KMC. To improve outcomes, KMC education needs to target rural areas, with families of lower socio-economic status. Information provided by health providers as well as through mass media has the largest impact on knowledge and would be important strategies to address in future education interventions.

Keywords: *Kangaroo Mother Care; Low birth weight babies; Premature neonates*

CU02RH: Prevalence and factors associated with red blood cell alloimmunization among pregnant women attending a tertiary hospital in Northwestern Tanzania

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Background: Globally, the prevalence of red blood cell (RBC) alloimmunization among pregnant women varies from 0.3% to 16%; with quite several RBC alloantibodies responsible for haemolytic disease of foetus and newborns (HDFN) being identified. RBC alloimmunization not only poses a threat to developing foetuses and newborns but also carries a potential threat to a woman during transfusion. The study was designed to determine the prevalence, specific RBC alloantibodies and factors associated with RBC alloimmunization among pregnant women at Bugando Medical Centre (BMC), Mwanza, Tanzania.

Methods: A total of 768 pregnant women were enrolled in a cross-sectional study done at a tertiary hospital in Northwestern Tanzania from March 2022 to February 2023. A structured questionnaire was used to collect participants' demographics and clinical history. Eight (8) ml of peripheral blood was collected in an EDTA tube and screened for alloantibody by indirect coombs method using the conversion tube technique. Three commercially purchased red cell-antigen screening cell panels were used, followed by antibody identification by incubating participants' RBC with the commercially known monoclonal antibodies. Bivariate analysis was performed to assess the association between dependent and independent variables using Chi-square ($\chi 2$) test and Fisher's exact test. The level of significance was considered at $p<0.05$.

Results: The prevalence of non-rhesus red blood cell alloimmunization was 2.6% (20/768). Among the pregnant women, 97.0% (745/768) were rhesus positive. Anti- C, K, and -E were the common alloantibodies each contributing 25%. Gravidity ($p< 0.001$), history of abortion ($p =0.010$), parity ($p <0.001$), history of stillbirth ($p<0.001$), previous history of blood transfusion ($p <0.001$) and RBC disorders ($p=0.021$) were significantly associated with non–RhD red blood cell alloimmunization.

Conclusion: The prevalence of other RBC alloimmunization is within acceptable range. Pregnant women with a history of abortion, SCD, prior history of stillbirth, high parity, and prior history of blood transfusion are at increased risk for non-rhesus alloimmunization.

Keywords: *RBC alloimmunization; pregnant women; significant alloantibodies*

CU03RH: Early versus late amniotomy and associated feto-maternal outcomes among women delivering at Bugando Medical Centre, Mwanza, Tanzania

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Background: Amniotomy is one of the most commonly performed procedures in modern obstetric practice; however preliminary data does not support its routine use in labour management. Despite the fact that amniotomy is a commonly performed procedure in most centres in Tanzania, and at Bugando Medical Centre (BMC) in particular, there is little published data on this subject. This study aimed at determining the early versus late amniotomy feto-maternal outcomes among women delivering at BMC, a tertiary care hospital in northwestern Tanzania.

Methods: This was cross-sectional study conducted at BMC. A total of 426 delivered women at BMC were enrolled from June 2022 to March 2023. The study was conducted in the Obstetrics labour and postnatal wards of BMC. Data on each patient was collected using pretested questionnaire prepared for the study and analysed using STATA version 15. Determination and comparison of feto-maternal outcomes with amniotomy were obtained by using X2 while the association between early amniotomy and poor foetal maternal outcomes was determined by using multivariate logistic regression after adjusting possible confounders; p-value of less than 0.05 was considered.

Results: The majority of our participants had 25-34 years; 67 women had newborns with poor outcomes. Earl amniotomy was found to be significantly associated with lower segment caesarean section (OR 4.19; 95% [2.62-6.70]; p=<0.001) and primiparous respectively (OR 1.7; 95% [1.08-2.7]; p-value =0.02

Conclusion: Our study findings demonstrated that early amniotomy is one of the most commonly performed procedures in our labour ward. However, early amniotomy was found to be associated with a high rate of caesarean section which was significantly higher among primiparous. Since, in the third world countries, the late procedure is associated with maternal morbidity, it is important to avoid unnecessary early rupture of membrane during labour management. A randomized clinical trial should be conducted in our setting to assess the effect of early versus late amniotomy on maternal and foetal outcomes.

Keywords: *Amniotomy; LSCS; Primipara*

CU04RH: Emergency peripartum hysterectomy: indications, histopathological patterns and intraoperative maternal complications at Bugando medical centre and Sekou Toure regional hospital in Mwanza, Tanzania.

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Background: Emergency peripartum hysterectomy (EPH) is a life-saving surgical procedure performed to control excessive bleeding and severe uterine infection following delivery. This study aimed to determine the indications, histopathological patterns and intraoperative maternal complications among women who underwent Emergency Peripartum Hysterectomy (EPH).

Methods: A cross-sectional study was conducted at Bugando Medical Centre (BMC) and Sekou Toure Regional Referral Hospital (SRRH) from May 2022 to May 2023. The data collected were analysed using STATA version 15.

Results: A total of 66 participants were enrolled; 42 from BMC and 24 from SRRH. The median age was 30 (Interquartile range 16-46) years. The majority were referral from lower facilities; among all participants, 60.61% had an hysterectomy carried out within 24hrs post-delivery. Septic uterus (36.36%), ruptured uterus (25.75%) and uterine atony (22.73%) were the common clinical indications. Plasmatic endometritis (24%), placenta accreta spectrum (23%) and suppurative inflammation (18%) were the most frequent histopathological findings. The most commonly encountered intraoperative complication was excessive haemorrhage that necessitated blood transfusion of ≥ 3units (51.52%), cardiac respiratory arrest (7.58%) and (3.03% ureteric injuries.

Conclusion: **S**eptic and morbidly placenta adherent spectrums were the most common clinical and histological findings. We stress the need to improve infection prevention practices in our labour wards and post-natal follow up. We also call upon further studies to analyse the link between morbid adherence placenta and sepsis.

Keywords: *Emergency peripartum hysterectomy; Histological Patterns; Maternal complication*

CU05RH: Maternal and Fetal Outcomes In Low-Risk Prolonged Gestation: A Study Of Pregnancies Beyond 40 Weeks At Bugando Medical Centre Mwanza Tanzania

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Background: Prolonged pregnancies are those that extend beyond 40 weeks and 6 days of gestation. The rate of prolonged pregnancies is influenced by both population and regional management tactics. Studies have reported varying prevalence rates of prolonged pregnancies, ranging from 3% to 20%, with some estimating that they account for more than 7% of all pregnancies. Prolonged pregnancies, affecting up to 10% of pregnancies, pose risks to both the mother and the foetus. These risks include complications such as caesarean section and perineal tear for the mother, and outcomes like a big baby, intrauterine foetal death (IUFD), hypoglycaemia, foetal death, and 5-minute Apgar scores of ≤ 6 for the baby. Emerging evidence suggests that the incidence of complications increases after 40 weeks of gestation, yet the optimal timing for delivery and mode of delivery remain subjects of debate among clinicians.

Methods: A hospital-based cross-sectional study was conducted in the Labor and Postnatal wards of Bugando Medical Centre. A total of 1,208 inpatients who met the inclusion criteria were enrolled. Demographic and clinical information was collected using a structured questionnaire and recorded in Epi info software version 7.2.4.0. Data analysis was performed using the same software.

Results: Among the 1,208 enrolled participants, approximately 19.57% of low-risk pregnancies experienced prolonged gestation. Prolonged pregnancies were found to be associated with the delivery of big babies. The rate of caesarean section was notably higher among prolonged pregnancies, reaching 40.3%, and this difference was statistically significant.

Conclusion: This study contributes valuable insights into the challenges posed by prolonged pregnancies and highlights the need for comprehensive guidelines and clinical strategies to address these issues, ultimately improving the outcomes for both mothers and their infants. Further research and collaboration among healthcare professionals is essential to refine management approaches and reduce the risks associated with prolonged pregnancies.

Keywords: *Prolonged gestation; Caesarean section; Big baby*

CU06RH: Exploring healthcare-seeking behaviours and factors influencing non-adherence among cervical cancer patients attending Bugando Oncology Clinic in Mwanza, Tanzania

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Background: Cervical cancer is the leading cause of both cancer incidence and cancer-related deaths in Tanzania. Patients diagnosed with cervical cancer require specialized attention for months or even years. For those diagnosed with cervical cancer, not adhering to medical recommendations can strain the provision of cancer care services by increasing demand for advanced and costly treatments. Limited understanding exists regarding how Tanzanian cervical cancer patients seek relief and the factors that influence their non-adherence to cancer care in this specific setting. To explore the healthcare-seeking behaviours and identify factors influencing non-adherence among cervical cancer patients attending Bugando Oncology Clinic in Mwanza, Tanzania.

