

23rd - 24th June, 2016

LAPF International Conference Centre,
Dar es Salaam - Tanzania



Fourth MUHAS Scientific Conference

Theme:

**Investing in
Health Research
and Training for
Sustainable
Development**



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**MUHIMBILI UNIVERSITY OF
HEALTH AND ALLIED SCIENCES
(MUHAS)**



**4TH SCIENTIFIC
CONFERENCE**

**LAPF INTERNATIONAL CONFERENCE
CENTRE, DAR ES SALAAM, TANZANIA.**

JUNE 23rd – 24th, 2016.



MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS)



4th SCIENTIFIC CONFERENCE
LAPF INTERNATIONAL CONFERENCE CENTRE,
DAR ES SALAAM, TANZANIA
JUNE 23-24, 2016

Conference Secretariat

Directorate of Continuing Education and Professional Development

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Conference Goals and Objectives

Muhimbili University of Health and Allied Sciences (MUHAS) is organizing its fourth scientific conference. The goals of the conference provides a forum for researchers, practitioners, decision makers, representatives of special groups, media and trainers to share research findings and experiences in health and health related issues as well as disseminate their findings to relevant stakeholders. This conference will take place at LAPF International Conference Centre in Dar es Salaam, Tanzania from 23rd – 24th June, 2016.

The theme for the 4th MUHAS Scientific Conference is: **“Investing in Health Research and Training for Sustainable Development”**. A variety of research areas subdivided into five sub-themes will be presented at this conference as follows;

- 1. Basic research in health issues**
- 2. Non communicable Disease**
- 3. Health Policy**
- 4. Health System Research**
- 5. Reproductive Health**
- 6. Information and Communication Technology**
- 7. Gender and Health Education**
- 8. Traditional Medicine**
- 9. Pharmaceutical Care**

Guest of Honour

The Conference will be officially opened by His Excellency Vice President of the United Republic of Tanzania, Samia Suluhu Hassan, on Thursday, 23rd June 2016 at 12:00 Noon.

The conference will be officially closed by MP Hon. Ummu Mwalimu, Minister of Health, Community Development , Gender , Elderly and Children, on Friday, 24th June 2016 at 16:00 hrs.

Program and Book of Abstracts

The program and book of abstracts provide a guided glance to the papers and posters to be presented and displayed respectively during the various sessions of the conference.

Conference Committees.

Steering Committee

1. E.Lyamuya
2. S. Aboud
3. P. Muganyizi
4. S. Massawe
5. D. Mloka
6. K.Pallangyo
7. G.Frumence
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9. E. Lyamuya
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13. N.Mkali
14. M.Kaiza
15. R.Chikalile
16. S.Aboud
17. A.Kamtemi
18. E. Balandya
19. N. Edwin
20. E.Kaale

Conference at a Glance

Time	Thursday, 23 rd June, 2016 (day 1)
08:00 am-09:00 am	Registration and Poster Viewing
09:00am – 10:00am	Keynote Presentation 1: “Creating a Conducive Environment for Local Stakeholders Towards Financing Health Research and Training in Tanzania” (Mr. G. Simbeye & Prof. A.D. Kiwara)
10:00am – 11:00am	Parallel Sessions 1A, B, C, D and E
	Kisenga Hall: NCD, Tanzanite Hall: Infectious Diseases, Mawenzi Hall: Reproductive Health, Meru Hall: Basic Science Research, Rubi Hall: Health Policy
11:00am – 11:30 am	Coffee/ Tea Break
11:30 am– 13:20 pm	Conference opening Ceremonies
13:20 pm– 14:00 pm	Lunch Break and Poster Viewing
14:00 pm- 15:00 pm	Keynote Presentation 2: “Confronting Substance abuse in Tanzania” (Dr. J. Mbwambo and Dr. P. Kaduri)
15:00 pm–15:30 pm	Poster Viewing
15:30 pm -16:30 pm	Parallel Sessions 2A, B, C, D and E
	Kisenga Hall: Reproductive Health, Tanzanite Hall:NCD, Mawenzi Hall: Infectious Diseases, Meru hall:ICT, Rubi Hall: Oral Health
16:30pm – 17:00 pm	Evening Cofee Break and Poster Viewing
17:00 -onwards	Conference Networking
Time	Friday, 24 th June, 2016 (day 2)
08:00 am– 08:30 am	Registration and Poster Viewing
08:30 am– 09:30 am	“Cancer in Tanzania: Challenges and Opportunities” (Prof. T. Ngoma)
09:30 am– 10:30 am	Parallel Sessions 3A, B, C and D
	Kisenga Hall: NCD, Tanzanite Hall: Reproductive Health, Mawenzi Hall Infectious Diseases, Meru hall : Gender and Health Education
10:30 am - 11:00 am	Coffee Break and Poster Viewing
11:00 am - 12:00 pm	Parallel Sessions 4A, B, C and D
	Kisenga Hall: Basic Science Research, Tanzanite Hall: NCD, Mawenzi Hall: Traditional Medicine, Meru Hall: Infectious Diseases
12:00 pm - 13:00 pm	Parallel Sessions 5A, B, C and D
	Kisenga Hall: Pharmaceutical Care, Mawenzi Hall: Basic Science Reseach, Mawenzi Hall: Basic Science Research, Meru Hall: Infectious Disease.
13:00 pm - 14:00 pm	Lunch Break
14:00 pm - 14:30 pm	Poster viewing
14:30 pm - 15:30 pm	Parallel Sessions 6A, B , C and D
	Kisenga Hall: NCD, Tanzanite Hall: Reproductive Health, Mawenzi Hall: Oral Health, Meru Hall:ICT.
15:30 pm - 16:30 pm	Parallel Sessions 7A, B ,C and D
	Kisenga Hall: Infectious Diseases, Tanzanite Hall: Health Policy, Mawenzi Hall: Health policy, Meru Hall: Basic Science Research
16:30 pm - 17:00 pm	Closing Ceremony and Certificates Provision.

ORAL ABSTRACTS

Thursday, 23th June 2016, 12:00 – 13:00

Parallel Session 1A: Non Communicable Diseases.

1. Disaster in Sub Saharan Africa: Lessons learned from a new emergency department of an urban public hospital in Tanzania

Sherin A. Kassamali¹, Juma A. Mfinanga^{1,2}, Hendry R. Sawe^{1,2}, Andrea Tenner¹, Victor Mwafongo^{1,2}, Teri A. Reynolds³

¹Department of Emergency Medicine, Muhimbili National Hospital

²Department of Emergency Medicine, Muhimbili University of Health and Allied Sciences of Emergency Medicine,

³Department of Emergency Medicine and Global Health Sciences, University of California, San Francisco, CA, USA

Background

The first full capacity public Emergency Medicine Department (EMD) was opened in 2010, at Muhimbili National Hospital, in Dar es salaam, Tanzania. Since its inauguration to the time of writing, EMD has provided care to victims and managed seven significant disasters that have happened in the country.

Aim: To compare EMD staff perception on disaster management during two different disasters before and after implementing a new disaster plan.

Methods: This was a descriptive comparative study of EMD staff perception on disaster management during two different disasters. Survey data assessing the comparative perception during the EMD management of victims of 12-story building collapse in Ilala, Dar es salaam in 2013 (happened after establishment of disaster plan) with available data on EMD management of victims of accidental ammunition's explosions at army base Temeke, Dar es salaam in 2010.

Results: Fourteen of twenty-two respondents were present for both disasters. During the building collapse successes identified included quick organization, mobilizing staff, sending EMD physicians to triage patients in the field, managing and disposing patients in time. Challenges listed were lack of pre-hospital care (33%) and running out of supplies in the EMD (21%). During the building collapse disaster, the EMD and other department staff were notified via phone calls and text messages. Majority of respondents (93%) described this as the best mechanism of communication. Communication between the EMD and the field was observed to be easier and better by 71.4% of respondents. Teamwork among departments was thought to be the same by 85.7%, and triaging (71.4%) was better and more organized in the second disaster.

Conclusion: After establishment of disaster plan in EMD, communication and triage seems to have improved. Areas for further improvement identified would be building pre-hospital response and improving the supply chain in the EMD.

2. Profile and outcome of patients with hypertensive crisis presenting to the Emergency Medicine Department of Muhimbili National Hospital in Dar es salaam Tanzania

¹PJ Shao*, BL. Murray^{1,2} JA Mfinanga^{1,2}, TA Reynolds^{2,3}, VMwafongo^{1,2}, HR. Sawe^{1,2}

¹Emergency Medicine Department, Muhimbili University of Health and Allied Sciences

²Emergency Medicine Department, Muhimbili National Hospital

³Emergency and Trauma Care Lead, World Health Organisation, Geneva, Switzerland

Background: Hypertension is one of the most common chronic non-communicable medical conditions, affecting over 1 billion people globally: If untreated or inadequately treated hypertension may results into hypertensive crises. There is general paucity of data on epidemiological profile and clinical presentation of hypertensive emergency and urgency.

Objective: To describe the profile and outcome of patients with hypertensive urgency and emergency presenting to the Emergency Medicine Department (EMD) of Muhimbili National Hospital (MNH).

Methodology: A descriptive cohort study of consecutive patients presenting to the EMD-MNH over a four-month period (from September to December). Structure data sheet was completed, documenting demographic information, clinical presentation (history and physical signs), diagnostic evaluation (laboratory tests), EMD treatment, outcome and disposition.

Results: We enrolled 178 patients, of whom 51.7% were females; median age was 55 years (Range 21-96 years). 113 (63.5%) patients had hypertensive emergency and 65 (36.5%) patients had hypertensive urgency. Cerebrovascular accident (CVA) was the commonest final EMD diagnosis. About 154 patients (86.5%) with hypertensive emergency were admitted and 1 died in EMD, while 24 (38.1%) patients with urgency were admitted and none died at EMD. The overall in-hospital mortality rates for hypertensive emergency and urgency were 23.9% 95% CI (16.1, 31.9%) vs. 3.1% 95% CI (1.15, 7.15%) (p= 0.0003,) respectively.

Conclusion: Hypertensive emergency represents the most common form of hypertensive crisis among patients presenting to EMD-MNH and carries a significantly high mortality rate compared to hypertensive urgency. Further studies should focus on how optimizing care to improve outcome.

3. Diabetic Retinopathy among Adult Diabetic Patients at the Muhimbili National Hospital With No Prior Ophthalmic Consultation for Diabetic Retinopathy. Aza

Innocent Lyimo, John S. Kisimbi, Celina F. Mhina

4. Muhimbili University of Health and Allied Sciences

Background

Diabetes is a non-communicable disease affecting people of all races with the estimate of 381 million people living with diabetes globally. Its prevalence is increasing rapidly and is expected to double by the year 2030, especially in developing world.

Retinal changes seen in patients with diabetes mellitus are referred to as diabetic retinopathy, a chronic progressive sight-threatening disease of the retinal microvasculature affecting up to 80 percent of all patients who have had diabetes for 10 years or more.

Diabetic retinopathy has little or no symptoms until visual loss develop, signifying regular screening. The methods for screening and treatment are available and effective.

Aim

This study aimed at providing the magnitude and severity of the diabetic retinopathy among diabetic patients who had never been screened for diabetic retinopathy.

Methodology

This was a cross-sectional descriptive hospital based study done at diabetic clinic in Muhimbili National Hospital. Diagnosis and grading of diabetic retinopathy was as per Early Treatment Diabetic Retinopathy Study System (ETDRS) guideline.

Results.

A total of 200 adult diabetic patients who had never been screened by an ophthalmologist for diabetic retinopathy were recruited. The prevalence of diabetic retinopathy was high accounting to 57%. Nearly half of these had advanced disease necessitating agent treatment. The prevalence of diabetic

5. Building a foundation for a multi-decade programme for Injury Prevention and Care in Tanzania focusing on Road Traffic Injury: INPACT: RTI

Anne H. Outwater, Fredrick Mashili, Marie Hasselberg, Candida Moshiri, Britt-Inger Saveman, Susann Backteman, Omary Chillo
Muhimbili University of Health and Allied Sciences Karolinski Institutet

Umea University

Background: As in other low and middle income countries Tanzania is experiencing increasing road traffic accidents leading to high rates of injuries and deaths. Pre-hospital care, e.g. in ambulances) is rudimentary; the frequent official first responders, the police, are not highly trained to manage victims of road traffic injuries (RTI) in order to decrease injurious sequelae. It is unclear where road traffic injuries occur and what the risk factors are. The research efforts to address this tragedy are scarce and the need to test prevention strategies is unmet.

In collaboration with the Karolinska Institutet and Umea University in Sweden (who have long involvement in injury prevention and care), MUHAS in Tanzania is developing a programme supported by SIDA to address RTIs. The objective of this new interdisciplinary programme will be to increase research and education/ training capacity for RTI prevention and pre-hospital care in order to build sustainable capacity to reduce RTI morbidity and mortality.

Methods: This five year programme aims to develop a foundational cadre of faculty researchers. The program is recruiting MSc and PhD students who will undergo extensive training and conduct research in RTI prevention and pre-hospital care under supervision. Research and training will take place between Tanzania and Sweden to ensure a bilateral exposure of students to both an established as well as an evolving RTI prevention system.

Expected Results: This foundational programme will increase the number of health professionals in Tanzania trained in RTI prevention and care. One short course on injury prevention and one module on pre-hospital care will be developed.

Conclusion: The creation of a body of knowledge which is context relevant and aligned with internationally high scientific standards in order to decrease mortality and morbidity due to RTI in Tanzania has begun.

6. Mercury exposure and related health problems among Artisanal and Small Scale Gold Mining Community in Chunya District

By Mamuya SH and Stanford John

Background: Small scale gold mining activities have been associated with global mercury emissions causing about 37% of air pollution. Human exposure to elemental mercury occurs mainly through inhalation of vapours, contact and ingestion through consumption of contaminated sea food.

Objective: To assess the magnitude of health problems related to mercury exposure among artisanal and small scale gold mining community in Chunya District.

Methodology: Analytical cross section study was conducted in gold mine community in Chunya District. A multistage random sampling method was used to recruit study participants from Saza and Makongorosi mining area recruited as exposed and individuals from two wards surrounding the mining area as unexposed group. Data was collected by a pre-tested interview schedule administered face to face to the interviewee with both open and closed ended questions followed

by urine sample collection which was then analyzed by CVAAS technique to determine the level of mercury. Data analysis was done by using Chi-square and in case numbers were too small for Fisher's exact test was employed. Measure of association is significant where $p < 0.05$. Multivariate logistic regression analysis was used to examine the adjusted effects of mercury exposure on occurrence of self-reported symptoms. Statistical analysis was done by SPSS version 21.

Results: A total of 150 participants with the age between 15 and 67 (mean age 33.77(SD=12.12) and 33.26(SD=12.83) years old for exposed and unexposed groups respectively) were recruited and ascertained for exposure. Urinary mercury concentrations for exposed group were higher than the referent group (mean 81.18(SD=46) mcgHg/g-creatinine and 5.14(SD=2.73) mcgHg/g-creatinine respectively) ($p < 0.05$). Symptoms such as cough, chest tightness, tremor of hands, tremor of tongue, tremor of eyelid and trouble of walking were significantly more prevalent in exposed ($p < 0.05$).

Conclusion and recommendation: Body burden caused by mercury affects not only miner but also the community surrounding the mining area. Exposure to even lower amount of mercury may bring about significant health effects. Therefore there is a need for stakeholders to raise the community awareness on mercury effects and its preventive measures.

Parallel Sessions 1B: Infectious Diseases

7. Do instructional videos on sputum submission result in increased tuberculosis case detection

Mhalu Grace¹, Hella Basra², Doulla Beatrice³

¹Ifakara Health Institute-Bagamoyo research and training Center

²University of Basel Swiss Tropical and Public Health Institute, Switzerland

³National Tuberculosis and Leprosy Program, Tanzania

Background: Sputum smear microscopy remains the cornerstone of diagnostic algorithms in national tuberculosis (TB) control programs in low-income settings. Instructions on how to produce a good sputum sample are often included in manuals, but to formulate this comprehensibly proves exceedingly difficult.

Objective: We examined the effect of an instructional video about the production of diagnostic sputum on case detection of TB.

Methods: We prepared a culturally adapted instructional video for sputum submission. We analyzed 200 presumptive TB cases coughing for more than two weeks who attended the outpatient department of the governmental Hospital in Mwananyamala (Dar es Salaam, Tanzania). They were randomly assigned to either receive instructions on sputum submission

using the video before submission (intervention group, n=100) or using routine verbal instructions (control group, n=100). Sputum samples were examined for volume, quality, and presence of acid-fast bacilli by experienced laboratory technicians blinded to study groups.

Results: Median age was 39.1 years (interquartile range 37.0-50.0); 94 (47%) were females, 106 (53%) were males, and 49 (24.5%) were HIV-infected. We found that the instructional video on intervention was associated with detection of a higher proportion of microscopically confirmed cases (56%, 95% confidence interval [95% CI] 45.7-65.9%, sputum smear positive patients in the intervention group versus 23%, 95% CI 15.2-32.5%, in the control group, $p < 0.0001$); an increase in volume of specimen defined as a volume ≥ 3 ml (78%, 95% CI 68.6-85.7%, versus 45%, 95% CI 35.0-55.3%, $p < 0.0001$); and specimens less likely to be salivary (14%, 95% CI 7.9-22.4%, versus 39%, 95% CI 29.4-49.3%, $p = 0.0001$, Figure). Older age, but not the HIV status or sex, modified the effectiveness of the intervention by improving it positively. When asked how well the video instructions were understood (n=100), the majority of patients in the intervention group reported to have understood the video instructions well (97%). Most of the patients thought the video would be useful (92%).

Conclusion: Sputum submission instructional videos increased the yield of TB cases through better quality of sputum samples. If confirmed in larger studies, instructional videos may have a substantial effect on the case yield using sputum microscopy and also molecular tests. This low-cost strategy should be considered as part of the efforts to control TB in resource-limited settings.

7. Open label Sertraline and High-dose Fluconazole Treatment of HIV-associated Cryptococcal Meningitis in Southeastern Rural Tanzania.

Andrew Katende

Ifakara Health Institute

Background: Sertraline has in vitro and in vivo fungicidal activity against *Cryptococcus neoformans* and synergistic effect with fluconazole. Aim To explore the adjunctive effect of sertraline by determining the cerebrospinal fluid (CSF) early fungicidal activity over 2 weeks in HIV-infected Tanzanians with cryptococcal meningitis.

Methodology This was a single-arm, open-label, non-randomized, pilot study. We enrolled HIV-positive adult patients enrolled in the Kilombero and Ulanga Antiretroviral Cohort, Ifakara, Tanzania, with a first episode of cryptococcal meningitis diagnosed by CSF cryptococcal antigen test (CrAg LFA) from October 2014 to December 2015. Participants received oral sertraline 400mg/day and fluconazole 1200mg/day for 14 days, followed by sertraline 200mg/day and fluconazole 800mg/day for 12 weeks, and sertraline tapered over 3 weeks. During

hospitalization, patients were evaluated daily, and lumbar punctures were performed on day 1, 3, 7, 10 and 14. The primary outcome was early fungicidal activity over the first 2 weeks, estimated by linear regression. Secondary outcomes were mortality at 2 and 10 weeks.

Results Twenty-seven participants were enrolled. Eleven (41%) were receiving antiretroviral therapy, initiated a median of 5 weeks (IQR 3-18) prior to meningitis diagnosis. Eighty five percent were symptomatic (23/27) and 63% (17/27) had focal neurologic deficit on examination. Quantitative CSF cultures were available for 15 participants, of whom 2 were sterile and 2 had only one CSF collection prior to death. The median CSF quantitative culture burden was 8,000 (IQR, 1500-70,000) CFU/ml. The CSF clearance rate of the EFA was $-0.233 \log_{10}$ CFU/day (95% CI: -0.111 to -0.356) over the first 2 weeks (Figure 1). Two- and 10-week mortality was 33.3% and 78% respectively.

Conclusion Sertraline and high dose fluconazole combination had improved two-week fungicidal and clinical outcome as compared to fluconazole monotherapy in historical controls. However, 10-week mortality was still unacceptably high. Pre-ART CrAg screening may have prevented ~40% of meningitis cases. Figure 1: Early fungicidal activity

8. Characteristics and geographic distribution of HIV-positive women diagnosed with cervical cancer in Dar es Salaam, Tanzania

Christina Malichewe, Lovgren, Twalib Ngoma

Department of Clinical Oncology, Muhimbili University of Health and Allied Sciences

Background: Cervical cancer is the leading incident cancer and the main cause of cancer-related mortality among women in sub-Saharan Africa. Furthermore, HIV-infected women are at a higher risk of developing cervical cancer than are HIV-negative women.

Objective: The purpose of this study was to distinguish differences in characteristics of HIV-positive and HIV-negative patients with cervical cancer in Dar es Salaam, Tanzania.

Methods: The HIV status of cervical cancer patients diagnosed and/or treated at Ocean Road Cancer Institute in Dar es Salaam, Tanzania, during the period 2007-2011 was abstracted from the medical records. Additional abstracted information included patient's name, age, place of residence, occupation, education, marital status, age at marriage, gravidity, and screening clinic visit results. Ocean Road Cancer Institute patients came from two sources, the screening clinic followed by treatment clinic or the treatment clinic without prior screening. HIV-positive and

HIV-negative patients were compared regarding the above-listed clinical and epidemiologic factors. Multivariable analysis was also performed to assess the risk factors associated with cervical cancer treatment without prior screening at Ocean Road Cancer Institute.

Results: HIV-positive cervical cancer patients tended to be younger, with higher education, and lower parity. Patients screened for cervical cancer prior to treatment were more likely to be HIV-positive (OR: 2.09, 95% CI: 1.36, 3.21), less likely to have higher disease stages (OR: 0.64, 95% CI: 0.43, 0.94), and less likely to reside outside of Dar es Salaam (OR: 0.44, 95% CI: 0.30, 0.65).

Conclusions: Screening for cervical cancer at Ocean Road Cancer Institute is utilised by more HIV-positive patients from Dar es Salaam. Future studies should focus on identifying the reasons for lower utilisation of screening by HIV-negative patients and patients from other distant rural regions in Tanzania.

9. Characteristics of Tuberculosis and Associated Co-Morbidities among Elderly and referent patients in Dar es Salaam

Rar R¹, Kisali Pallangyo²

¹Agha Khan Hospital, Dar es Salaam

²Muhimbili University of Health and Allied Sciences

Background: Old age is associated with impaired immunity, increased risk of co-morbidities, malnutrition and other risk factors for Tuberculosis disease. Studies from Europe and America report that TB in the elderly often present with atypical symptoms and signs and may be confused with other old age related illnesses and hence delay TB diagnosis.

Objectives: To describe and compare characteristics of tuberculosis and associated factors in elderly and referent patients attending TB clinics.

Methodology: A hospital based prospective cohort study of patients attending TB clinics in Dar es Salaam. TB suspects attending TB clinics were investigated using NTLP diagnostic algorithm. Consenting patients had sputum examined for AFB, chest x-ray, full blood count, blood glucose, serum creatinine and HIV test done at baseline and after two months of intensive TB therapy.

Results: Overall 103 elderly and 150 referent patients were recruited and hypertension was recorded in 32% and 6.7% respectively ($p<0.001$). Hyperglycemia was detected in 12/103 elderly compared to 2/150 referent patients ($p<0.001$). Sputum smear positive referents were more likely to have hemoptysis compared to smear positive elderly ($p=0.006$). Lower zone radiologic lesions were observed in 23% of referents and 37.5% of the elderly ($p<0.005$). HIV infection was a risk factor for lower zone x-ray lesions. Lung cavity was found in 65/125 and 22/88 referent and elderly patients respectively ($p<0.001$). Mortality at two months was 17.5% and 6.7% among elderly and referents respectively ($p<0.01$)

Conclusions: Atypical clinical and/or radiological findings, co-morbidities and mortality at two months were significantly more common among the elderly compared to referent patients. HIV prevalence was high in referents and elderly populations; all TB patients should be tested for HIV.

10. Quality Improvement Approaches Improved Delivery of HIV/AIDS Services

*Marina Alois Njelekela, Bonita Kilama, Mussa Sylvester Ndile, Protas Ndayanga,
Patrick Swai, Joseph Eshun
Deloitte Consulting Ltd*

Christian Social Services Commission (CSSC)
USAID Tanzania

Background: Since 2004, the Tanzanian Government in collaboration with USAID/PEPFAR, initiated a care and treatment programme under the National AIDS Control Programme. TUNAJALI II "We Care" is one of those programmes implemented in thirty councils of five regions in Tanzania that include Iringa, Njombe, Morogoro, Dodoma and Singida.

Description: TUNAJALI II supports local ownership and sustainability of Local Government Authorities, Health Facilities and Community Service Organizations to scale-up HIV prevention, care, treatment and support services for an effective HIV and AIDS response. The services are provided at health care facility levels through qualified health care workers and at the community levels through trained community home based care service providers and Community Health Workers.

Lessons Learned: **1. Increased enrolment of Adult and Pediatric Clients into the Programme:** Through QI interventions the program has managed to enroll both adults and children on ART 111,307 an increase of 3.5% before QI approach. **2. Significant improvement in linkage of newly found HIV+ clients into care and treatment clinics:** Njombe region led by having 99.9% of successful referral for clients found to be HIV+ followed by Singida, Morogoro, Dodoma and Iringa having 99.0%, 95%, 92% and 89% respectively. **3. Improvement in Pediatrics PITC:** Between October and December 2015 the program was able to test 7,896 children through PITC. Out of those tested, 366 (5%) children were HIV positive and all were linked to CTC for ART initiation.

Conclusion: QI approaches have increased HIV/AIDS enrolment, care and treatment and facilitated linkages between newly found HIV positive clients into care and treatment clinics in five regions in Tanzania.

Parallel Sessions 1C: Reproductive Health

11. Reaching Men through Vasectomy Services: Successes from Dar es Salaam

Cosmas Alex Kapinga, Annette Angela, Almeida Martha, Kisanga Zukrah
RESPOND Tanzania Project(RTP); Engender Health Tanzania
Ilala Municipal Health Management Team
Dar es Salaam Regional Health Management Team Reproductive
Maternal, New born and Child Health

Background: Non-scalpel vasectomy (NSV), also known as male surgical contraception is safe and highly effective; however, it remains an underused method of family planning (FP) in Africa. Calls for increased inclusion of men in reproductive health, as supportive partners and service users, emphasize the need for research into vasectomy acceptability and decision making.

Aim: Program performance results can narrate successes even in the most underused FP methods among men.