Methods: The study employed a community-based qualitative study with a phenomenological design. It was conducted at the households of 15 families with non-adherent cervical cancer patients, after obtaining their information from the chemo radiation treatment registries of Bugando Oncology Clinic in Mwanza, Tanzania. Data were gathered through in-depth interviews with the informants, and NVivo 12 computer software was utilized to facilitate data coding, storage, and retrieval.

Findings: Patients sought medical attention at nearby hospitals, lacking proper capacity for accurate cervical cancer diagnosis. This led to frequent misdiagnoses, resulting in treatments for unrelated conditions like UTIs, PIDs, and typhoid. Some patients turned to traditional remedies and self-medication to manage cervical cancer symptoms. Financial constraints emerged as a major obstacle, affecting affordability of treatments, transportation, and accommodation. Additionally, the malfunctioning radiotherapy machine posed a significant barrier to effective treatment. A lack of comprehensive information on their condition, treatment options, and schedules further hindered adherence.

Conclusion: Patients face challenges due to inaccurate cervical cancer diagnoses at nearby facilities, leading to mismanagement. Some turn to traditional remedies and self-prescribed medications, emphasizing the need for improved access to appropriate healthcare. Financial constraints, the malfunction of the single available radiotherapy machine and limited information hinder treatment adherence. Addressing these issues is crucial for improving care and outcomes for cervical cancer patients in the region.

Keywords: *Healthcare-seeking behaviours; Non-adherence; Cervical cancer; Patients*

CU07RH: Prevalence of Maternal Hypocalcemia and its Association with Preeclampsia among Pregnant Women at Bugando Medical Centre, Mwanza Tanzania

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Background: Preeclampsia is a multisystem disorder of uncertainty aetiology causing increased maternal mortality. Maternal hypocalcaemia has been implicated as among the risk for preeclampsia. This study was designed to determine the magnitude of maternal hypocalcaemia and its predictors as well as assess the association of maternal hypocalcaemia with preeclampsia-eclampsia among pregnant women at Bugando Medical Centre.

Methods: This study was both, cross-sectional study to determine the prevalence of maternal hypocalcaemia and its predictors, as well as matched case-control study to determine the association of preeclampsia-eclampsia with maternal hypocalcaemia. Data was collected using a standardized, pre-tested, and coded questionnaire, then entered into a computer using Microsoft Excel 2013, and analysed using STATA version 15. To determine predictors of maternal hypocalcaemia, we used logistic regression analysis and to determine the association between maternal hypocalcaemia and preeclampsia we used conditional logistic regression analysis.

Results: The study enrolled 651 participants; majority were aged less than 35 years (79.72) with a mean age of 29.49±5.61 years. The prevalence of hypocalcaemia was 23.2%. Predictors of maternal hypocalcaemia were multiple pregnancy (OR 11.8; 95% CI [5.1-27.5]; p-value <0.001), previous history of preeclampsia (OR 2.1; 95% CI [1.1-4.1]; p-value 0.028), lack of calcium supplementation during antenatal visits (OR 11.8; 95% CI [2.4-57.8]; p-value 0.002), number of antenatal visits less than 4 (OR 1.8; 95% CI [1.1-2.9]; p-value 0.013), residing in rural (OR 2.8; 95% CI [1.5-5.4]; p-value 0.002), and MgSO4 and/or Calcium Channel Blocker (OR 18.6; 95% CI [6.1-57.0]; p-value <0.001). Hypocalcaemia was significantly associated with preeclampsia-eclampsia (OR 9.3; 95% CI [5.0-17.3]; p-value <0.001).

Conclusion: We found that one out of five pregnant women had maternal hypocalcaemia. The predictors of maternal hypocalcaemia were having multiple pregnancies, previous history of preeclampsia, lack of calcium supplementation during antenatal visits, having less than 4 antenatal visits, and residing in rural areas. Maternal hypocalcaemia was associated with preeclampsia-eclampsia. We recommend routine screening for maternal hypocalcaemia, calcium supplementation during antenatal visits, and education regarding calcium-rich food should be emphasized.

Keywords: *Maternal hypocalcaemia; Preeclampsia-Eclampsia; Calcium*

CU08RH: Asymptomatic bacteriuria and its associated foetal-maternal outcomes among pregnant women delivering at Bugando Medical Centre in Mwanza, Tanzania

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Background: Asymptomatic bacteriuria (ASB) occurs in 2 to 15% of pregnant women globally, and if left untreated can be associated with adverse feto-maternal outcomes. The prevalence of ASB at Bugando Medical Centre (BMC) over the past decade is 13% to 17%, but it's associated feto-maternal outcomes has not been evaluated to expedite preventive measures.

Methods: An analytical cross-sectional study involving 1,093 pregnant women admitted and planned for delivery at BMC was conducted. Sociodemographic and clinical characteristics, and mid-stream urine were collected for analyses. Concurrently, feto-maternal outcomes were assessed within 72 hours after delivery.

Results: The median age of enrolled participants was 29 years [range: 15-45 years]. The proportion of pregnant women with ASB was 16.9% (185/1093) and was predicted by having anaemia (OR 5.0; 95% CI 3.8-8, p-value <0.001) and history of admission during antenatal care (ANC) period (OR 4.3; 95% CI 3.1-6.1, p-value <0.001). Of all the enrolled patients 82 (7.51%), 65 (5.95%), 49 (4.49%) and 79 (7.23%) had pre-term labour (PTL), premature rupture of membrane (PROM), preeclampsia, and delivered newborns with Low birth weight (LBW), respectively. The respective proportions among 185 patients with culture positive were 25.41%, 17.3%, 9.19% and 12.43%. On multivariate logistic regression analysis, PTL (OR 8.5; 95% CI 5.3-13.6, p-value <0.001); PROM (OR 5.5; 95% CI 3.3-9.3, p-value <0.001), preeclampsia (OR 2.8; 95% CI 1.5-5, p-value <0.001) and low birthweight (LBW), OR 2; 95% CI 1.2-3.7, p-value <0.011 were significantly associated with adverse feto-maternal outcomes. *Escherichia coli* (50.8%) and *Klebsiella pneumoniae* (14.05%) predominated, and resistance to cephalosporins, amoxicillin-clavulanate and nitrofurantoin which are safe drugs in pregnancy were low (range: 8.2% to 31.0%).

Conclusion: The prevalence of ASB among pregnant women was still high and was associated with adverse feto-maternal outcomes. This paves the way towards routine urine culture screening for high-risk pregnant women irrespective of their symptoms and provision of specific antimicrobial therapies so as to prevent adverse pregnancy outcomes.

Keywords: *Asymptomatic Bacteriuria; Adverse Feto-maternal outcomes; Tanzania*

CU09RH: Magnetic resonance imaging patterns of premenopausal gynaecological conditions among women at Muhimbili National hospital, Dar es Salaam, Tanzania

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Background: Gynaecological diseases burden women, necessitating accurate early diagnosis and timely management. While ultrasound is commonly used, MRI's superior soft tissue contrast makes it ideal for early staging and diagnosis, especially for malignancies. However, limited access to pelvic MRI delays proper management. In Tanzania, there is a lack of published data on gynaecological conditions diagnosed through MRI, emphasizing the need for further research and data collection in this domain, given the high morbidity among premenopausal patients.

Methods: Consecutive sampling was used to enrol 100 non-pregnant premenopausal women in a descriptive cross-sectional study conducted at Muhimbili National Hospital Radiology department from July to December 2022. Demographic and clinical information was collected using a structured questionnaire. Data analysis was performed using SPSS version 20, and descriptive statistics, univariate and multivariate logistic regression were employed. Level of significance was determined at p-value < 0.05.

Results: The majority of the respondents (80%) were above 30 years old. The prevalence of gynaecological conditions among the subjects was 75%. The most common gynaecological condition among participants was fibroids. Lower abdominal pain was the most common clinical presentation accounting for 89.7% of cases. Women aged >30 had a tenfold higher likelihood of fibroid diagnosis compared to younger women (P=0.001, OR 10.372). Nulliparous women had a five-fold higher likelihood of fibroid diagnosis (P=0.001, OR 5.183). Parous women had a 0.2 times lower likelihood of other gynaecological tumour diagnosis compared to nulliparous women (P=0.03, OR 0.262).

Conclusion: Premenopausal women commonly experience a significant occurrence of gynaecological conditions. These conditions exhibit distinct MRI patterns.