Methods: From October 2012-September 2015, RTP worked collaboratively with health management teams (HMT) to support NSV at 19 facilities in Dar es Salaam. During this period, a service provider (SP) from each of the four facilities; Mnazi Mmoja Hospital, Magomeni Health Centre, Buguruni Health Centre and Amana Hospital were trained on NSV. NSV clients were reached through outreach, service days and routine FP services. Four satisfied clients were used to address myths and misconceptions through testimonies. National FP registers were used to document and report NSV clients.

Results: During the three year implementation, facility scale up increased from 4 to 19, reaching a total of 266 NSV clients. Data reveals a fourfold increase between October 2012- September 2014 followed by a 22 fold increase between October 2014-September 2015. This achievement is attributed to effective collaboration between RTP and HMTs, training/mentorship of NSV surgeons, RTP staff commitment to raise confidence of these surgeons to practice NSV, use of satisfied clients and enhanced counselling on FP, at HIV C&T clinics

Conclusion: Based on this experience in Dar es Salaam, there is evidence that men are willing to choose vasectomy when the service is available and information and counseling are provided. Promotion and ensuring trained providers and availability of vasectomy services should be considered an essential element of contraceptive method mix. Better integration of NSV counseling at all service delivery points will benefit the program

12. Utilization and quality of Emergency Obstetric and New born Care Services in Tanzania Mainland

Projestine S. Muganyizi¹, Edward Maswanya², Stella Kilima², Grades Stanley² Ahmadi Makuwani³, Deus Mogela³, Gasto Frumence¹ and Julius J. Massaga²

¹Muhimbili University of Health and Allied Sciences

²National Institute of Medical Research (NIMR)

³Ministry of Health Community Development, Gender, Elderly and Children Contact:

Background: Most maternal and newborn deaths occur due to non-functional emergency care services. These deaths could be prevented if the women could access effective Emergency Obstetric and Newborn Care (EmONC). In 2008 in efforts to reduce Maternal and Newborn

mortality, Tanzania adopted a One Plan strategy and later the Sharpened One Plan to ensure all hospitals provide comprehensive EmONC and 70% of health centres and dispensaries provide basic EmONC by 2015. The results of this study inform on the status EmONC services and compare the services with UN standards. The focus of this paper is on utilization and quality of EmONC services in Tanzania Mainland. Ethical clearance was obtained from the National Institute for Medical Research.

Methodology We employed multiple methodologies to measure EmONC indicators in all the 25 regions of Tanzania Mainland during the last quarter of 2014. Updated official list of all health facilities that provide delivery services in Tanzania Mainland was used as sampling frame. All hospitals, health centres and a random sample of 35% of all dispensaries were surveyed by trained nurses and doctor. We adapted a standard EmONC tool to add context relevant items. We interviewed facility and unit managers, reviewed documents and conducted observations. Facility GIS locations were captured and sent promptly along with other interview data. Data analysis was done according to UN guidelines for each EmONC indicator. National and population data were provided by the NBS based on TDHS (2010) or the 2012 National Census. Since the sample was not self weighted, some data were weighted.

Results: In 2014 there were 1,850,554 deliveries of which 1,460,262 (79%) occurred in health facilities and 40% delivery rate in fully functional EmONC facilities. The National Met need for EmONC ranged from 2.2% in Rukwa to 49.5% in Ruvuma. Case fatality rate (CFR) for Direct Obstetric Causes of maternal deaths was 1.4% and 0.8% for the indirect causes. Obstetric haemorrhage had the worst (2.5%) CFR. The most common cause of maternal deaths was haemorrhage (39%) followed by Hypertensive disorders (13%). Half of all maternal deaths needed blood transfusion. Overall in Tanzania Mainland most deaths occurred in Hospitals. However, most deaths in the Lake and Western zones occurred in lower level facilities. The commonest source of transport to referral points was hired private transport (51.4%). An ambulance service was accessible by 43% of facilities but only 17.8% had own ambulance.

Conclusions: Institutional delivery has generally improved apparently due to improved health facility network. However the quality of care has lagged behind. There is need to put more emphasis on the quality of care at all levels.

13. Performances and self-perceived competencies of Enrolled Nurse/ Midwives in Pwani Region, Tanzania

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Background: Task shifting from one cadre to another is considered a way to address the problem of severe shortage of human resources for health in rural Tanzania. Since a large percent of health care providers in rural settings comprises of enrolled nurse/midwives, most tasks are shifted to them.

Aim: To analyze performances and self-perceived competencies of Enrolled Nurse/Midwives (ENMs) at rural dispensaries in Pwani Region, Tanzania.

Methods: This was a mixed methods study. A qualitative study involved a purposeful sample of six (6) ENMs and six (6) key informants [2 Community Leaders (CLs) and 4 Dispensary in-charges (DIs)]. This was complemented with quantitative results from 59 respondents. Both content and descriptive analysis approaches were used.

Results: Theme 1: ‘Approval of the performances of ENMs in meeting community health needs’ underscores important services the community members get from ENMs. The dispensary in-charges perceived the ENMs as crucial group in meeting the community health needs. Theme 2: ‘Dealing with difficulties of meeting community health needs’ indicates the problems encountered in providing services to the community. Sometimes CLs witnessed prescription errors from ENMs. Theme 3: ‘Appreciating the performances and competencies of ENMs in a twilight zone’ discloses the acknowledgement of the community towards ENMs’ performance and competencies within and beyond their scope of practices. The DIs added that they usually mentor newly employed ENMs to shoulder clinical responsibilities. The quantitative results showed that all 59 (100%) ENMs provide nursing and clinical services to meet the community health needs. Overall, performance among ENMs above 38 years of age ($p<0.05$), ENMs with primary education ($p<0.05$), and those who had participated in professional development courses ($p<0.01$) was high.

Conclusion: The results highlight performances and self-perceived competencies of ENMs in trying to meet community health needs. The shortfalls shown in this study require stakeholders’ critical analysis to ensure quality and appropriate services to all Tanzanians.

14. Prevalence and Factors Associated with Late Antenatal Care Visit Among Pregnant Women in Lushoto, Tanzania

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Background: Adequate utilization of antenatal health care services is associated with improved maternal and neonatal health outcomes. WHO recommends pregnant women to attend ANC early as in the first trimester (During the first 3 months). However, many women due to various reasons fail to meet the WHO recommendation. This study aim to determined the prevalence and factors associated with late antenatal booking among pregnant women in Lushoto district.

Methods: This washospital based cross sectional study conducted between 19th August to 26th September 2015 in Lushoto involving pregnant women. A standardized questionnaire was used to obtain various demographic and obstetrics history. Data analysis was done using (SPSS) and Relationship between outcome variables and exposure variable was done using chi square test

and p value of ≤ 0.05 was considered significantly. Multivariate logistic regression was used to measure association after controlling for confounder odds ratio corresponding with 95% confidence interval with a p value of less ≤ 0.05 was considered significantly.

Results: Out of 240 study participants 169 (70.4%) booked late. Delayed booking was mainly associated with unmarried marital status (AOR=3.08; 95%CI 1.149-8.275; P value=0.025) and unemployment status (AOR=4.28; 95% CI 2.11-8.679; P value=0.000)

Conclusion: Late first antenatal clinic visit was high in Lushoto and was highly associated with social economic factors therefore provision of continuous health education and community sensitization on the importance of timely seeking of ANC services should be strengthened.

15. Adoption of Interventions for Ending Preventable Maternal Mortality: A Case of Tumbi Ward in Tanzania

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Background: Ending Preventable Maternal Mortality is a pillar of sustainable development, considering the critical role of women in families, economies, societies, and in the development of future generations and communities. Investing In maternal health will secure substantial social and economic returns. Some of the broad strategic objectives laid out as a framework for countries to develop and implement interventions for EPMM include: to address inequities in access to sexual reproductive and maternal health care services; ensure Universal Health Coverage for sexual, reproductive and maternal health care and address all causes of maternal mortality. This study was carried out at Tumbi ward in Kibaha district, in Tanzania to identify efforts taken by the various stakeholders at ward level to adopt prescribed interventions to end preventable Maternal Mortality.

Methods: A sample of 83 respondents was drawn by simple random sampling procedure. Data were collected using structured questionnaire, interview, survey, focused group discussion, and documentary review. Statistical package for Social Sciences (SPSS) was used to analyze quantitative data while qualitative data were analyzed using content analysis.

Results: The study revealed that, government provides; free antenatal services which include: Mosquito nets, malaria drugs and contraceptives. It also promotes the construction of health facilities, Provision of education and information to community. Promote early booking to antenatal clinics. Male participation in sexual and reproductive health services is also encouraged. However, the results also showed that some pregnant women Attended very late to antenatal care, as the result they developed complications and sometimes died.

Conclusion: A lot of effort has been done at the ward level to prevent maternal mortality. However there are a lot challenges too. Some of the pitfalls include shortage of skilled staff and lack of equipment and medical supplies.

Parallel Sessions 1D: Basic Science Research

16. EFFECT OF INTEGRATED NURSING PROCESS ON THE OUTCOME OF CARE OF CHILDREN ADMITTED WITH PNEUMONIA IN DAR ES SALAAM: A QUASI EXPERIMENTAL STUDY

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Background: Nursing process is a framework widely accepted and suggested as a scientific method to guide procedures and qualify nursing care. Only little evidence globally, reported reduction in mortality and/or morbidity among patients as a result of integration of nursing process in the care of patients in comparison to non-use of the nursing process. Pneumonia, a leading killer of children globally with higher spikes in Tanzania, has been used to evaluate the effectiveness of integrating the framework in the care, and to quantify improvements in the caring processes, and patient outcomes.

Objectives: Using quasi experimental study we aimed at assessing the effect of integrating nursing process to the pattern of nursing care, patient outcomes and length of hospital stay of children admitted with pneumonia at Temeke and Amana Regional Referral hospitals in Dar es Salaam.

Methodology: A quasi experimental study using 147 and 180 children admitted with pneumonia at Amana regional referral hospital (intervention) and Temeke regional referral hospital Dar es Salaam (control) respectively was conducted. Nurses working in the paediatric wards of the intervention arm received a necessary on-job refresher training in order to enable them integrate nursing process in the care of children with pneumonia. The control hospital continued to provide standard care. An intention to treat analysis approach was performed to ascertain the effect of the intervention.

Findings: Integration of nursing process yielded a strong positive correlation with the pattern of care with a coefficient of determination (R^2) 95.3% suggesting that the observed high scores of pattern of care in the treatment group was associated with training and integration of nursing process (intervention). There was no effect in integration of nursing process to the mortality of children. However, it was significantly found that Patients in the intervention group had the likelihood of staying 0.65 day less than those in the control group, ($\beta = -0.69$, 95% CI = -1.00, -0.38).

Recommendation: The researchers recommend that mechanisms are made to ensure that nurses working in the paediatric wards use nursing process as they provide care to children.

17. A review of health and working conditions in greenhouses in low-and middle-income countries

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Background: Greenhouses can contribute to increased harvests and improved crop safety. Working conditions in greenhouses are characterized by reduced exchange of air, high temperatures and high humidity within semi-enclosed areas, and the workers might be exposed to different chemicals including pesticides. The health of workers in greenhouses has been studied in several high-income countries, yet less is known about this in low- and middle-income countries.

Aim: We aimed to evaluate the published literature from low- and middle-income countries, looking into reproductive, endocrine, genetic, respiratory and dermal health of workers in greenhouses, as well as on working conditions in the greenhouses.

Methods: A systematic literature review was performed, by searching for epidemiologic studies in Pubmed and WebOfScience databases.

Results: In accordance with studies from high-income countries, adverse health effects comprising reproductive, endocrine, genetic, respiratory and dermal outcomes were reported. Negative health effects were in particular related to pesticide exposures. Effects on thyroid, pituitary and steroid hormone levels associated with organophosphate (OP) pesticides appeared as a consistent finding. Several studies reported that few greenhouse workers use proper personal protective equipment (PPE). Most studies had a cross-sectional design, and many lacked statistical power, thus strong conclusions regarding the actual causes of the reported health problems in greenhouses cannot be drawn.

Conclusion: Workers in greenhouses are exposed to substances affecting endocrine function. Regarding health effects on reproductive, genetic, respiratory and dermal health, more research is needed to prove causal relationships with specific risk factors.

18. Anti-hypertensive potentials of tri-terpenoids derived from *Myrica cerifera* plant extracts in vitro and in vivo

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Background: Elevated endothelin levels are associated with hypertension and cardiovascular diseases, e.g., chronic heart failure. An endothelin synthesis and/or receptor inhibitor is potentially beneficial for treating cardiovascular diseases. The methanol extract of *M. cerifera* plant (named SPOO2P) is rich in myriceric acid A and C (triterpenoids), and is known to inhibit endothelin-1 (ET-1)-induced Ca²⁺ flux in rat aortic smooth muscle cells. Myriceric acid A has been reported as a non-peptide antagonist of endothelin A (ETA) receptors.

Aim: We determined the effects of SPOO2P on aortic muscle contractions in vitro and on blood pressure of anesthetized rats.

Methodology: Contraction of aortic rings bathed with physiologic salt solution (37°C; gassed with carbogen) was measured with force displacement transducers coupled to Tissue Force Analyzers (Micomed, Louisville, KY). Hypertension was induced with nitro-L-arginine methyl ester (L-NAME; 1 g/L) in drinking water for 3 weeks.

Results: SPOO2P (20-100 µg/ml) concentration-dependently antagonized aortic contractions elicited by endothelin-1. The effect was not reversible by short-term washing. SPOO2P (100 mg/kg; orally) also significantly reduced the mean arterial blood pressure (MAP) and heart rate (HR) of control and L-NAME hypertensive rats. The vehicle, DMSO, did not inhibit contractions or reduce MAP and HR in anesthetized rats.

Conclusion(S): SPOO2P is a potentially useful anti-hypertensive botanical drug if it meets safety standards.

19. Pre-Formulation Development of Lamivudine 300 Mg and Tenofovir Disoproxil Fumarate (Tdf) 300 Mg Fdc Tablets.

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Background: A pre-formulation process is a critical step in formulation development as it predicts what would happen upon mixing and compressing together excipients and active substances. In this study, physical and chemical characteristics of Lamivudine, Tenofovir Disoproxil Fumarate (TDF) and potential excipients were systematically followed and documented.

Aim: The goal of this scientific work was to carry out pre-formulation studies including compatibility studies on Lamivudine and Tenofovir Disoproxil Fumarate with their potential excipients (excipients with high chances of interacting with the two drugs).

Methodology: A pre-formulation process was conducted for a period of ninety(90) days in which Lamivudine and Tenofovir Disoproxil Fumarate (TDF) were mixed together with their potential excipients.

The interaction was studied in three set of environments namely uncontrolled room conditions for WHO zone IV b, oven conditions in which an oven was set at 50 degree centigrade and an accelerated climatic condition for WHO Zone IV b.

Results: The amount of active ingredient is comparable to that of day 90 for Lamivudine in all the tested conditions (Room, Oven and Climatic conditions), hence no significant change of Lamivudine was observed whereas for Tenofovir Disoproxil Fumarate only the amount of the drug at room condition was comparable to that of day 90 in the same condition.

Conclusion: It can be concluded that microcrystalline cellulose, cross linked Sodium carboxymethyl cellulose and magnesium stearate can be compressed together with Lamivudine and Tenofovir Disoproxil Fumar to produce a pharmaceutically acceptable solid dosage form.

20. Pesticidal Bioactivity and influence on quality parameters of Amanita muscaria and Boletus sanatus in Stored Maize Grains.

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Background: Sitophilus zeamais is highly infestant to maize grains, a staple food in Tanzania. The use of modern pesticides by subsistence farmers is facing the problem of affordability, limited access, and human toxicity concerns.

Aim: To Assess the Pesticidal Bioactivity and effects on quality parameters of Selected Tanzania Indigenous Mushroom Species against *Sitophilus zeamais* in Stored Maize Grains.

Methods: Bioactivity and repellency profiles of nine mushroom species was tested against *Sitophilus zeamais*. Six crude absolute ethanol concentrations of all nine mushroom species were tested. Forty (40) maize grains were used for each treatment in a completely randomized design (CRD) using three replicas. Counting of dead insects was conducted for 21 days Actellic acid, solvents and untreated grains being used as controls. Validated methods were adopted for testing the effects of crude extracts treatments on moisture content as well as seed viability of stored maize grains over the period of 150 days.

Results: In addition to *Cantharellus cibarius* which activity was reported in the previous reports, *Amanita muscaria* and *Boletus sanatus* exhibited good profiles of bioactivities, killing 61.5% and 43.5% of insects respectively at 300 mg/ml in 21 days after treatment. Moreover the extract showed the reproduction inhibition rate of 68.6% and 94.2% as well as a decrease in grain damage of 85.3% and 89.58% respectively. Studies on repellence profile, effects on seed viability and moisture content are ongoing, results of which will be presented during the conference.

Conclusion: This study has so far demonstrated a potential bioactivities of *C.cibarius*, *A. muscaria* and *B. sanatus* against *S.zeamais*. This can be a substitute to the commercially available pesticides to subsistence farmers as well as a source of novel pesticidal compounds.

Parallel Sessions 1E: Health Policy

21. Organizational Commitment of Health Professionals and Associated Factors in Government Health Facilities of Gurage Zone, South Ethiopia

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Background: There is a general conviction that organizational commitment has a positive and significant impact upon business performance and reform process of health systems. However, to the best of the investigators knowledge, there are no studies examining organizational commitment in the health care setting of Ethiopia.

Objective: To assess the level of organizational commitment and associated factors among health professionals in government health facilities of Gurage zone, south Ethiopia.

Methods: A facility based cross sectional study was conducted in 30 health centers and one general hospital from March, 20/2014 to April, 12/2014 in Gurage zone, south Ethiopia. A total of 424 health professionals were included in this study. A self-administered questionnaire asking about socio-demographic and economic characteristics of the participants, organizational commitment, job satisfaction and perceived organizational support was used. Factor analysis was conducted to identify the measurement scales and factor scores were used in both binary and multiple linear regressions.

Results: The percentage mean score of organizational commitment for health professionals working in government health facilities of Gurage zone was 64.81%. This study found that perceived leadership style and training opportunity, perceived value and care for employee and perceived remuneration were predictors of organizational commitment. Moreover, perceived staff interaction and perceived resource availability and work setting were factors affecting organizational commitment in this study.

Conclusions and recommendation: The percentage mean score of organizational commitment for health professionals working in government health facilities of Gurage zone was comparable to those reported from other developing countries. Hence, health managers and policy makers has to work on designing human resources management system with arrangements for training opportunities, reasonable reward and recognition system and appropriate leadership approaches to promote commitment among health professionals.

22. Training and deployment of Medical Doctors: the case of Tanzania post-1990s health sector reforms

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Background Shortage of skilled health workforce is a global crisis. Since 1990s Tanzania adopted Health Sector Reforms (HSRs) partly to ensure adequate skilled health workforce. Documentation regarding achievements in training and deployment of Medical Doctors (MDs) post 1990s HSRs is minimal Aim: To assess the achievements in training and deployment of Medical doctors in the health sector in Tanzania twenty years post-1990s health sector reforms.

Method: A case study design using Human Resource for Health (HRH) conceptual model based on health workforce development stages and concepts of demand and supply was employed. We analyzed secondary data to document; number of MDs trained locally and abroad and number of MDs recommended for the health sector in Tanzania from 1992 to 2011. A regional cross-sectional survey was done to estimate MDs available by 2011.

Results: By 1992 Tanzania had 1,265 MDs working in the country. From 1992 to 2010 a total of 2,622 MDs were trained, totaling to 3,887 MDs by 2011. Considering attrition of 3%, number of MDs by 2011 was 3,770. Tanzania requires between 3326 and 5535 MDs. Only 1,299 MDs were found in all regions, this is less than 40% of all MDs trained post HSRs. Maldistribution favoring big cities was evident. There was no information available on the more than 60% of MDs uncaptured by our survey.

Conclusion: Number of MDs trained post-1990s HSRs has more than doubled compared with the period before. However, the number of MDs available in the country is almost the same as

before the HSRs with severe geographical maldistribution. HRH planning should consider the three stages of health workforce development conceptualized under demand and supply model. HRH auditing and improvement of the HRH database is strongly recommended in dealing with HRH crisis in Tanzania.

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23. Missing persons: Addressing residential mobility in an urban cohort. The case of the Dar es Salaam Health and Demographic Surveillance site

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Background: Human mobility although complex and fluid, is considered an integral part of human development propagated by economics, marriage, climate change and health. Aim: To determine individual and household characteristics of residential mobility in a fast-growing urban city. ? Methods: We use the Dar es Salaam demographic surveillance study site. Residential mobility is defined as ever experiencing a migration event since enrollment. Hierarchical models allowing for a random household intercept were built.

Results: A total of 110, 882 individuals living in 21,000 households have been enrolled as of June 2015. About 27% of the respondents had changed their residential location at least once during the study period. For an individual from a given household the probability of ever moving statistically increased with age and household wealth, peaking at age 15 f?? 19 years [adjusted Odds Ratio = 6.8; 95% confidence interval: 5.11, 8.94; p<0.001]. There was a 41% increased likelihood of a female to move compared to a man (p<0.001). Having primary education had an increased odds of moving of 20%. The probability decreased by 30% for secondary education and above compared to less than primary education. Each individual from a household with 5-8 members had an increased odds of ever moving of 40% [aOR = 1.4; 95%CI: 1.19, 1.55; p<0.001]; the odds increased to three times [aOR = 2.6; 95%CI: 2.15, 3.23; p<0.001] for larger households (>8 members) compared to a household with less than 5 members. The likelihood of ever moving increased by 50% [aOR = 1.5; 95%CI: 1.34, 1.77; p<0.001] if one lived in a female-headed household and decreased by 80% [aOR = 0.2; 95%CI: 0.21, 0.27; p<0.001] if the family owned the house.

Conclusion: Individual and household characteristics can determine the probability of movement in urban low-income settings. This information can be used to develop better strategies to address development and health of mobile populations.

24. Governance Perspectives in Decentralised Maternal Health Care Delivery, Tanzania

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Background: Delivery of maternal care services is one of the key interventions for the reduction of maternal mortality and morbidity. Health system related factors such as shortage of skilled health care providers, drugs and supplies and limited number of health facilities makes the health system in these countries dysfunctional and unresponsive in delivering optimal maternal health care. The general objective of this study was to explore how maternal health related policies have been implemented in a rural district of Tanzania, highlighting governance related factors influencing delivery of maternal health care within a decentralized health system.

Material and methods: The qualitative case study was conducted between 2011 and 2014 in Kongwa district, Dodoma region involving district health managers; health facility managers; health workers and women.

Results Implementations of maternal health policies was not as smooth as prescribed in policy documents and delivery of optimal maternal health services was affected by unreliable drug delivery system and unconducive working conditions. Lack of sufficient human resources, inadequate fiscal capacity of local government authority and limited space of local health leaders for the direct decision making were governance related issues that affected implementation and delivery of maternal health care services.

Conclusion For equitable access to sustainable maternal health care, there should be central government commitment to support local government with both financial and management capacity, reorganization of the decentralized district health system to create an enabling and supportive local health system leadership and establishment of institutional arrangements that foster partnership with mutual accountability roles among partners

25. Financing/Insurance rehabilitation services care provision and improve lives of disabled population in Tanzania

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Background: 15% of the world's population has some form of disability. Where private health insurance dominates the health care financing ensure that people with disabilities are covered and consider measures to make the premiums affordable. Aim: Improved health outcomes for people with disabilities through financing/Insurance of rehabilitation services, ensure disabled people are covered and consider measures to make the premiums affordable, and access to quality in Tanzania.

Method: Descriptive Cross sectional study both Quantitative and Qualitative were used. 12/19 centers (63.2%) were sampled from 10 regions within the seven (7) zones in Tanzania. 64/77 responded on quantitative, while 13/77 on qualitative. Structured, semi-structured questionnaires, checklists were the tools for data collection. Ministry of Health & Social Welfare, Regional Medical Officers, Drs In charges, Directors of Consultant hospitals, District Medical Officers, Heads of the Orthopedics /Physiotherapy units, and Clients utilizing the rehabilitation services, were among the respondents. Data analyzed by use of SPSS 20.5 version, Ethical Clearance, informed consent obtained.

Results: 8/23 facilities (34.8%) received external support that included, consumable materials; operations, example fistula; funds; working facilities; renovations of facilities; staff training; operational costs; support albinism etc. The external support provided by ; ICRC-SFD at CCBRT, MOI and Mwananyamala Municipal Hospital; Medical Missionary Relief at Mbalizi DDH; DANIDA and Zanzibar Outreach Infant Club Foot Appeal at Mnazi Mmoja Hospital; CARITAS-VERBAND Dusseldorf, Germany; Lillian Foundation at Monduli; Germany TB and Leprosy Relief at Ruvuma Regional Hospital; and African Medical and Research Foundation (AMREF) at St. Joseph (Peramiho) Hospital. Of 85 respondents, 48/85 (56.5%) indicated no corresponding budget, makes provision of rehabilitation services difficult.

Conclusion: Governments can improve health outcomes for people with disabilities by improving access to quality, affordable health services, which make the best use of available resources. The disabled population does not get the required services according to their needs.

Parallel Sessions 2A: Reproductive Health

26. Pastoralism and Antenatal care service utilization in Dubti district; Afar, Ethiopia, 2015; cross-sectional study.

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Background: Health service utilization among pastoralists in Ethiopia is not well documented. Available data are very few and mostly institution-based. Health services are particularly inadequate and poorly equipped. They are scarce, inaccessible, and inappropriate to the pastoral

way of life. Effective antenatal care use has been shown to influence women's use of maternal health services, probably the most effective intervention in reducing maternal mortality in the developing world. Despite; many studies are done on ANC service utilization among agrarian women; the studies done on pastoralist women are almost negligible. Therefore; this study intended to assess utilization of ANC services among pastoralists of Afar region, Ethiopia.

Method: Community based cross-sectional study was carried out from 5th January to 5th February, 2015. The data was collected by interviews through questioner. Statistical analyses were done to describe pertinent findings.

Result: Of 788 women, 42.4% (334) made at least one antenatal care visit, while 19.5% (65) had adequately utilized antenatal care (i.e., made four or more antenatal care visits). Only 9.7% of women visited an antenatal care center during the first trimester (12 weeks). Institutional delivery service utilization of the district was extremely low 7.4% (58). Educational status of the mother had significant association with institutional delivery. Mothers who attended college/university were 5 times more likely to utilize delivery service than those mothers who are illiterate. ANC utilization in peri-urban area was 2 times more than ANC utilization in rural areas with CI of (1.376, 3.595). Multivariate analyses, being in peri-urban residence (AOR=2.224, 95% CI: 1.38, 3.60), possessing radio/TV (AOR=3.134, 95% CI: 2.204, 4.457), were positively associated with ANC service utilization.