Keywords: *Pre-menopausal women; Gynaecological conditions; MRI*

CU10RH: Consistency and inconsistency of self-reported age at first sex and age at first marriage among youth in Kisesa, Tanzania from 1994-2016

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Background: It is commonly believed that individuals can recall the age at which they first engaged in sexual intercourse or got married. Questions regarding the age of onset are regularly included in population-based surveys on sexual behaviour history assessments. However, there are limited studies with data from numerous survey rounds, which can provide opportunities to assess the quality of the data collected pertaining to these events.

Methods: This study utilized Magu Health and Demographic Surveillance System (Magu HDSS) data, which provides a unique opportunity to study changes in reported age at first sex (AFS) and age at first marriage (AFM) across more than five survey rounds, as it is a study that has been collecting data on sexual behaviour and HIV/AIDS since 1994. In this study, we assessed the consistency and inconsistency of reported AFS/AFM among the same individuals who appeared more than once across eight survey rounds with different categories. We observed the between- and within-variability of the reported AFS/AFM and also categorized the useful and non-useful data for further analysis. The quality of the reported AFS/AFM was also cross-checked among different age groups.

Results: The study found a high level of within-individual variability in reported AFS and AFM. Overall, among multiple reporters in the young population, only 10.0% consistently reported the same AFS values. Females displayed a higher proportion, 11.6%, compared to males, 8.8%. Likewise, with AFM, where only 6.0% consistently reported the same AFM values, females showed a higher proportion of consistency, 10.0%, compared to males, 1.9%.

Conclusion: Inconsistencies are often treated as errors to be corrected, but it is highly instructive to examine them from a different perspective, especially when a large proportion of inconsistencies may indicate the need for improved data collection methods, increased awareness of cultural and contextual factors, and more rigorous training for interviewers.

Keywords: *Sexual behaviour; Age at first sex; Age at first marriage; Consistency; Variability*

CU11RH: Placenta abnormalities: sonographic patterns and associated factors in pregnancy at Muhimbili National hospital, Dar es Salaam, Tanzania

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Background: Placenta pathologies are often overlooked and receive attention only when complications arise. A complete foetal ultrasound should include a full assessment of the placenta for any possible abnormalities. Familiarity with the placenta's normal and abnormal imaging appearance is necessary for healthcare providers to improve maternal and foetal outcomes. The study aimed at demonstrating the sonographic patterns and proportions of placenta abnormalities and their associated factors among pregnant women at Muhimbili National Hospital (MNH)

Methods: A hospital-based cross-sectional prospective study was carried out between January and March 2023 at MNH. Real-time placenta ultrasound findings were taken and documented from all pregnant women who met the inclusion criteria using a standard ultrasound machine with similar optimal settings on each visit until the sample size was reached. A bivariate analysis was performed to find placenta abnormalities and associated factors.

Results: A total of 220 pregnant women were enrolled in the study. Prevalence of placenta pathologies were 32.7 %, 27.3%, and 35.4 % for placenta morphology, placenta parenchyma and placenta maternal surface respectively. Placenta pathologies excluding those related to location and abruption were overlooked in 200 (91.7%) pregnant women. Pathologies related to placenta parenchyma and morphology had a strong association with chronic illness and chronic medication both with p <0.001. Placentomegally was very strongly associated with chronic illness (p <0.001) which was highly associated with foetal complications. Unexplained foetal loss and neonatal death had a strong association with placenta parenchyma pathologies (p-value < 0.001)

Conclusion: There was a high prevalence of placenta abnormalities. Placenta abnormalities patterns should be evaluated documented and followed up in subsequent scans to improve foetal and maternal outcomes. A standardized placenta reporting format based on the reported placenta patterns should be established to ensure practitioner examines and reports all possible placenta pathologies.

Keywords: *Placenta; sonographic patterns; Associated factors; Reporting form*

CU12RH: High child mortality and interventions coverage in the city of Dar es Salaam, Tanzania: are the poorest paying an urban penalty?

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Background: The urban penalty refers to the loss of a presumed survival advantage due to adverse consequences of urban life. This study investigated the levels and trends in neonatal, post-neonatal and under-five mortality rate and key determinants of child survival using data from Tanzania Demographic and Health Surveys (TDHS) (2004, 2010 and 2015/16), AIDS Indicator Survey (AIS), Malaria Indicator survey (MIS) and health facility data in Tanzania mainland.

Methods: We compared Dar es Salaam statistical data with data from other urban and rural areas in Tanzania mainland, as well as between the poorest and richest wealth terciles within Dar es Salaam.

Results: Under-5 mortality declined by 41% between TDHS 2004 and 2015/16 from 132 to 78 deaths per 1000 live births, with a greater decline in rural areas compared to Dar es Salaam and other urban areas. Neonatal mortality rate was consistently higher in Dar es Salaam during the same period, with the widest gap (>50%) between Dar es Salaam and rural areas in TDHS 2015/16. Coverage of maternal, newborn and child health interventions and child nutrition, as well as living conditions were generally better in Dar es Salaam than elsewhere in the mainland. Within the city, neonatal mortality was 63 and 44 per 1000 live births in the poorest 33% and richest 33%, respectively. The poorest had higher rates of stunting, more overcrowding, inadequate sanitation and lower coverage of institutional deliveries and C-section rate, compared to richest tercile.

Conclusion: Children in Dar es Salaam do not have improved survival chances compared to rural children, despite better living conditions and higher coverage of essential health interventions. This urban penalty is higher among children of the poorest households which could only partly be explained by the available indicators of coverage of services and living conditions. Further research is urgently needed to understand the reasons for the urban penalty, including quality of care, health behaviours and environmental conditions.

Keywords: *Neonatal mortality; child mortality; stunting; urban penalty*

CU13RH: Clinical Patterns and Factors Associated with Outcomes among Premature Neonates Admitted at Bugando Medical Centre, Mwanza Tanzania

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Background: Preterm infants are a vulnerable population, demonstrating an increased risk for life threatening complications due the immaturity of the major organs at the time of birth. At Bugando Medical Centre, neonatal mortality has been fluctuating between 19% and 48.5%. The increasing mortality and vulnerability of preterm neonates necessitates the identify clinical diagnoses related to mortality.

Methods: This was a hospital-based longitudinal study conducted from February 2023 to June 2023 at neonatal units of Bugando Medical Centre (BMC). Admitted premature neonates were enrolled and screened for clinical patterns of interest with daily follow-up for 7 days. Data was entered into Microsoft Excel and analysed by using STATA. Clinical patterns were assessed daily and documented once during the study time. Generalized linear model with log link and a Poisson distribution with robust variance estimater was used to determine predictor of mortality and hospital stay of more than 7 days. Predictors with p-value of less than 0.05 after calculating for adjusted RR were considered as significant independent predictors of outcome.

Results: Neonatal jaundice, respiratory distress syndrome (RDS) and hypothermia were the commonest clinical patterns. Early neonatal mortality was 18.5% while a hospital stay of more than 7 days was 45%. RDS ARR 1.7 [95%CI] [1.1-2.6], gastroschisis ARR 2 [95%CI][1.2-3.5] and hypothermia ARR 1.9 [95%CI] [1.3-3.0] were independently associated with mortality whereas NEC ARR 1.6[95%CI] [1.2-2.2], neonatal jaundice ARR 2.9[95%CI] [2.1-3.9] and gastroschisis were associated with a hospital stay of more than 7 days.

Conclusion: Neonatal Jaundice, RDS and hypothermia are among the clinical patterns of admitted premature neonates. Early Neonatal Mortality among premature neonates was 18.5% and hospital stay more than 7 days was 45%. Gastroschisis, hypothermia and RDS were associated with mortality while Necrotizing enterocolitis, gastroschisis and neonatal jaundiced were significantly associated with hospital stay of more than 7 days.

Keywords: *Preterm infant; neonatal Jaundice; hypothermia; respiratory distress syndrome; gastroschisis*

CUSD: SOCIAL DETERMINANTS OF HEALTH AND THE POWER OF SOCIAL SCIENCES

CU01SD: Social Determinants of Antiretroviral Treatment Retention among Adolescent Girls and Young Women in Care and Treatment Clinics in Mwanza City, Tanzania

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Background: Adolescent Girls and Young Women (AGYW) living with HIV have high dropout from Antiretroviral Therapy (ART). Understanding the dropout determinants is crucial to help contextualize and tailor targeted interventions to achieve optimal HIV care outcomes. The study aimed to assess the extent of ART retention among AGYW and the associated social factors that determine their retention in Mwanza City Council.