Conclusion: Every pregnant woman should receive at least four ANC visits but only 20% of the respondents were able to fulfill the recommendation. Pastoralists' lifestyle, access, demographic and socio cultural barriers affect proper utilization of maternal health services. Increasing service coverage and promotion of available services in the community, accessible health service; transportation and improving information, education and communication on maternal health services must be intensified to reach women residing in pastoral areas of the country. Rigorous efforts are needed to reach disadvantaged groups to overcome health inequities between Agrarian and pastoral women.

Key words: Pastoralism, Antenatal care utilization, Dubti district, Afar Region, Ethiopia

27. Availability and distribution of EmONC Services in Tanzania Mainland

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Background: Most maternal and newborn deaths occur due to non-functional emergency care services. These deaths could be prevented if the women could access effective Emergency Obstetric and Newborn Care (EmONC). In 2008 in efforts to reduce Maternal and Newborn mortality, Tanzania adopted a One Plan strategy and later the Sharpened One Plan to ensure all hospitals provide comprehensive EmONC and 70% of health centres and dispensaries provide basic EmONC by 2015. The results of this study inform on the status EmONC services and compare the services with UN standards. The focus of this paper is on EmONC service

availability and distribution in Tanzania Mainland. Ethical clearance was obtained from the National Institute for Medical Research.

Methodology: We employed multiple methodologies to measure EmONC indicators in all the 25 regions of Tanzania Mainland during the last quarter of 2014. Updated official list of all health facilities that provide delivery services in Tanzania Mainland was used as sampling frame. All hospitals, health centres and a random sample of 35% of all dispensaries were surveyed by trained nurses and doctor. We adapted a standard EmONC tool to add context relevant items. We interviewed facility and unit managers, reviewed documents and conducted observations. Facility GIS locations were captured and sent promptly along with other interview data. Data analysis was done according to UN guidelines for each EmONC indicator. National and population data were provided by the NBS based on TDHS (2010) or the 2012 National Census. Since the sample was not self weighted, some data were weighted.

Results: In total 5207 health facilities conducted deliveries in Tanzania Mainland, 83% of those being dispensaries. In total 2405 (46.2%) facilities were visited of which only 251 (10.4%) had provided a full set of seven BEmONC functions in past 3 months. A full set of CEmONC functions was provided by 130 facilities.

Nationally EmONC standards were met by 40% of the regions. Nevertheless, 76% of all the regions had attained or exceeded the minimum standard for CEmONC distribution. Lowest EmONC standards were found in Rukwa (4.4%) and Katavi (6.6%) and the highest in Dar-es-Salaam (78.3%) and Pwani (79.3%). Fully functional EmONC facilities were typically hospitals and clustered around townships and cities. Sixteen (64%) regions had an average transport time of less than 2 hours to a referral point during dry season. The longest distances were found in the Lake and Western zones. The commonest means of transport to referral point was hired private transport (51.4%).

In conclusion: the availability of EmONC services in Tanzania Mainland are mostly below the recommended UN standards but with a huge potential to upgrade the existing facilities. Upgrading the existing structure, improving supplies and capacity building should be the major focus.

28. Vitamin D Status and Associated Factors in Neonates at Muhimbili National Hospital, Dar Es Salaam, Tanzania

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Background: Vitamin D deficiency (VDD) is emerging as a serious public health problem globally, however due to lack of resources, Vitamin D levels are routinely tested amongst neonates.

This study was done to determine the trend of vitamin D deficiency in neonates to support emphasis on early supplementation of all the neonates.

Aim:The aim of this study was to determine vitamin D levels in neonates and risk factors which are associated with low levels of vitamin D in neonates.

Methodology: A cross-sectional study conducted among neonates admitted at Neonatal Ward of Muhimbili National Hospital.

Means and proportions were calculated from summarized data in frequency tables. Chi square test was used to determine association between Vitamin D and various risk factors such as sex, infant birth weight, gestation age, parity of the mother, maternal age and HIV status of the mother.

Results:A total of 170 neonates were studied, out of which 80% had vitamin D deficiency. Neonates born to HIV positive mothers were significantly less likely to have vitamin D deficiency (OR 0.21, 95% CI 0.06 – 0.77, $p = 0.009$). Subgroup analysis revealed the association to be stronger in term neonates ($p = 0.005$). The association was not present among preterm newborns. Other factors that were studied but did not show association with vitamin D deficiency included sex of the baby, parity, maternal age, gestational age, breastfeeding status and comorbidity.

Conclusion:Vitamin D deficiency had a prevalence of 80% in the newborns. HIV exposed newborns were significantly less likely to have vitamin D deficiency.

29. Factors associated with history of facility-based delivery among HIV-positive and HIV-negative pregnant women in Tanzania

Gretchen Antelman¹, Gaspar Mbita¹, Roland van de Ven¹, Prosper P Njau², Godfrey Woelk¹

¹Elizabeth Glaser Pediatric AIDS Foundation

²Ministry of Health, Community Development, Gender, Elderly and Children

Background/Aim: Facility-based deliveries are promoted in PMTCT and maternal, neonatal, and child health (MNCH) programs, yet examination of how social empowerment or partner-related factors are linked to facility-based delivery is often lacking in PMTCT/MNCH program evaluations.

Methods: The SAFI study in Tabora - an intervention using SMS appointment reminders and cash transport payments to affect attendance and facility-based delivery--recruited pregnant women from 27 antenatal clinics in 2015. This baseline analysis of eligible HIV-positive and HIV-negative women ($n=1153$; age ≥ 18 , multiparous) identified correlates of having one's *most recent delivery in a facility vs. not*.

Results: HIV-positive women comprised 54% of the sample (25% newly diagnosed; 29% known HIV-positive); 75% reported delivering most recently in a facility. Two-thirds (65%) were farmers, 45% had low education, and 65% were recruited from primary antenatal clinics. After adjusting for socio-economic status and prior births, factors associated with prior facility-based delivery included greater distance from the facility (adjusted odds ratio [AOR]=0.43, 95% confidence interval [CI]: 0.24, 0.78), some partner education compared to none (AOR=1.44, CI: 1.02, 2.04), knowledge of the national mHealth free text messaging (SMS) service on safe motherhood (AOR=1.81, CI: 1.30, 2.53), knowledge of ARV effectiveness in reducing vertical transmission risk (AOR=2.68, CI: 1.17, 2.76), and having a phone-based bank account registered in their own name (AOR=1.95, CI: 1.34, 2.84).

Conclusions: The lack of association between facility-based delivery and HIV status suggests that HIV-related stigma may not be a significant barrier to accessing safer delivery care. Association of health knowledge, financial autonomy, and partner's education suggests that social empowerment and partner involvement may be important determinants of access to delivery services. In particular, because mobile phone banking allows women to independently save and make financial transactions, PMTCT/MNCH programs may benefit from leveraging mobile technology to support better decision-making and health outcomes.

30. Community health worker supervision, communication with health providers, feeling appreciated, and satisfaction levels are associated with levels of work output in Tabora, Tanzania

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Background/Aim: Community health workers (CHW) are in the process of being recognized as a formal support cadre in Tanzania. The UMOJA* evaluation aims to measure effectiveness of two interventions related to improving service utilization through enhanced CHW engagement. This analysis explores factors associated with lower levels of CHW work efforts and outputs using UMOJA baseline data.

Methods: CHWs (n=158) completed structured interviews in December 2015, representing 93% of all CHWs at 25 candidate UMOJA facilities. The outcome of interest was defined as “work output,” a composite variable using days/hours usually worked, households visited, and estimated proportion of catchment visited regularly.

Results: The mean age of the CHWs was 39 years; 52% were female; 67% completed primary school, 13% had some secondary, and 20% completed secondary education. Sources of income included farming (61%), informal/self-employment (29%), and CHW work (10%). Almost all (94%) owned a mobile phone. Work output scores were “low” for 16%, “medium” for 61% and “high” for 23% of CHWs. Factors associated with lower CHW work output included supervisor quality ($p<.08$), not recently speaking by phone with a health provider ($p<.02$), believing that their CHW work did not fully meet community expectations ($p<.05$), and having lower satisfaction scores on items related to professional growth and work load. Less than 1% of CHWs reported receiving airtime allowance.

Conclusions: Low CHW performance appears to be related to perceived quality of supervision, lack of perceived appreciation from the community, and lack of satisfaction with some aspects of working conditions. Encouraging CHW-provider communication may help to strengthen CHWs' ability to meet work output targets, and their perception of supervision quality. While further analysis of factors associated with CHW satisfaction is needed, these findings suggest that CHW

service provision could benefit from airtime allowances, and encouraging CHW-provider communication outside of routine reporting meetings.

31. Scaling up of caesarean section deliveries in rural Tanzania; The ups and downs of Assistant Medical Officers

Nathanael Sirili, Sirel Massawe, Amani Anaali and Lilian Mselle

Background: Maternal Mortality Ratio (MMR) is still very high in Tanzania (432/100,000 live births). The low uptake of caesarian sections especially in rural areas (estimated at only 3.5%) where there is a critical shortage of skilled staff contributes to this unacceptably high maternal mortality ratio. The study explores the critical role of the AMO cadre in the provision of CS in rural Tanzania. **Aim:** To explore and describe the contribution of Assistant Medical Officers (AMOs) in performance and scaling up caesarean section delivery in Tanzania

Methodology: A case study approach was used and quantitative and qualitative data were collected from four rural districts in four zones of Tanzania, namely Kasulu, Masasi, Handeni and Kilombero. Quantitative data for CS from 2012 to 2014 were extracted from theatre and labor ward registers. In-depth interviews with AMOs, theatre nurses, anesthetists and labor ward nurses were done to explore performance of caesarean sections conducted by AMOs in Tanzania. Quantitative data analysis was done with the aid of SPSS version 21 while content analysis was used for the qualitative data.

Results: A total of 1804 caesarean sections performed. A total of 1774 (98.3%) CS were performed by AMOs and the rest were by MDs. Baby's outcome recorded at five minutes were; 2% still birth, 9% APGAR score below seven of which 12% were severely depressed at APGAR score below 4. Adverse outcomes were attributed to; critical shortage of anesthetists' poor working environment, including delayed referrals and a demotivated workforce.

Conclusion: Skilled and motivated workforce should be in place for scaling up CS. This study highlights the contribution of AMOs in reduction of MMR in Tanzania, when provided with an enabling work environment.

32. Changes in the pattern of Kaposi's sarcoma at Ocean Road Cancer Institute in Tanzania (2006-2011)

Lia Koski, Twalib Ngoma, Julius Mwaiselage, Lynne Le and Amr S Soliman

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Department of Clinical Oncology, Muhimbili University of Health and Allied Sciences

Background: Tanzania has high human immunodeficiency virus and human herpes virus-8 rates linked to Kaposi's sarcoma.

Objective: To examine changes in proportions of Kaposi's sarcoma to all cancers over the period (2006-2011) of increased acquired immune deficiency syndrome management by anti-retroviral treatment.

Methodology: 1504 Kaposi's sarcoma case notes from Ocean Road Cancer Institute were reviewed. Information regarding age, gender, human immunodeficiency virus and tuberculosis, anti-retroviral treatment duration and Kaposi's sarcoma lesions was abstracted.

Results: Male Kaposi's sarcoma patients (59.6%) were older (42.1 ± 11.5 years) than women (40.4%) (36.2 ± 9.6 years). Kaposi's sarcoma proportions declined from 10.1% in 2003 to 7.4% in 2011. Being a woman was associated with increased oral and generalized lesions and higher numbers of lesion locations (odds ratio = 2.17, confidence interval: 1.35, 3.51; odds ratio = 1.49, confidence interval: 1.08, 2.06; odds ratio = 1.06, confidence interval: 0.79, 1.41, respectively). Tuberculosis was associated with oral, generalized and number of lesion locations (odds ratio = 2.08, confidence interval: 1.10, 3.93; odds ratio = 2.06, confidence interval: 1.28, 3.33; odds ratio = 1.88, confidence interval: 1.19, 2.97, respectively). Anti-retroviral treatment duration showed a protective effect with oral, generalized and number of lesion locations (odds ratio = 0.55, confidence interval: 0.33, 0.91; odds ratio = 0.73, confidence interval: 0.52, 1.01; odds ratio = 0.89, confidence interval: 0.67, 1.18, respectively).

Conclusions: With increasing number of patients receiving prolonged anti-retroviral treatment, future studies should investigate long-term effect of anti-retroviral treatment and tuberculosis in Tanzania and countries with human immunodeficiency virus infection.

33. Treatment of Burkitt lymphoma in equatorial Africa using a simple three-drug combination followed by a salvage regimen for patients with persistent or recurrent disease

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Clinical Oncology, Muhimbili University of Health and Allied Sciences
Non-Communicable Disease Accept Submission

Background: Tanzania has high human immunodeficiency virus and human herpes virus-8 rates linked to Kaposi's sarcoma.

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Conclusions: With increasing number of patients receiving prolonged anti-retroviral treatment, future studies should investigate long-term effect of anti-retroviral treatment and tuberculosis in Tanzania and countries with human immunodeficiency virus infection.

34. Evaluation of cervical visual inspection screening in Dar es Salaam, Tanzania.

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Objective: To evaluate the feasibility and performance of screening for cervical cancer using visual inspection with acetic acid (VIA) or with Lugol's iodine (VILI) in Dar es Salaam, Tanzania.

Methods: The accuracy of tests for detecting cervical intraepithelial neoplasia (CIN) was assessed in a cross-sectional study of 10378 women. All women who were screened underwent colposcopy, and biopsies were offered to those with abnormal colposcopy results.

Results: The positivity rates were 3.8% for VIA and 4.8% for VILI. The peak positivity rates for both visual tests were observed just after training or re-training and gradually declined thereafter. CIN 1 was diagnosed in 41 women, CIN 2-3 in 33 women, and invasive cancer in 200 women, showing high detection rates of invasive cancer. The sensitivity and specificity for the detection of CIN 2-3 lesions were 60.6% (95% confidence interval [CI], 42.1-77.1) and 98.2% (95% CI, 97.9-98.4), respectively, for VIA; and 93.9% (95% CI, 79.8-99.3) and 97.3% (95% CI, 97.0-97.6), respectively, for VILI. Two-thirds of the women detected with CIN 2-3 lesions were treated.

Conclusion: Both visual screening tests are useful and accurate, especially in low-income settings. Standardization of assessment of the visual inspection techniques, continual training and supervision, and quality control measures are important for successful visual screening programs.

35. Paediatric Hodgkin Lymphoma in Tanzania: Presentation and Response to Treatment

Nazima Jaffer Dharsee
Ocean Road Cancer Institute

Background: Hodgkin's Lymphoma (HL) is a common childhood neoplasm among children in developing countries. Treatment with chemotherapy (and radiotherapy when indicated) is known to achieve a high cure rate in developed countries, but little is known about how children with HL in developing countries respond to treatment.

Aim: To describe the clinical-pathological characteristics and treatment modalities used in children with HL in Tanzania, and determine the relationship between these and response to therapy.

Methods: A retrospective study involving 54 cases of HL among children and adolescents attending the Paediatric Oncology Unit of ORCI/Muhimbili National Hospital, Dar es Salaam, from January 2008 to December 2011. Data was extracted from clinical records/ treatment charts and analysed using SPSS V16. The association between treatment response and clinical pathological factors, treatment regimens and duration of therapy was examined.

Results: The mean age of the patients was 11 years, 45 of them were males. All patients presented with a mass, 52% presented with fever, and 35% came with stage III disease. Standard chemotherapy with alternating cycles of ChIVPP/ABVD was the most commonly prescribed regimen, and 65% achieved complete remission. A higher complete remission rate was associated with early stage (I and II) disease, absence of weight loss as an associated symptom, ChI/VPP/ABVD chemotherapy regimen and completion of the prescribed number of chemotherapy cycles.

Conclusion: Paediatric HL patients in Tanzania present with similar epidemiological and clinical features as in other developing countries. Disease stage is strongly related to treatment outcome. Treatment with the current standard regimen of ABVD/ChIVPP is highly effective, particularly in early disease.

36. Colorectal Cancer Pathology at Muhimbili National Hospital Dar es salaam, Tanzania

Ntakirutimana Gervais, Kitinya James
Anatomical pathology resident

Background: Colorectal cancer (CRC) is among the most common cancers worldwide which is thought to be of the western world. An increase of CRC in resource- limited countries is on record with presentation at younger age group and advanced stages. This study is meant to unveil pathological characteristics of CRC in Tanzania.

Objective: Our broad objective is to describe the pathological aspects of CRC at Muhimbili National Hospital (MNH).

Study design: Retrospective cross-sectional study

Setting: The study was conducted in pathology department, histopathology unit at MNH, Dar es salaam, Tanzania.

Methodology: Paraffin-embedded blocks of colorectal cancer patients diagnosed between January 2011 and December 2014, were retrieved in departmental archive, recut, and stained by routine H&E. Information pertaining to study participants was retrieved in hospital medical records. Microscopic examination for typing, grading, staging using TNM-7 system and Dukes' system were done.

Results: A total of 201 colorectal cancer patients were enrolled in our study, males slightly outnumbered females with sex ratio of 1.1:1, mean age was 50.2 (SD±16.9), age range of 12-92, age peak at 45-59 years, mode of 45 years. Rectum was the most commonly involved site

(63.7%), usual adenocarcinoma was the most common histologic type (77.6%). Sixty one (30%) patients presented with high grade cancer and 97 % presented with advanced stages. Mucinous adenocarcinoma and signet ring cell carcinoma were found to correlate with young age (below 40 years), $p=0.002$. HIV/AIDS was the most common comorbidity associated with CRC (38%).

Conclusion: Colorectal cancer is not rare in Tanzania; poor prognostic entities are relatively common at younger age associated with advanced stages at diagnosis. There is a need of initiating a screening program, through improved awareness and early diagnosis to give room to curative interventions of CRC.

Parallel Sessions 2C: Infectious Diseases

37. Human papillomavirus prevalence and type distribution in 3603 HIV-positive and HIV-Negative Women in the General Population of Tanzania: The PROTECT study

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The aim of the Prevention of Cervical Cancer in Tanzania (PROTECT) study is to assess the prevalence of oncogenic human papillomavirus (HPV) and to determine the type distribution among women in the general population according to human immunodeficiency virus (HIV) status, in preparation for a potential HPV immunization program. We included 3603 women from the general population in urban and rural areas of Tanzania. All women underwent a gynecological examination where a Pap smear was obtained and cervical cells were collected to assess the presence of high-risk (HR) HPV DNA by hybrid capture 2 test. Genotyping was performed by the LiPaExtra method. These women were also tested for HIV. The prevalence of HR HPV types was 20.1%, ranging from 14.8% in women with normal cytology to 94.2% in women with high grade squamous intraepithelial lesion (HSIL) or worse (100% in 5 cancers). In women with normal cytology or low-grade lesions, the most common type was HPV52 (3.2%), followed by HPV16 (2.1%). In contrast, HPV16 was the dominating type in HSIL or worse (32.8%). No cancers contained HPV52. The HR HPV prevalence was higher in HIV-positive women (46.7%) than in HIV-negative women (17.2%). No specific HR HPV types were significantly more common in HIV-positive women. The HPV type distribution is similar in HIV-positive and HIV-negative women. These results suggest that the HPV vaccines that are currently available could protect women from HPV infection independently of their HIV status.

38. Submicroscopic Plasmodium falciparum parasitemia following artemether-lumefantrine treatment and its associated factors in endemic rural Tanzania.

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Background: *Plasmodium falciparum* residual submicroscopic parasitemia is thought to be associated with parasite tolerance against artemisinins. This study assessed the prevalence of patients with residual submicroscopic parasitemia on day 3 and its associated factors after treatment with artemether-lumefantrine (AL) from 2006 to 2014 in Bagamoyo district, Tanzania.

Methods: Patients aged ≥ 6 months with acute uncomplicated *P. falciparum* malaria were treated with standard AL regimen alone or with a 0.25 mg/kg single-dose of primaquine (PQ) and followed-up for 28 days for clinical and laboratory assessment. Polymerase chain reaction was used to screen for residual submicroscopic parasitemia from dried blood spots collected on filter paper on day 3 after initiation of treatment. The primary outcome was the proportion of patients with residual submicroscopic parasitemia on day 3 between 2006 to 2014.

Results: Residual submicroscopic parasitemia was detected in 253/578 (43.8%) of the screened patients. The prevalence of residual parasitemia changed from 14/50 (28%) in 2006, to 129/172 (75%) (adjusted odds ratio [AOR]=6.8, 95% confidence interval [CI] 3.3-13.9, $p<0.001$) in 2007-8, 50/139 (36%) (AOR=3.2, 95%CI 1.3-7.5, $p=0.009$) in 2012-13 and 60/217 (27.6%) (AOR=0.4, 95%CI 0.7-3.0, $p=0.33$) in 2014. Pre-treatment parasitemia $\geq 100000/\mu\text{L}$ (AOR=2.5, 95%CI 1.5-4.2, $p<0.001$), haemoglobin (Hb) <10 g/dL (AOR=2.3, 95%CI 1.5-3.3, $p<0.001$) and the year of study 2007-8 (AOR=6.8, 95%CI 3.3-13.9, $p<0.001$) and 2012-13 (AOR=3.2, 95%CI 1.3-7.5, $p=0.009$) were associated with the presence of residual parasitemia. Residual parasitemia was not associated with recurrent infection (AOR=1.3, 95%CI 0.7-2.5, $p=0.43$).

Conclusion: Residual submicroscopic parasitemia on day 3 was common in patients treated with AL from 2006 to 2014, however, its presence was associated with pre-treatment characteristics.

39. Effects of twelve rounds Mass Drug Administration with Albendazole and Ivermectin on Lymphatic Filariasis transmission in Rufiji District, Tanzania

Clarer Jones

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Background: The Tanzania National Lymphatic Filariasis Elimination Programme using Ivermectin and Albendazole Mass Drug Administration (MDA) in Rufiji District started in 2000. It was envisaged that four to six rounds of MDA with at least 65% minimum effective coverage of the total population would interrupt lymphatic filariasis (LF) transmission. By 2015, twelve

round of MDA had been administered. This study aimed at examining the effect of MDA on LF disease burden and transmission in Rufiji District.

Methodology: A cross-section survey involving mosquito intervention to determine vector infection and infectivity rates with *W. bancrofti*; household intervention to assess MDA compliance and prevalence rates and school intervention to establish exposure rates in standard one pupils from five purposively selected villages was carried out in Rufiji District from April to May 2015.

Results: DNA extracted from 5,460 *Culex quinquefasciatus* caught using gravid traps were pool tested with Taqman qPCR. Out of 1,092 pools tested, 5(0.09%) were positive for *W. bancrofti*. The DNA from the heads of the positive pools tested negative suggesting highly unlikelihood of transmission from infected mosquitoes to human. Out of 854 participants screened using immunochromatographic card test (ICT), 9(1.1%) were positive. Microfilaraemia test using counting chamber test was performed to 9 positive participants, one (0.1%) was positive. The prevalence of hydrocele and elephantiasis were 1.6% and 2.9% respectively. Moreover, 82.7% of tested participants had swallowed the tablets in the LF-MDA, 70.5% swallowed in the round just before this study. The ICT results in school surveys was 0% suggesting lack of new transmission.

Conclusion: Twelve rounds of MDAs caused a significant decrease in LF prevalence in human and mosquito vectors. The programme should consider conducting Transmission Assessment Surveys to make a decision to stop MDA and plan for measure to prevent resurgence of transmission in the area.

40. Developing and internally validating a risk prediction model for pediatric severe malarial anemia in a Tanzanian region of perennial malaria transmission

Rugabela Kabyemela

Background: In regions where population-wide approaches to malaria control may be limited due to ecological patterns, resource availability, and/or parasitic resistance to antimalarial medications, it could be valuable to have a tool to identify individuals at elevated risk of severe malaria for targeted intervention.

Methods: In this pilot study, we used data collected in the MOMS Project birth cohort (n=880), which was based in a region of perennial malaria transmission in Muheza, Tanzania, (2002 to 2006) to develop and internally validate a prognostic model for severe malarial anemia in children under three. Candidate predictors included baseline demographic and clinical information (sex, beta-globin and alpha-thalassemia genotypes, birth weight, maternal age and gravidity, transmission season at delivery, placental malaria status, household bed net

possession, and IPTp administration during pregnancy) as well as cord blood measurements of cytokines and receptors (TNF, TNF-RI, TNF-RII, IL-1 γ , IL-4, IL-5, IL-6, IL-10, and IFN- γ).

Results: During a median follow-up of 2.2 (interquartile range, 1.2 to 3.0) years, 37 incident severe malarial anemia events were recorded. The strongest discriminations of severe malarial anemia risk were provided by transmission season at delivery (C-index, 95% CI: 0.63, 0.54 to 0.71) and household bed net possession (C-index, 95% CI: 0.61, 0.53 to 0.68) out of the clinical and demographic markers and by interleukin-1 γ out of the blood-based markers (C-index, 95% CI: 0.77, 0.70 to 0.84).

Conclusion: These data provide proof of concept that predictive models for severe malarial outcomes can be developed. Nevertheless, external validation of the models is warranted, and the feasibility of incorporating personalized medicine approaches into on-going antimalarial campaigns in developing countries remains uncertain

41. Epidemiological status of bancroftian filariasis in the endemic communities during the era of elimination in North Eastern Tanzania

Happyness J. Mshana

National Institute For Medical Research

Background: Tanzania started national-wide lymphatic filariasis elimination programme in 2000 in targeted areas for annual Mass Drug Administration (MDA). However, there is paucity of information on the epidemiological trend of the program and impact of the scale in endemic communities where implementation is on-going. The aim of this project is determine current epidemiological status of Bancroftian filariasis in the endemic communities in North Eastern Tanzania after eight rounds of MDA using combination of Ivermectin and Albendazole.

Methodology: The study was a cross-sectional, descriptive study involving 272 individuals (<18 years) from endemic communities in Tanga region where MDA is implemented since 2004. Patients' social-demographic, clinical and parasitological data collected including information on the aetiology and the behavioural patterns. The rapid test immuno-chromatographic card test (Binax NOW, Scarborough, Inc., USA) were used to detect circulating filarial antigen (CFA).

Results: A total of 472 individuals screened, female were 65.1% (n=307) while male participant were 34.9% (n=165). Participant enrolled as per inclusion criteria were 57.6% (n=272). The overall rate of circulating filarial antigens was 4.41% (12/272). Hydrocele and Elephantiasis rates were 73.16% (199/272) and 15.80% (61/272) respectively. Manifestation of both hydrocele and elephantiasis was 6.61%. Chronic infections (hydrocele & lymphoidema) increased with age.