Methods: The study employed a two-fold research approach: a hospital-based retrospective study design was utilized to determine the proportion of ART retention and a cross-sectional design to examine social factors influencing ART retention. A total of 739 and 385 AGYWs were identified and used in the retrospective and cross-sectional arm respectively from two cohorts: 2019-2020 and 2021-2022. Data on demographics, social factors, and treatment outcomes were obtained through medical chart abstraction and interviews. Chi-square test and binary logistic regression model were used. A p-value of less than 0.05 was considered statistically significant.

Results: The study revealed a retention rate of AGYW to ART estimated at 72.6% for the 2019-20 cohort, 81.5% for the 2021-22 cohort, and 78.3% overall implying a 21.7% dropout. Multivariate binary logistic analysis revealed that AGYW being retained to ART was associated with primary education and above [aOR=5.747 (95% CI=2.806-11.770; p-value<001)], both parents' involvement in parenting [aOR=2.803 (95% CI=1.131-6.951; p-value=0.026)], and high-income levels [aOR=3.861 (95% CI=1.077-13.846; p-value=0.038)]. Factors contributing to dropout included being married and living together [aOR=0.044 (95% CI=0.003-0.581; p-value=0.018)] or living together with an unmarried partner [aOR=0.082 (95% CI=0.007-0.970; p-value=0.047)] and perceived stigma or highly perceived stigma [aOR=0.058 (95% CI=0.030-0.111; p-value<001)].

Conclusion: The study revealed an optimal retention of AGYW on ART in recent years, with younger ages being the leading group for dropout. Education, parenting by both parents and high income positively influence ART retention, while perceived stigma and being in marital relationships are the opposite. The study highlights that social factors determine the extent of ART retention among AGYW. Therefore, social factors should be studied from time to time, and streamlined in intervention strategies for retaining AGYW to ART.

Keywords: *ART retention; Adolescent Girls; Young Women; Social Determinants*

CU02SD: Potential spectrum of accompanied penetrating abdominal intra-peritoneal injuries with bowel evisceration: Surprises awaiting the trauma Surgeon in resource limited settings

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Background: Penetrating abdominal injuries involve violation of the peritoneal cavity and injuries to solid organs, and other intra-peritoneal viscera such as major blood vessels and hollow organs. Typically, such injuries arise from gunshot wounds or stab wounds. With the increase in crime rate and motor traffic accidents in urban areas, the trauma surgeon in civilian urban centres faces a spectrum of injuries not dissimilar to those encountered in war torn areas. The potential spectrum of penetrating abdominal injuries is wide and accurate diagnosis in resource-limited centres is challenging. The majority of injuries are concealed and diagnosed intra-operatively and dealt with relatively junior trauma surgeons in emergency settings in remote limited settings. Computed Tomography (CT) scans and Magnetic Resonance imaging (MRI) facilities are scarce in resource-limited settings.

Case Series: Four cases of penetrating abdominal injuries are presented with modes of assault ranging from Gunshot injuries to stab wounds with broken bottles to highlight the intra-abdominal spectrum of injuries, challenges in diagnosis and emergency managements done in a resource limited setting.

Conclusion: Haemodynamic states of penetrating abdominal injuries patients presenting in emergency departments necessitate urgent surgical exploration and management with minimal room for full radiological work-up. Evisceration of bowels with unstable haemodynamic states mandate laparotomy due to wide spectrum of accompanied intra-peritoneal injuries.

Keywords: *Bowel evisceration; Laparotomy; Stab wounds; Gunshot wounds; Abdomen*

CU03SD: Standard urine collection bag as an improvised Bogotá bag as a temporary abdominal closure method in an open abdomen in preventing abdominal compartment syndrome

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Background: Primary abdominal wall closure post laparotomy is not always possible. Certain surgical pathologies such as degloving anterior abdominal wall trauma injuries and peritoneal visceral volume and cavity disproportion render it nearly impossible for the attending surgeon to close the abdomen in the first initial laparotomy. In such surgical clinical scenarios leaving the abdomen open might be lifesaving. Forceful closure might lead to abdominal compartment syndrome and impair respiratory status of the patient. Open abdomen closure techniques have evolved over time from protection of abdominal viscera to complex fascia retraction prevention techniques. Silo bags i.e. (Bogotá Bags) are relatively cheap, available materials used as a temporary abdominal closure method in limited resources settings. Despite its limitations of not preventing fascia retraction and draining of peritoneal fluid, it protects the abdominal viscera.

Case Report: We report a case of a 29-year-old male who developed incisional anterior abdominal wall wound dehiscence. He was scheduled for emergency explorative laparotomy. Intra-operatively, multiple attempts to reduce grossly dilated oedematous bowels into peritoneal cavity and fascia approximation into the midline was not possible. A urinary collection bag was sutured on the skin edges as a temporary abdominal closure method in prevention of abdominal compartment syndrome. He fared well post operatively and eventually underwent abdominal incisional wound closure.

Conclusion: In emergency abdominal surgeries done in limited surgical materials resource settings, where primary abdominal closure is not possible at initial laparotomy, sterile urine collection bags as alternatives to the standard Bogota Bags as temporary abdominal closure materials can be safely used. These are relatively easily available and can be safely used until definite surgical intervention is achieved with relatively fewer complications.

Keywords: *Open abdomen; Bogota bag; Compartment syndrome*

Else Kröner Center
Würzburg-Mwanza

USC: SCHISTOSOMIASIS

CU01SC: Comparison of syndromic analysis, colposcopy, and genital PCR in the diagnosis of female genital schistosomiasis (FGS) among adolescent girls and women of reproductive age (WRA) in the Tiko endemic focus (TF), Mount Cameroon Area

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Background: Female genital schistosomiasis (FGS) is a neglected and disabling gynaecological disease that can result from infection with the parasitic trematode *Schistosoma haematobium*. In urogenital schistosomiasis (UGS) endemic areas, the population and medical practitioners are unaware of FGS and its associated morbidities, consequently individuals may suffer FGS with chronic underlying morbidities in the absence of proper diagnosis and treatment. The WHO recommends syndromic screening for pre-emptive treatment of FGS but management is limited by the lack of a reliable and affordable diagnostic method. This study aimed to determine the prevalence of presumed and confirmed FGS cases; the diagnostic performance for FGS syndromic criteria in relation to pelvic examination analysis as well as FGS associated morbidities in female genitalia in the context of other co-morbidities.

Methods: In a total of 304 girls/women, questions were asked about urogenital symptoms and water contact history. Urine samples were tested for *S. haematobium* ova. Vaginal swab specimens were collected and analysed for chlamydia and gonorrhoea. Pelvic examination for visual inspection of the lower genital tract and/or colposcopy was performed and cervicovaginal lavage was collected for PCR analysis.

Results: The overall prevalence of UGS was 29.3% (89), where lower genital tract symptoms were most common among UGS negative girls/women. The sensitivity of these symptoms in detecting genital involvement with UGS was low (19% - 31%). Out of the 65 women who participated in pelvic examination, 27.7% (18) had FGS. More cases of FGS (15) was reported among girls/women who reported LGT symptoms but negative for both UGS and STI, meanwhile, girls/women who reported LGT symptoms and positive for UGS and negative for STI reported 9 cases of FGS.

Conclusion: Syndromic analysis was not a good tool in the presumptive diagnosis of FGS. Low sensitivity of syndromic analysis may be due to other comorbidities and the diagnostic technique.

Keywords: *UGS; FGS; Syndromic analysis; Colposcopy; Tiko*

CU02SC: Evaluation of the performance of a rapid POC UCP-LFA device for Schistosome CAA detection

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Background: Over 200 million people are affected by water-borne *Schistosoma* parasites. The infection is highly prevalent in the tropical region of the world, where it poses significant public health impact. Currently diagnosis of schistosomiasis relies on microscopic detection of eggs in urine or stool, or immunoassays that detect schistosome-specific antigens in urine/serum. These antigens include circulating cathodic antigen (CCA) or circulating anodic antigen (CAA). The CCA has a limitation of being detected only in infections from one of the six common *Schistosoma* species and has a poor sensitivity in low intensity infections, while the CAA is detected in all *Schistosoma* species with high sensitivity, but current assay cannot be used at point of care. Thus, there is an urgent need to develop a sensitive, rapid, point-of-care test for schistosome infections in order to improve diagnosis of the disease in endemic areas. We will be presenting initial results for evaluation of the performance of an improved rapid assay that detects CAA and can be used at the point-of-care.

Methods: We evaluated a novel FLOW device which integrates pre-concentration of 20mL of urine and utilizes up-converting phosphor technology to produce lateral flow assay readout. FLOW requires < 1 minute of hands-on time and no pipetting or centrifugation. We collected urine and blood from 30 individuals in a pilot study. Fifteen of these had CAA detected in serum (CAA>30 pg/mL) and were urine egg positive for *Schistosoma haematobium*, and 15 were negative for serum CAA and urine eggs. The device results for CAA were then compared.

Results: Compared to the current laboratory-based assay which detects CAA in serum as the gold standard, the FLOW device had a sensitivity of 79% and a specificity of 100%. Urine with precipitate or that had been previously frozen performed poorly compared to fresh urine.

Conclusion: These initial results indicate that this novel point-of-care CAA assay has promising performance and has the advantage of using urine specimens, for which collection is easy and non-invasive. Further field evaluation of the assay is planned to address barriers related to urine precipitate and to increase assay speed.

Keywords: *Schistosome; Circulating anodic antigen; Diagnosis*

CU03SC: Determinants of acceptability and implementation of Schistosomiasis mass drug administration among primary school children in Busega district, northwestern Tanzania

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Background: In Tanzania, schistosomiasis is highly endemic across the country, ranging from 12.7% to 87.6%. Praziquantel mass drug administration (MDA) is currently recommended by WHO as a drug of choice for preventive treatment of schistosomiasis. The 2021 overall annual schistosomiasis MDA report indicates that Busega district had a treatment coverage of 46.6%, adequate treatment coverage defined by WHO is treating of ≥ 75% of the target population. Low coverage could mean low acceptability, resulting in poor uptake of MDA. Further, inconsistency in the implementation of MDA program has been noted in the district. This study, therefore, assessed acceptability of MDA among primary school children and determinants shaping the implementation of MDA program in Busega district.

Methods: A mixed method design was used, where quantitative used cross-sectional study to interview 615 primary school children and qualitative adopted a case study to interview 9 key informants. A validated generic theoretical framework of acceptability-based questionnaire and Key-informant interview (KII) guide, which adopted questions from REAIM framework was used. For data analysis STATA version 15 and thematic analysis was used.

Results: The acceptability of schistosomiasis MDA among primary school children was found to be low (55.28%), and this was significantly associated with perceived effectiveness (OR=2.52, 95%, CI=1.31-4.85, p-value=0.006), intervention coherence (OR=5.51, CI=3.16-9.59, p-value<0.0001), self-efficacy, affective attitude (OR=5.10, 95% CI=2.77-9.59, p-value<0.0001), and gender (OR=0.59, 95% CI=0.38-0.94, p-value=0.027). The study also identified barriers to the implementation of the MDA program, including lack of financial capacity to implement the program, the impact of the Covid-19 pandemic, inadequate funding, lack of toilets, absence of sustainability plan, parental influence, food availability, misconceptions and false beliefs, fear of side effects, rumours, unequal distribution of resources, unequal access to schistosomiasis drugs, and limited reach of education.

Conclusion: These findings underscore the need for a multi-pronged approach, including community involvement, improved education, equitable access, integration of WASH improvements into MDA program, addressing misconceptions and false beliefs in the community and integration schistosomiasis MDA programs in other routine health services.

Keywords: *Schistosomiasis; Implementation; Acceptability; Mass drug administration*

CU04SC: Pre- and Post-Treatment Associations of Schistosoma mansoni Infection with Latent Tuberculosis in Tanzania

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Background: Tuberculosis (TB) is the second leading cause of death worldwide after COVID-19, with most active TB cases resulting from reactivation of latent tuberculosis infection (LTBI) in immunocompromised hosts. Emerging evidence suggests that *Schistosoma* worm infection may decrease the sensitivity of screening tests that detect LTBI due to helminth-induced, altered immune responses. However, data on whether *Schistosoma mansoni* infection, and particularly whether eradication of schistosome infection alters responses to LTBI are limited.

Methods: Preliminary data of an ongoing cohort study were analysed among adults aged 18-50 years living in Tanzania from July 2022 through September 2023. LTBI status was determined at baseline and 6 months using the QuantiFERON-TB Gold Plus assay, which included: TB1, TB2, Nil and Mitogen. *S. mansoni* infection was confirmed by stool microscopy plus a serum schistosome circulating anodic antigen of ≥ 30 pg/mL. We used linear and logistic regression to compare *S. mansoni* infected and uninfected people. Difference in differences of pre- and post-treatment were compared using Wilcoxon matched-pairs signed-rank test.

Results: 148 individuals were enrolled, which included 83 men (56.1%) and 65 women (43.9%) with a median age of 32.5 years [25-40.5]. 65 people (43.9%) had *S. mansoni* infection. At baseline, there was no difference in LTBI status between *S. mansoni*-infected and uninfected people, but those with schistosome infection had lower mitogen concentration (38.5% versus 23% with mitogen level<10IU/ml, p=0.03). Compared to persistently uninfected people, those whose *S. mansoni* infection was eradicated at 6 months had subsequent increases in their responsiveness to TB antigens (TB1 +0.08, p=0.04; TB2 +0.02, p=0.42).

Conclusion: Preliminary data from this ongoing study demonstrate that *S. mansoni* infection may impair host immune responses to TB antigens. Subsequent eradication of schistosome infection at 6 months is associated with increased host immune response to TB1 and TB2 antigens. Ongoing data collection may further clarify the longitudinal effects of schistosome infection and anthelmintic treatment on the pathogenesis of TB, which is particularly important in endemic regions where these two diseases overlap, and co-infections are common.

Keywords: *Schistosoma mansoni; Tuberculosis; Immune responses*

CU05SC: Association of Schistosoma mansoni Infection with Cardiovascular Risk Factors in Tanzania

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Background: Emerging evidence suggests that *Schistosoma* infections may affect the pathogenesis of cardiovascular disease (CVD). However, data on whether *Schistosoma mansoni* infection, and particularly whether eradication of *S. mansoni* infection, alter CVD risk are limited.

Methods: Preliminary data of an ongoing cohort study were analysed among adults aged 18-50 years living in Kisesa and Kayenze from July 2022 through September 2023. CVD data included blood pressure, lipids, blood glucose, anthropometry, and cardiac risk scores. *S. mansoni* infection was confirmed by stool microscopy plus serum schistosome circulating anodic antigen of ≥ 30 pg/mL. We used linear and logistic regression, adjusting for age, sex, tobacco use, and family history of CVD, as well as sex-stratified sub-analyses, to compare infected and uninfected people. Difference in differences of pre- and post-treatment were compared using Wilcoxon matched-pairs signed-rank test.

Results: One hundred forty-eight individuals were enrolled, which included 83 men (56.1%) and 65 women (43.9%) with a median age of 32.5 years [25-40.5]. Sixty-five people (43.9%) had *S. mansoni* infection. Infected individuals had lower total cholesterol, total-cholesterol-HDL ratio, and QRISK3 score when compared to uninfected individuals on multivariable regression analysis. Examination by sex indicated that infection was associated with lower lipids and systolic blood pressure in women but not in men. After 6 months, 39 individuals who were persistently uninfected were compared with 16 who had cleared infection. Those who cleared infection tended to develop increasing diastolic blood pressure, cholesterol, and body mass index (BMI).

Conclusion: Schistosome infection was associated with lower measurements of certain cardiovascular risk factors, including dyslipidaemia and blood pressure, in women. Analysis of preliminary 6-month follow-up data shows that eradication of infection may lead to an increase in diastolic blood pressure, cholesterol, and BMI. Ongoing data collection may further clarify the longitudinal effects of schistosome infection and anthelmintic treatment on CVD risk, which may particularly be important in the light of efforts by the World Health Organization to eradicate helminth infections with mass drug administration programs.

Keywords: *Schistosoma mansoni; Cardiovascular disease risk*

CU06SC: Characterization of cervical mucosal immune cells in women with Female Genital Schistosomiasis in Northern Tanzania

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Background: Female Genital Schistosomiasis (FGS) affects about 40 million girls and women in Africa. In Tanzania, 40 to 80% rates of infection have been recorded in endemic regions. FGS is mainly caused by *Schistosoma haematobium*. The condition is characterized by deposition of eggs in the genital tract of women, largely in the vagina and cervix. Schistosome eggs are metabolically active and highly antigenic. The immune system's response to the deposited eggs is formation of an inflammatory granuloma which results in pathological changes responsible for the clinical manifestations and complications of FGS including sandy patches, friable tissue, and abnormal blood vessel formation. Immune cells involved in the pathological process have been scarcely studied and have not been well characterized. Characterizing immune cells involved might provide insight for identification of potential targets for therapeutic strategies to reduce FGS induced mucosal abnormalities that have been shown to persist 6 to 12 months after praziquantel treatment. This study aimed to determine the impact of *S. haematobium* infection on immune cell populations of the cervical mucosa. We collected two cytobrushes and an Ayer spatula from the endocervix during gynaecological examination, processed and cryopreserved cervical mononuclear cells, and acquired cells on a Cytek Aurora spectral flow cytometer using 31 antibodies to identify distinct immune cell types.