Conclusion: Our findings have shown a considerable reduction in filarial infection. However, there is clear indicating of on-going transmission despite the 8 rounds of MDA using ivermectin

albendazole. It is unlikely that annual MDA can interrupt transmission to achieve elimination goal and therefore new treatment strategies are required.

Parallel Sessions 2D: ICT

42. Closing the Cancer Divide through Ubuntu: Information and Communication Technology powered models for global radiation oncology

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There is growing consensus that Information and Communication Technologies (ICTs) have tremendous potential to catalyze global health collaborations. Advanced ICTs can be employed to leverage the recent major upsurge in Global Health interest into greater space-time flexible collaborative action against cancer and for enhancing greater effectiveness of existing global health initiatives. The recent call for greater action in closing the cancer divide through collaborations, including that in the Red Journal, inspired the 2015 Global Health Catalyst cancer summit, which brought together a unique combination of global oncology leaders, Diaspora leaders, ICT and palliative care experts, industry, nonprofits, and policy makers. The summit provided a forum for networking, knowledge sharing and discussion of some of the emerging models for ICT-powered global health collaborations in radiation oncology care, research, and education, as well as avenues for complementary outreach, including engagement with the Diaspora. This article summarizes the discussions/recommendations from the summit and highlights the emerging ICT-powered models for Radiation oncology Global Health, avenues for greater outreach (Ubuntu) for greater impact and sustainability, as well as emerging areas for scale-up and increased action towards closing the cancer divide.

43. Evaluating the Role of Perceived Usefulness in User Adoption of Mobile Immunization-Notification System

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Mobile e-health has significantly improved immunization service delivery in some developing countries such as Bangladesh, Republic of South Sudan and Ghana. However, Uganda has only 50% of children who are fully immunized due to poor mobilization of mothers despite the potential benefits that can be obtained from mobile phone usage. The study sought to propose and evaluate a model for user adoption of mobile Immunization-Notification (IMUNOT) system

based on its perceived usefulness. This was meant to support the use of mobile technology for creating citizen awareness to ultimately improve immunization coverage in Uganda. The purpose of the study was achieved by extending Technology Acceptance Model that predicts user satisfaction with the system. Descriptive field survey design was employed for the study using the structured questionnaire as the main data collection instrument. The questionnaires were administered to the health workers and mothers from Gulu Referral and Gulu Independent hospitals in Northern Uganda using purposive sampling technique. Multiple analyses were done on the data collected using windows Statistical Package for Social Sciences (SPSS) to evaluate the proposed model. The findings showed e-Health knowledge, accessibility, support, content and trust as the antecedents of perceived usefulness with 87.8% of variance. The results also suggest the overarching importance of “perceived usefulness” and its antecedents. However, more independent and dependent variables may be explored to improve the analytical capability of the evaluated model in future. Perceptions may change due to the user experience and demand and therefore a dynamic model that predicts the user intention to adopt IMUNOT system may be recommended for future research.

44. Assessing Usefulness of HMIS in Strengthening Data Use: RTP Experiences

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Background: Tanzania health management information system (HMIS) has undergone evolution since 1985; it was reviewed in 2007 and launched in 2013 after deploying HMIS nationwide, transforming from paper-based to electronic at district level with enhanced information capture using registers at facility level. This initiative was brought about by technology advances in developing countries that strengthened data management and processing for decision-making with emphasis on achieving Big Result Now(BRN) initiatives.

Aim: In assessing the usefulness of HMIS in developing countries, Tanzania provides evidence on HMIS transitioning in improving data recording, utilization of evidence based decision making and measuring of service provider’s (SP) accountability

Methods: At facility/district levels, RTP uses national tools to assess quality of reported data and service provision that informs changes in report submission, quality and data availability. Using DHIS2 to review monthly reports provides a preview of the usefulness of technology to strengthen HMIS. When scarce, RTP supports HMIS tools printing and distribution. HMTs are provided with internet/phone airtime assisting in timely report submission, data verification and entry into DHIS2

Results: 58(100%) councils in the lake/western zones in Tanzania have adopted revised version of HMIS at facility/district level. High HMIS acceptance by HMTs was reinforced by stakeholder system strengthening. Between 2014-2015, DHIS2 data portrays improvement in facility reporting from 87.4% to 95.8% respectively. Health workers acknowledge the usefulness of HMIS in service delivery easing dropout identification minimizes double counting, improves

data storage and report generation. For HMTs it provides for monitoring, supervision and data management.

Conclusion: Increasing use of HMIS at facility/district levels is indicated by increasing facilities submitting timely reports. At facility level HMIS has reduced workload by easing client followup; at district level DHIS2 simplifies data management. Additionally Pay for Performance model in DHIS2 capacitates SPs to be accountable and monitor their performance.

45. Profile: The Dar Es Salaam Health and Demographic Surveillance System (Dar es Salaam Cohort Study DUCS)

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Background: The Dar Es Salaam health and demographic surveillance system (HDSS) was established in 2011 to describe the burden of non-communicable disease; its associated risk factors, trends and impact of interventions in a fast growing urban population of a low-income country. ? Aim: The main goal of this presentation is to introduce the research community to the Dar Es Salaam HDSS.

Methods: Baseline and 5 periodic update surveys have been conducted to enumerate and update vital events of all residents in a well-demarcated area of Ukonga and Gongo la Mboto wards in Dar es Salaam, Tanzania. Household information on demographic, socio-economic characteristics, food insecurity, and water supply and sanitation were collected using an adapted Demographic and Health Survey household tool and the household food insecurity access scale. Nested studies on hypertension and ageing in adults, sickle cell disease in children and economic dividend of fertility decline have been implemented. Requests for data sharing can be made to the principle investigator (Email: jkillewo@muhas.ac.tz)

Results: A total of 110, 882 individuals living in 21,000 households have been enrolled as of June 2015. The population is made up of 52.5% female, and 38% of the population is below 15 years of age. The mean household size is 6 (interquartile range: 4, 8) persons and a majority of

households reported some level of food insecurity (58%). Through June 2015, the overall crude birth rate was 47.7 per 1000 and the crude death rate was 4.8 per 1000. The total fertility rate is 1-2 children per woman. The population exhibits modest-heavy population mobility (57.1 per 1000 in migration rate and 98.6 per 1000 out migration rate).

Conclusion: The Dar es Salaam HDSS is an urban platform suitable for population-based studies on various environmental, social, economic, health systems exposures, and impacts of interventions on health in sub-Saharan Africa.

46. Establishment of Bioinformatics Community of Practice in Tanzania

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Background: Bioinformatics is one of the fast growing research area in both developed and developing countries. This is motivated by advancement in medical technologies and information and communication technology that are enabling biologists and researchers to collect a large amount of high throughput biological data. A typical example is genomic data. In order to make use of this data, specialized tools, skilled people and high performance computing facilities are required. In developed countries, well established research facilities, skilled manpower and financial resources are readily available. However, in developing countries, like Tanzania, there are a number of challenges. One of the challenges is the lack of research facilities and skilled people. Other challenges are lack of connectivity, training, well established research communities and other essential resources.

Aim: To establish the Bioinformatics Community of Practice (BCoP) that will be used as a platform for researchers to share tools, skills, knowledge, and research facilities.

Methodology: Through BCoP, potential stakeholders such as TERNET (Tanzania Educational and Research Network) will provide technical support, high performance computing and training. Other stakeholders such as MUHAS, Tanzania Genome Network (TGN), Dar es Salaam Institute of Technology (DIT), and other high learning institutions will jointly form a strong community that utilize available resources to harness the biological data and apply data mining tools to extract useful information that will be used in decision making and addressing other medical and agriculture related challenges. MUHAS (Muhimbili University of Health and Allied Sciences), for instance, is already involved in a number of projects including Genome Wide Association Studies (GWAS), thus the experience acquired can be shared with others. DIT has High Performance Computing facility, currently hosted by TERNET, and this facility could be freely be used by the BCoP community. This facility can be accessed through a Science Gateway, developed as a part of Sci-GaIA EU Project.

Conclusion: Potential stakeholders have been invited to join the community to learn, share your knowledge, tools, research findings, and effectively utilize available research facilities and resources. The BCoP will establish the following for the community: (1) Web portal for sharing

information and resources, (2) Discussion forum, (3) Journal Club and (4) Annual Conference/Workshop.

Parallel Sessions 2E: Oral Health

47. Platelets Levels before and after Surgical Intervention in Patients with Oral and Maxillofacial Tumors at MNH, Tanzania

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Background: The elevated platelet counts have been described for majority of cancers. There is inadequate information of effect of benign and malignant oral and maxillofacial tumors on the regulation of platelets.

Aim: The aim of this study was to investigate the changes in platelet counts among patients with oral and maxillofacial benign and malignant tumors following surgical interventions.

Methods: A descriptive postoperative study was done whereby patients with benign and malignant oral and maxillofacial tumors who met the inclusion criteria. The included patients were those who had no history of blood transfusion prior, during or after surgery, not on haemoglobin-boosting or bone marrow suppressing medications, not seropositive to human immunodeficiency virus also without clinical findings suggestive of lymphadenopathy, splenomegaly, ecchymosis and petechiae. Demographic data, Platelet counts and haemoglobin levels before and after surgery were documented and analysed by chi-square test and values were considered to be significant if $p < 0.05$.

Results: A total of 61 patients were included in the study. The mean age of participants was 37.03 ± 16.6 years with range of 7 to 77 years. Majority 82.5% ($n = 52$) had benign tumors with a leading diagnosis of ameloblastoma. In general there was an increase of platelet counts following surgery from the mean of 276.38 ± 109.40 K/uL to 308.51 ± 117.24 K/uL. Following surgery there was an increase of platelet counts for benign tumors (278.87 ± 106.37 to 305.96 ± 123.12) but a decrease for malignant tumors group (282.33 ± 147.03 to 232 ± 78.48).

Conclusion: The mean postoperative increase in platelet counts in benign and malignant tumors was due to healing process of the wound following surgery while the postoperative decrease in platelets counts in malignant tumors was due to effect of tumor removal which diminished the production of platelets activating factors.

48. Most commonly used behaviour management techniques and factors influencing their choice among Tanzanian dental practitioners

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Background: In pediatric dental practice, behavior management techniques are practices that are purposefully applied in the management of behavior to reduce fear and anxiety, enhance cooperation and affect treatment. Pediatric dentists have several behavior management techniques (BMT) at their disposal, and the use of these methods is influenced by many factors.

Aim: To determine the most commonly used behavior management techniques and factors that influence the choice of the techniques among Tanzanian dental practitioners.

Methods: A descriptive cross-sectional study involving 150 dental practitioners in mainland Tanzania. Structured questionnaires were sent out by either electronic mail or post. The questionnaire inquired on practitioners' demographic characteristics, commonly used Behavior Management Techniques (BMT), reasons for choice of a technique and self-rating of skills to apply BMT. Data analysis was done using SPSS computer program version 19. Frequency distributions were generated and cross tabulations done. Chi-square test was used to test for significant differences. P value was set at $p \leq 0.05$.

Results: 112 questionnaires were returned, a response rate of 74.7%. The three BMTs most commonly reported to be used are "Tell-Show-Do" (TSD) (98.2%), positive reinforcement (96.4%) and modeling (83.9%). TSD and positive reinforcement were commonly reported as the first choices, TSD and positive reinforcement as the second choices and modeling and positive reinforcement as the third choices. "Hand-over-mouth-exercise" was reported as a most rarely used BMT (21.4%). Acceptability by the child was the most influencing factor for the choice of TSD (91.8 %), positive reinforcement (92.6%), modeling (93.6%) and voice control (91.8%). Forty-four (68.8%) degree holders (DDS/BDS/Specialists) respondents reported that they were not using HOME, compared to 24 (50.0%) non degree holders (DT/ADO) ($p=0.04$).

Conclusion: "Tell-Show-Do" technique was reported by majority of the respondents and the main influencing factor was acceptability of the technique by the child patient.

49. Antenatal health providers' awareness of effects of periodontal diseases on pregnancy outcomes in South-East Malawi.

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Background: Periodontal diseases through toxins generated by periodontal bacteria and inflammatory mediators in the mother may contribute to adverse outcomes of pregnancy. There is scarce information on antenatal health providers' awareness of the effects of periodontal diseases on pregnancy outcomes in Africa and Malawi in particular where reports indicate high preterm birth rates (18.1%).

Objective: To assess the Malawi antenatal health providers' awareness of effects of periodontal diseases on pregnancy outcomes.

Methodology: A descriptive cross-sectional study using a structured self-administered questionnaire was used in a sample of 192 antenatal health providers that included registered nurses, community nurses, nurse midwife technicians and clinical officers from 4 hospitals in South East Zone, Malawi during the August to September 2015 period. Data was collected on socio-demographic details, knowledge on basic signs and symptoms of periodontal diseases, source of information on periodontal diseases and awareness of adverse effects of periodontal

diseases on pregnancy outcomes. SPSS version 20.0 was used for data entry and analysis. A 70% awareness score was taken as adequate awareness.

Results: Nurse Midwife technicians constituted the highest number (48.4%) of the participants. Majority (84.4%) of the antenatal health providers were not aware of the basic signs and symptoms of periodontal diseases. (62.5%) of the subjects were not aware of the adverse effects of periodontal diseases on pregnancy outcomes. Although oral health was covered (71.9%) in basic nursing training, only (38%) reported coverage of periodontal diseases in the training. Text books (27.6%) and dental professionals (26%) were reported as sources of knowledge on periodontal diseases ($p \leq 0.01$). 93% of the subjects expressed interest to acquire more knowledge on oral health and periodontal diseases through continuing education courses.