Methods: We are analysing samples from a cohort of 48 women of reproductive age (18 - 50 years) who were HIV-uninfected. Twenty-four of these women had *S. haematobium* infection, and 24 did not. Treatment with praziquantel was given to women with schistosomiasis after the visit. Analysis of the collected samples by spectral flow cytometry is ongoing.

Conclusion: Results of this study will be available in October 2023 and will be presented at the meeting. To our knowledge, these are the first cervical mucosal samples collected from women in sub-Saharan Africa and analysed using this technology. This research is hoped to offer insights into potential therapeutic targets and may point towards novel additional management options for mucosal complications of FGS.

Keywords: *Schistosoma haematobium; Female Genital Schistosomiasis; Immune cells; Cervical mucosa*

CU07SC: Synthesis and Antischistosomal Structure-Activity Relationship Profiling of N-Pyridazin-3-ylbenzamides by in vitro and in silico Approaches

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Background: Schistosomiasis (SCH) is a neglected tropical disease. In 2021, WHO reported 240 million cases worldwide with 300,000 deaths per year. Loss from schistosomiasis-disability in Africa is US$445, 866, 945 p.a.; with over 150 000 deaths per annum attributed to *S. haematobium* and over 130 000 deaths resulting from *S. mansoni* (two spp. found in Zambia). The main drug is praziquantel (PZQ). Leben's PZQ brand recently was recalled by ZAMRA leaving no available brand). PZQ has, however, shown drug resistance, is ineffective against immature parasites.

Methods: This SAR study was based on the drug repurposing SAR results on Medicines for Malaria Venture's MMV687807 among other antischistosomal hits and subsequent SARs. The design was underpinned by the premise that the more the electronegative atoms in an aromatic system, the better the solubility in water and aqueous mixtures like blood. MMV687807 and other *N*-phenylbenzamide (*N*-PhBA) hits were experimentally found poorly soluble (high logP). A phenyl (Ph) ring to a pyridazin-3-yl (3-Pdz) ring molecular edit was done. Four (4) candidates were synthesized and characterized by HPLC-MS, IR and NMR then subjected to *in vitro* screening was carried out on *S. mansoni*.

Results: All the six (6) successfully synthesized drug candidate had more than 95% purity as is standard as determined by HPLC-MS and there IR spectra and NMR spectra were well interpreted to fit the target compounds. On phenotypic screening, one candidate showed 48.33% dead in 72 hrs activity on newly transformed schistosomula which was lower potency as was the potency on adult worms than the frontrunner compounds, but all the analogues showed better solubility and lower cytotoxicity.

Conclusion: The *N*-pyridazine moiety was found to lower the potency but improved solubility and lowered cytotoxicity.

Keywords: *Antischistosomal; N-pyridazin-3-ylbenzamide; In vitro; in silico*

CU08SC: The impact of multiple rounds of Praziquantel treatment on periportal fibrosis in a community at high risk for Schistosoma mansoni infection in North-western Tanzania

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Background: Mass Drug Administration (MDA) with Praziquantel (PZQ) is the mainstay for controlling the morbidity associated with Schistosoma mansoni infection in high prevalence settings. The Tanzanian national NTD control strategy focusses exclusively on the treatment of schoolchildren. The Ijinga Island Schistosomiasis Control Project, launched in 2016, aims to eliminate schistosomiasis as a public health problem on the island. Along with the improvement of WASH, PZQ treatment of the entire community including pre-school-aged children and adults is the major intervention. Hereby we present the recent data of an ultrasound-based morbidity survey in comparison to the baseline data of 2016.

Methods: The participants were selected by random sampling and examined by ultrasound devices using the Niamey-Belo Horizonte Protocol (WHO Standard) in September 2016 and August 2023. The Liver patterns C, D, E, F were considered as specific for periportal fibrosis (PPF) due to schistosomiasis. In between there were 13 MDA-campaigns for the children and 9 MDA for the adults.

Results: The participation rate in MDA ranged between 70-95%. In 2016 among 441 adults (283male-m/183female-f) PPF was detected in 43.3% (55.1%m / 34,9%f), severe PPF (pattern E, F) in 7.7% (12,5%m / 3,5%f). Among 428 children (207m/221f) 1-15years of age PPF was seen in 12.5% (11.5%m / 13.3%f) in 2016 with pattern C only. The 2023 survey found among 474 adults (176m / 298f) PPF in 4.4% (9.1%m / 1.3%f), no pattern E, F was seen. Among 386 Children PPF was detected in 2.4% (2.6%m / 2.3%f), only pattern C was detected in 2023.

Conclusion: The continuous efforts on MDA with PZQ resulted in a significantly reduced morbidity on the community level, in children and in adults as well. No severe PPF pattern E and F was detected among adults in the recent survey. These findings underline the need to include the adult population at risk for periportal fibrosis in MDA campaigns.

Keywords: *Praziquantel; Mass-Drug-Administration; Periportal Fibrosis*

CU09SC: High sensitivity but low specificity of the symptoms and risk factors questionnaire in diagnosing female genital schistosomiasis among sexually active women with genital lesions in selected villages of Maswa District, North-Western Tanzania

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Background: Female Genital Schistosomiasis (FGS) is a clinical feature of urogenital schistosomiasis caused by *Schistosoma haematobium*. Its diagnosis is challenging in endemic areas. To facilitate and improve diagnosis in these settings, a symptoms and risk factors tool has been developed to help healthcare workers at primary healthcare facilities to identify and manage FGS. The objective of this study was to assess the performance of symptoms and risk factors tools in diagnosing FGS in adolescent girls and women of reproductive age in selected villages of North-western Tanzania.

Methods: A community-based analytical cross-sectional study was conducted among 347 women aged 18-49 years at Maswa District, Tanzania. A single urine samples was collected from each participant and screened for *S. haematobium* eggs using urine filtration technique. Consenting participants (n=177), underwent thorough speculum examination by trained gynaecologists using a portable colposcopy to capture images of the cervix and vagina.

Results: The mean age of 347 women enrolled in the study was 30 years (Standard Deviation (SD) ±7.7) and prevalence of women with symptoms suggestive of FGS was 15.8% (95% CI; 10.8%- 22.0) by colposcope and 83.7% (95% CI; 83.0%-90.4%) using the risk factor and symptom checklist. The overall sensitivity, specificity, positive and negative predictive value of symptoms and risk factors checklist tool for diagnosing female genital schistosomiasis (≥7 score points) using colposcope as a reference were 85.7% (95%CI; 80.6%- 90.9%), 8.7% (95%CI; 4.6%-12.9%), 15.0% (95%CI; 9.7%-20.3%) and 76.5% (95%CI; 70.2%-82.7%). On multivariate analysis fetching water in contaminated fresh water (aOR:21.8, 95%CI;2.8-171.2, *P* <0.003), self-reported pelvic pain (aOR:5.3, 95%CI; 1.1-25.9, *P*< 0.04) and having any urinary symptoms (aOR:12.2, 95%CI; 1.5-96.3, *P*<0.018) remained independently associated with FGS. Urine microscopy results were available for 345 participants, of these, 3.5% (12/345) (95% CI; 1.8%-6.0%) were positive for *S. haematobium* infection.

Conclusion: The symptoms and risk factor checklist for diagnosis of FGS achieved high sensitivity but low specificity for women who scored ≥7 points using colposcope as a reference diagnostic test. The diagnostic part of FGS remains a challenge, thus there is a need to continue evaluating this tool in different population and age structures in endemic areas.

Keywords: *Female genital schistosomiasis; Diagnosis; North-western Tanzania*

CU10SC: Response to a timed Praziquantel treatment among Schistosoma haematobium infected School children in North-western, Tanzania

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Background: There is growing evidence that despite repeated mass drug administration (MDA) using Praziquantel (PZQ) against *Schistosoma haematobium*, there are still remaining pockets of infections. In order to attain elimination stage, there is a need to design different interventions in areas remaining with a high prevalence of *S. haematobium* infection. One proposed approach is timed treatment based on the transmission cycle of the parasite. However, this approach has never been assessed. To examine this hypothesis, a study was carried out in North-western, Tanzania to assess the effects of transmission seasons on efficacy of praziquantel drug.

Methods: A longitudinal study was conducted among 791 school children between November 2022 and May 2023 in Simiyu region, the period of low and high transmission. A single urine sample was collected from each of the participating child and examined for the presence of *S. haematobium* eggs at baseline. Infected children were treated at two different times and hence divided into groups 1 and 2. Cure rates and egg reduction rates was calculated at 21 days post PZQ treatment. Data were analysed using STATA version 15.

Results: A total of 517 and 274 school children from group 1 and 2 respectively participated in the study. Mean age for both groups was 11.2±1.8 years. From group 1, 51% were males while from group 2, 63.5% were males.

The prevalence of *S. haematobium* decreased from 17.7% to 5.7% in group 1 and from 15.5% to 4.1% in group 2. The intensity of infection decreased from 41.2 to 3.8 EPC in group 1 and from 10.3 to 6.2 EPC in group 2. The egg reduction rate was higher (90.8%) in group 1 than in group 2, (39.8%). Cure rate was slightly higher in group 2 (69.7%) than in group 1 (64.2%).

Conclusion: There is enhanced response to Praziquantel treatment in terms of prevalence, intensity and egg reduction rates when administered during low transmission seasons. In areas with seasonal transmission of *Schistosoma haematobium*, Praziquantel should be administered in the low transmission season to enhance its efficacy and increase the effectiveness of mass drug administration programs.

Keywords: *Schistosoma haematobium; Mass drug administration; Seasons; School children*

Abstracts Selected for Oral Presentation

1. Insight of health care cost among patients with clinical diagnosis of urinary tract infections and antimicrobial resistance pathogens: a threat to patients' income

2. Uptake, Experience and Factors Associated with HIV Self-Testing among Female Bar Workers in Ilemela District, Mwanza Region Northwestern Tanzania,

3. Practicability and Functioning of Hospital Ethics Committees: An Overview from Lake-zone, Mwanza-Tanzania

4. Using Geographic Information Systems (GIS) to assess Diffuse Response Intervals for Community Bystander- (Tier-1) Emergency Medical Services integrated with Emergency Medical Dispatch in Mwanza, Tanzania

5. Implementation of TAMSA research mentorship program among undergraduate medical and pharmacy students at the Catholic University of Health and Allied Sciences

6. Prevalence of Hepatitis B surface antigen and Associated factors among Diabetic patients attending Bugando Medical Centre in Mwanza, Tanzania

7. Knowledge and risk Assessment of Hepatitis B Infection among Barbers and Beauty Salon Workers in Mwanza, Tanzania

8. Association between Latent Tuberculosis Infection and Glucose Intolerance among Adults in Mwanza City, Northwestern Tanzania

9. Five years retrospective cross-sectional study to determine the burden of Candida spp. infections of urinary tract system among patients attending tertiary hospital in Northwestern, Tanzania

10. High seropositivity of Mumps IgG Antibodies among School Aged Children in Mbeya Region in Tanzania

11. Evaluating the Field Performance of Rapid Tests for Herpes Simplex Virus-Type 2 in Rural Tanzania

12. Molecular Detection of High-Risk Human Papillomavirus and Associated Factors Among Patient with Esophageal Carcinoma at Bugando Medical Centre in Mwanza, Tanzania

13. Incremental prediction of inflammatory biomarkers and their relationship with outcomes among patients with COVID-19 pneumonia admitted at Bugando Medical Centre, Mwanza, Tanzania: a retrospective cohort study

14. Prevalence of Hepatitis B virus infection, associated risk factor, knowledge and vaccination status among household contacts of Hepatitis B index cases in Mwanza, Tanzania

15. High mortality among hospitalized confirmed COVID-19 patients with elevated inflammatory markers at Bugando Medical Centre

16. Prevalence and associated factors of newly diagnosed pulmonary tuberculosis among adult diabetic patients admitted with poor glycaemic control in Mwanza.

17. Demographic, Antiretrovirals Eligibility and Uptake as Per Who-2015 Guideline Characteristics among Chronically Hepatitis B Infected Patients in Lake Zone, Northern Tanzania

18. Laboratory and simulated semi-field larvicidal efficacy of Aframomum angustifolium (Sonn.) K. Schum and Tagetes patula essential oils against Anopheles gambiae

19. Virological impact of HIV drug resistance testing in children, adolescents and adults failing first-line ART in Tanzania

20. Antimicrobial Resistance Surveillance in Skin and Soft Tissue Infections: hospital-wide bacterial species and antibiograms to inform management at Bugando Medical Centre, Mwanza, Tanzania

21. Incidence, bacteriological patterns and factors associated with surgical site infections among patients undergoing split thickness skin grafting at Bugando Medical Centre, Mwanza, Tanzania

22. Non-prescribed antibiotics for respiratory tract infections like symptoms in the community pharmacies and accredited drug dispensing outlets in Mwanza city, Tanzania: A simulated clients approach

23. Whole genome sequencing unravels the genetic determinants of colistin resistance in multi-drug resistant Klebsiella pneumoniae isolated from patients admitted in the ICU of a tertiary care hospital in Kampala, Uganda

24. Extended-spectrum beta-lactamases and carbapenemase-producing Gram-negative bacteria contaminating inanimate hospital surfaces at Magu District Hospital in Mwanza, Tanzania

25. Biomarkers of Neonatal Sepsis: A Guiding and Early Diagnostics Tool for Neonatal Sepsis in Sub Saharan Africa

26. Frequency, mortality, and risk factors among patients admitted with stroke in the medical ward at Kilimanjaro Christian Medical Centre, Kilimanjaro, Tanzania: A Retrospective Observational study

27. Periconceptual Folic Acid Supplementation Uptake, Initiation, and Associated Factors Among Mothers of Infants with Congenital Anomalies Attending Bugando Medical Centre in North-Western, Tanzania

28. Risk Factors, Histological Types, Clinical Stages, And Treatment Modalities of Sinonasal Cancer Patients At Muhimbili National Hospital And The Ocean Road Cancer Institute

29. Factors Associated with a Two-Year Survival Among Children Under Comprehensive Cancer Care at Bugando Medical Centre, Northwestern, Tanzania

30. Prevalence, Patterns, and Associated Factors for Dyslipidemia Among HIV-Infected Patients on Dolutegravir Based First Line Antiretroviral Therapy Regimen Attending Bugando Medical Centre, Mwanza, Tanzania

31. Prevalence, and factors Associated with Persistent Pulmonary Hypertension and Diagnostic utility of Differential Oxygen Saturation among newborn babies in Mwanza, Tanzania

32. Prevalence, pattern and factors associated with congenital heart diseases among neonates admitted at Bugando Medical Centre in Mwanza, Tanzania

33. Adulteration of herbal medicinal products used for the treatment of erectile dysfunction in Mwanza City, Tanzania

34. Prevalence, pattern and predictors of cardiovascular event in people living with HIV attending clinic and admitted at tertiary hospital in Mwanza region

35. Patterns of lipid abnormalities and their predictors among chronic kidney disease patients at tertiary hospital in Northwestern zone of Tanzania

36. Uptake of COVID-19 vaccination and associated factors among patients attending oncology services at the Ocean Road Cancer Institute in Dar es Salaam, Tanzania

37. Prevalence of hypogonadism and associated risk factors among newly diagnosed ART naïve HIV-infected males in Mwanza, Tanzania

38. Non-Alcoholic Fatty Liver Disease in Tanzania: Prevalence, Determinants, and Correlation with Triglycerides-Glucose Index in Overweight and Obese Individuals

39. Evaluation of potential risk for developing treatment-associated late effects among childhood cancer survivors in Northern Tanzania

40. Prevalence of acute kidney injury among children under five years old with acute watery diarrhea in Mwanza, Tanzania

41. Wasting and stunting levels among children aged 6-24 months in Mwanza Region: Do feeding practices and hygiene matter?

42. Prevalence and Factors Associated with Electrolyte Abnormalities and Short-Term outcome among Critically Ill Children Admitted in The Intensive Care Unit at Bugando Medical Centre Mwanza, Tanzania

43. Prevalence and factors associated with hypertension among children attending paediatric outpatient clinic at Bugando Medical Centre, Mwanza, Tanzania

44. The SOPHEA Planetary Health Education Toolbox – a resource for strengthening education on the connections of climate, environment and health

45. Women's health implications of food security and climate change

46. Thriving in the Concrete Jungle: The Impact of Urban Farming and Green Spaces on Eldoret's Urban Dwellers' Food Security and Mental Well-Being

47. Nutrition and planetary health: Advocating for transparency, accountability, and participation in public budgets

48. Leveraging Fish Microbial Genomics to Prevent Antibiotic Resistance Spread through Food Fish Supply Chain

49. Animals in Planetary Health – Integrating Approaches to One and Planetary Health

50. Research and implementation priorities for One & Planetary Health in Africa: Needs assessment, options for collaboration & funding

51. Nutrition and planetary health: Advocating for transparency, accountability, and participation in public budgets

52. Advancing Collaboration across borders through Genomic Innovation: The University of Eldoret Genetics and Genomics Research and Training Laboratory

53. An International Network of Veterinary Education for Sustainable Antimicrobial Use and Tackling Antimicrobial Resistance (NetVet4SAMU)

54. Knowledge, attitude, and practice of kangaroo mother care among mothers with low-birth-weight babies at Sengerema district hospital

55. Prevalence and factors associated with red blood cell alloimmunization among pregnant women attending a tertiary hospital in Northwestern Tanzania

56. Early versus late amniotomy and associated feto-maternal outcomes among women delivering at Bugando Medical Centre, Mwanza, Tanzania

57. Emergency peripartum hysterectomy: indications, histopathological patterns and intraoperative maternal complications at Bugando medical centre and Sekou Toure regional hospital in Mwanza, Tanzania

58. Maternal and Foetal Outcomes In Low-Risk Prolonged Gestation: A Study Of Pregnancies Beyond 40 Weeks At Bugando Medical Centre Mwanza Tanzania

59. Prevalence of Maternal Hypocalcemia and its Association with Preeclampsia among Pregnant Women at Bugando Medical Centre, Mwanza Tanzania

60. Asymptomatic bacteriuria and its associated foetal-maternal outcomes among pregnant women delivering at Bugando Medical Centre in Mwanza, Tanzania

61. Consistency and inconsistency of self-reported age at first sex and age at first marriage among youth in Kisesa, Tanzania from 1994-2016

62. Potential spectrum of accompanied penetrating abdominal intra-peritoneal injuries with bowel evisceration: Surprises awaiting the trauma Surgeon in resource limited settings

63. Comparison of syndromic analysis, colposcopy, and genital PCR in the diagnosis of female genital schistosomiasis (FGS) among adolescent girls and women of reproductive age (WRA) in the Tiko endemic focus (TF), Mount Cameroon Area

64. Evaluation of the performance of a rapid POC UCP-LFA device for Schistosome CAA detection

65. Determinants of acceptability and implementation of Schistosomiasis mass drug administration among primary school children in Busega district, northwestern Tanzania

66. Pre- and Post-Treatment Associations of *Schistosoma mansoni* Infection with Latent Tuberculosis in Tanzania

67. Association of *Schistosoma mansoni* Infection with Cardiovascular Risk Factors in Tanzania

68. Characterization of cervical mucosal immune cells in women with Female Genital Schistosomiasis in Northern Tanzania

69. The impact of multiple rounds of Praziquantel treatment on periportal fibrosis in a community at high risk for *Schistosoma mansoni* infection in North-western Tanzania

70. Genetic Diversity, Multiplicity of Infection and kelch13 Mutations among Plasmodium falciparum Infected Children in Mwanza, Tanzania

Abstracts Selected for Poster presentation

1. Assessment of satisfaction with national health insurance packages among the informal sector clients in Mwanza city council: A case of public and private health facilities

2. Dignity Preservation Among Hospitalized Patient: A Case study of Bugando Medical Centre, Northwestern Tanzania

3. The Influence of the IMPACT Approach on Antenatal Care Clinic health commodity availability and Healthcare workers' Knowledge, Practice, and Perceptions: A Case Study of Itilima District Council

4. Quality of Life and Complications among Patients Living with Indwelling Urinary Catheters Attending Bugando Medical Centre Northwestern Tanzania

5. Efficacy of In2Care® EaveTubes against wild populations of malaria vectors in a small-scale field study at Kagera Sugar Ltd, Misenyi, Tanzania

6. High seropositivity of Severe Acute Respiratory Syndrome Coronavirus-2 and associated factors among pregnant women in selected health facilities in Mwanza, Tanzania

7. Effectiveness of Hepatitis B vaccination programme in Mwanza Tanzania

8. Prevalence of Hepatitis B Viral Infection and Its Associated Factors among Patients with Hepatocellular Carcinoma Attending Bugando Medical Centre Mwanza, Tanzania

9. COVID-19 vaccine coverage among non-medical personnel in selected public health facilities in the city of Mwanza: Lessons for future pandemic

10. Low magnitude of consistent condom uses in HIV-infected youth on antiretroviral therapy in Ilala Dar Es Salaam, Tanzania: The need to address parenthood desire affecting consistent condom use among youth living with HIV

11. Blood culture samples contamination rate and its associated factors in a microbiology laboratory at Bugando Medical Centre - Mwanza, Tanzania

12. High incidence of ventilator associated pneumonia among patients on mechanical ventilator admitted in the Intensive Care Units at tertiary care hospitals in Dar es Salaam, Tanzania

13. Prevalence of urinary tract candidiasis among PLWHIV with clinical diagnosis of urinary tract infections attending tertiary care hospitals in Mwanza, Tanzania

14. The Prevalence, factors associated and treatment outcome of symptomatic vaginal candidiasis in non-pregnant women attending outpatient clinics in Mwanza, Tanzania

15. Bacterial contamination and associated factors of *Escherichia coli* and *Salmonella* spp. on raw and edible non-peelable fruits and vegetables from local markets in Mwanza City, Tanzania: a cross sectional study

16. Seropositivity of Rubella IgG Antibodies and Associated Factors among Pregnant Women attending Antenatal Clinics in Unguja, Zanzibar

17. Prevalence and Associated factors of Cytomegalovirus IgG antibodies among Sickle Cell Patients admitted at Paediatric department Bugando Medical Centre, Mwanza Tanzania

18. Chronic pulmonary aspergillosis among smear negative tuberculosis patients in Mwanza, Tanzania

19. Antibiotic resistance and bacteriological profile of pathogens causing neonatal sepsis in Tanzania. A systematic review with meta-analysis

20. Cross sectional study on Urinary candidiasis among pregnant women in Zanzibar, Tanzania

21. Prevalence and susceptibility patterns of bacteria colonizing the external ocular surfaces of patients undergoing ocular surgeries at BMC in Mwanza, Tanzania

22. Prevalence of Gestational Diabetes Mellitus and associated risk factors among women attending antenatal care in health facilities in Unguja, Zanzibar

23. Androgen receptor overexpression status by immunohistochemistry in malignant salivary gland tumours in Tanzania

24. Adherence to Hydroxyurea therapy among Caregivers of children with sickle cell anaemia attending sickle cell clinic at Bugando Medical Centre, Mwanza, Tanzania

25. Comparison of diagnostic performance of lung ultrasonography and chest radiography in diagnosing respiratory distress syndrome among neonates at Muhimbili national hospital

26. Stroke Characteristics and Outcomes in Urban Tanzania: Data from the Prospective Lake Zone Stroke Registry

27. Justification of Imaging Requests and Optimization of Radiation Exposure from Paediatric Chest Radiography at a Tertiary Hospital in Dar-es-Salaam, Tanzania

28. Integrating Climate, Environment & Human Health at higher learning institutions in Tanzania through University Planetary Health Clubs

29. Youth Health Implication of Mental Health and Climate Change

30. Exploring healthcare-seeking behaviours and factors influencing non-adherence among cervical cancer patients attending Bugando Oncology Clinic in Mwanza, Tanzania

31. Magnetic resonance imaging patterns of premenopausal gynaecological conditions among women at Muhimbili National hospital, Dar es Salaam, Tanzania

32. Placenta abnormalities: sonographic patterns and associated factors in pregnancy at Muhimbili National hospital, Dar es Salaam, Tanzania

33. High child mortality and interventions coverage in the city of Dar es Salaam, Tanzania: are the poorest paying an urban penalty?

34. Standard urine collection bag as an improvised Bogotá bag as a temporary abdominal closure method in an open abdomen in preventing abdominal compartment syndrome

35. Factors Affecting Improved Community Health Fund Insurance Enrolments of Community Health Fund Members in Mbarali District

36. Evaluation of Electronic Logistic Management Information System Competence among Public Primary Health Care Facility Managers in Singida District Council, Central Tanzania: Implications for Medicine Supply Chain Performance

37. Perception of Learning Environment among Medical Imaging and Radiotherapy Students at the Catholic University of Health and Allied Sciences in Tanzania

38. Trends in Case Detection Rate for Leprosy and Factors Associated with Disability among Registered Patients in Zanzibar, 2018 to 2021

39. Old antibiotics as a new arsenal for multi-resistant isolates in diabetic foot ulcer infections: Therapeutic value of parenteral Colistin versus multi-resistant Pseudomonas species isolate strains. Case Report

40. Isolated Renal and Urinary Tract Aspergillosis: A Systematic Review

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