Conclusion: Antenatal health providers in Malawi need training on oral health and periodontal diseases in particular so as to make them aware of the relationship between periodontal diseases and pregnancy.

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50. Knowledge, Attitude and Practices of Primary School Teachers Towards Oral Health in Mzuzu City, Malawi

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Background: Since the behavior of children is shaped at school where they spend most of the time, teachers can be used as oral health educators. However, only a teacher with adequate oral health knowledge, attitude and practices can affect pupils' oral health practice.

Aim: To assess oral health knowledge, attitudes and practices of the primary school teachers in Mzuzu city, Malawi.

Methodology: This descriptive cross-sectional study was carried out on 382 primary school teachers using a structured questionnaire. Data analysis was done using SPSS version 16.0 computer program.

Results: Around 95% and 84% of teachers had right knowledge on the causes, symptoms and prevention of dental caries and periodontal disease respectively. About 90% of the participants reported to brush twice or three times a day and 60% of them change their toothbrush after 3 months. Although more than 90% of participants felt that dental check up is important, only 22% reported to go for dental checkup. Moreover, 55% of teachers felt that a dentist's duty is to do extraction and 47% disagreed that extraction is the only option for treatment of dental caries. Majority (80%) of the respondents acknowledged that oral health education is included in the school curriculum and 60% of teachers were involved in oral health education. However, only 30% of teachers reported to have attended in service training for oral health education while only 20% reported to receive supervision from a dentist during teaching. The popular source of oral health information reported was mass media.

Conclusion: Although most of the teachers had good knowledge on causes and prevention of dental caries and periodontal disease, they lacked knowledge on treatment options for dental caries and had poor oral health practices. This observation suggests that primary teachers need organized training to improve their oral health knowledge and practices.

51. Oral Health Status of Children with Malignancies at Muhimbili National Hospital

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Background: Maintaining optimal oral health among children with malignancies (CWM) is important for treatment outcome and quality of life. There is a need to assess their oral health status including oral health knowledge and practices among their caretakers.

Aim: To determine association of oral health status of CWM with oral health knowledge and practices by their caretakers.

Methods: This was cross-sectional descriptive study, in which questionnaires were used to collect information on oral health knowledge and practices from caretakers of CWM. Clinical examination of each child included assessment of dental caries, oral hygiene and oral mucosal lesions. Information concerning diagnosis and type of treatment was obtained from their medical records.

Results: There were 88 caretakers and 88 CWM. Of the caretakers 81.8% were female, 73.9% were mothers and 85.2% had formal education. Of caretakers, 66.7% had knowledge on causes of dental caries and 94% knew the clinical presentation of dental caries, likewise 67% of caretakers had adequate oral hygiene practices, and 69.3% of them perceived their child's oral health as good.

Of the 88 CWM, 63.6% were male with mean age of 6.5 ± 4.0 years, ranging from 6 months to 17 years. The simplified oral hygiene indices (SOHI) for poor, fair and good oral hygiene among the CWM were 29.4%, 36.5% and 34.1% respectively. The means for DMFT, DMFS, dmft and dmfs were; 0.07 ± 0.37 , 0.14 ± 0.71 , 0.8 ± 2 and 1.9 ± 6.59 respectively.

The most common diagnoses were leukemia (30.7%) followed by lymphoma (21.6%), and retinoblastoma (19.3%). Majority were under treatment (83%) with 48.9% receiving chemotherapy. Oral mucosal conditions were observed in 31.8%, with the most being ulcers (32.1%), followed by erythema (25%).

Conclusion: The CWM had low prevalence of dental caries and satisfactory oral hygiene; however the sum of fair and poor oral hygiene indices outweigh the good which is not ideal denoting that they would benefit from parental education, improvement of oral hygiene practices, and regular dental visits.

Friday, JUNE 24, 2016 (day 2)

Parallel Sessions 3A: NCD

52. Ultrasound findings and 72-hour outcomes of adult trauma patients who undergo FAST at Muhimbili National Hospital Emergency Department (MNH EMD), Tanzania

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Background: Trauma is one of the leading causes of death in the world. In patients with intra-abdominal injuries, proper and immediate diagnosis is needed in order to rule out life threatening injuries and facilitate early surgical intervention when needed. Focused Assessment with Sonography for Trauma (FAST) has become a common tool for rapid evaluation but it is still a new concept in Tanzania and hence there is limited data on outcomes of trauma patients in Limited Resource Settings found to have positive FAST.

Aim of the Study: To describe ultrasound findings and 72-hour outcomes of adult trauma patients who undergo FAST at Muhimbili National Hospital Emergency Department (MNH EMD)

Methods: This was a prospective cohort study of adult trauma patients presenting to MNH EMD who underwent ultrasound evaluation for trauma. The data was collected into a standardized form, entered into Excel spreadsheet and analyzed using SPSS v16.

Results: A convenience sample of 417 trauma patients was enrolled between April and September 2013. Thirty five patients (8.4%) had a positive FAST exam and 88% of them were taken to theatre directly from the EMD. The intra-abdominal injuries most commonly encountered were liver, bowel and abdominal vasculature injuries. In the 72-hour period, 47.3% of patients with negative FAST had been discharged compared to 8.6% of the positive FAST, and 20% of those with positive FAST had died compared to 3.2% of the negative FAST.

Conclusion: There is a prognostic value in using FAST examination, as 88% of trauma patients who had positive FAST were taken to operating theatre directly from the EMD. Furthermore, up to 20% of trauma patients who had positive FAST died within 72 hours, with or without surgical management. Further research is needed to determine factors affecting mortality of trauma patients with positive FAST even after surgical management.

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53. Referral Patterns of Patients arriving to Muhimbili National Hospital Emergency Medicine Department

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Background: Most patients seen at the Muhimbili National Hospital (MNH), Emergency Medicine Department (EMD) are referred from other health facilities. Referral patterns are unknown.

Objectives: To describe the current referral patterns to the EMD-MNH.

Methods: A data collection sheet was used for all patients arriving to the EMD during pre-selected time windows that represented, night, weekends, and weekdays. Demographic data, referral status, referring hospital, and referral reason were obtained.

Results: 600 patients were analyzed from 12/2015 to 01/2016. 450 (75%) were referred from healthcare facilities. 258 (43%) were female, 117 (19.5%) were children <5 years. 306 (51%) of referrals were from six hospitals: Amana (20%), Mwananyamala (14%), Temeke (9%),

Mkuranga hospital (4%), Tumbi hospital (2%) and Sinza Hospital (2%). All other hospitals (N=79) in the country represented less than 1% of referrals. About 372 (62%) of referred patients do not have a clearly documented reason for referral. When provided, the top reasons for referral were for CT scan, specialist review, supplies, and blood transfusion.

Conclusion: MNH receives most referrals from six hospitals close to Dar es Salaam than all the hospitals in the rest of the country combined. Many have no clear reasons for referral. A structured referral protocol is needed, and improvements of the six hospitals that refer most may decrease overcrowding at MNH, and increase the quality of care for all Tanzanians

54. Fractional Exhaled Nitric Oxide among Cement Factory Workers: A Cross Sectional Study

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Aims: The study explored any associations between total dust exposure and fractional exhaled nitric oxide (FENO) as a marker of airway eosinophilic inflammation among cement production workers in Tanzania. We also examined possible differences in FENO concentration between workers in different parts of the production line.

Methodology: We examined 127 cement workers and 28 controls from a mineral water factory. An electrochemistry-based NIOX MINO device was used to examine FENO concentration. Personal total dust was collected from the breathing zone of the study participants using 37 mm cellulose acetate filters placed in three-piece plastic cassettes. Interviews on workers' background information were conducted in the Swahili language.

Results: We found equal concentrations of FENO among exposed workers and controls (geometric mean: GM=16 ppb). The GM for total dust among the exposed workers and controls were 5.0 and 0.6 mg/m³, respectively. The FENO concentrations did not differ between the exposed workers with high (GM ≥ 5 mg/m³) and low (GM < 5 mg/m³) total dust exposure. There was no significant difference in FENO concentration between workers in the two main stages of the cement production process.

Conclusion: We did not find any difference in FENO concentration between dust-exposed cement workers and controls, and there were similar FENO concentrations among workers in the two main stages of cement production.

55. Barriers to Blood Transfusion in Anaemic Children Under 5yrs in The Emergency Department at Muhimbili National Hospital, Dar Es Salaam, Tanzania

Background: Anaemia is prevalent in Sub-Saharan Africa, especially in children under 5yrs. The World Health Organization (WHO) has guidelines for transfusion, however transfusion rates in Tanzania remain low.

Aim: To identify barriers to timely blood transfusion in anaemic children under 5yrs with WHO-defined transfusion indications in the Emergency Department (ED) at Muhimbili National Hospital (MNH).

Methods: Prospective observational cross-sectional study of all children under 5yrs with laboratory confirmed Haemoglobin (Hb) <11 g/dL over a 7-week period. Transfusion indications, receipt of blood, and barriers to transfusion were recorded.

Results: 240 anaemic children were identified. 43.8% (n=105) had severe anaemia (Hb <7 g/dL), 37.5% (n=90) had moderate anaemia (Hb 7-9.9 g/dL), and 18.8% (n= 45) had mild anaemia (Hb 10-10.9 g/dL). 42.1% (n= 101) had clear indications for transfusion. 29.7% (n=30) of those with indications received blood in the ED. Of the non-transfused, the physician did not clearly identify anaemia in 43.7% (n=31). In 11.3% (n=8) an indication was identified, but blood was not ordered. In 45.1% (n=32) blood was ordered, but was unavailable. No other reason for lack of transfusion was documented or observed.

Conclusion: The proportion of children with indications for transfusion that were transfused was low due to provider behaviour and lack of blood. Of concern is the missed group where physicians did not document anaemia, indications for transfusion, or laboratory results. Further studies should assess why providers don't treat anaemia and the effect of ED transfusion on patient outcomes. Quality improvement efforts should focus on provider education and availability of blood.

56. Role of Emergency Triage Vital Signs in Predicting Outcome of Traumatic Brain Injured Patients at MNH and MOI

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Background: Road traffic injuries (RTI) are emerging as a significant contributor to disability and mortality in Tanzanian. In Dar es Salaam traumatic brain injuries (TBI) accounts for nearly quarter of all injuries, and has been associated with high mortality within the RTI patients. The role of emergency triage vital signs and the Glasgow Coma Scale in predicting outcome of TBI patients is unknown.

Objectives: To evaluate which emergency triage vital signs are associated with mortality of traumatic brain injured patients in MNH and MOI

Methodology Prospective cohort study of TBI patients presenting to Muhimbili National Hospital, Dar es Salaam between March and May 2015 was conducted. A set of vital signs were

recorded at ED, then patients were followed up to evaluate their clinical progress upon admission. The multivariate analysis was done by using logistic regression to find how baseline ED vital signs can predict in-hospital mortality and ICU admission.

Results: A total of 175 TBI patients were enrolled in the study. Of these 25.1% patients needed ICU care, and overall 29 (16.6%) died, Mean GCS and SPO2 were statistically lower among those who died compared to survivors' ($p < 0.001$). Also the low mean GCS and SPO2 were significantly associated with ICU admission both at $p < 0.001$. $GCS < 9$ was significantly associated with mortality $OR = 32.8$ and ICU admission with $OR = 33$ ($p = 0.000$). The $SBP > 150\text{mmHg}$ was also significantly associated with ICU admission

Conclusion: The in-hospital mortality of traumatic brain injured patients is high in MNH and MOI. Majority of in-hospital deaths occurred within first five days of admission. High systolic blood pressure and low GCS are predictors of need for ICU admission. Low GCS is a good predictor of in-hospital mortality.

Parallel Session 3B: Reproductive Health

57. Rubella specific IgG and IgM antibody prevalence in infants before and after combined measles and rubella vaccination in Dar es Salaam

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Background: Rubella is primarily a childhood febrile illness characterised by skin rash. However, infection in women during early pregnancy may be associated with miscarriage, foetal death and congenital abnormalities. Beginning October 2014 Tanzania introduced rubella vaccination in combination with measles (MR) to given at 9 and 18 months of age. Rubella specific IgG and IgM antibody prevalence in infancy pre-vaccination and after vaccination in the country had not been determined.

Aim: To determine rubella specific IgG and IgM antibody prevalence before and four weeks after MR vaccination of nine months old infants in Dar es salaam.

Methods: A longitudinal cross sectional study was conducted between March and May 2015 in Ilala Municipality in Dar es Salaam among children aged nine months. Dried blood spots were collected pre-vaccination and four weeks following MR immunization. Specific rubella IgG and IgM were determined using SERION ELISA classic R. test kit. Results: Of 190 infants at baseline, 71.1% (135/190) had rubella specific IgG (95%CI 64.1- 77.4%) and 2.6% (5/190) had specific IgM(95%CI 0.86% - 6.03%). Of 150 infants studied 4 weeks after vaccination, 83% (124/150) had specific IgG. Of these 150, 68.7% (103/150) had specific IgG and 47 had no

specific IgG at baseline. Of the 47 infants with no rubella IgG at baseline, all attained IgG seroconversion; and 40 (85.1%) had protective IgG levels. Overall mean rubella IgG titres for the 150 infants at baseline were 11.7 IU/ml and increased to 92.1 IU/ml 4 weeks after vaccination.

Conclusion: A majority of infants at 9 months had rubella specific IgG antibodies and a few had IgM specific antibodies suggesting previous and recent infection, respectively. After MR vaccination, rubella IgG seroconversion rate was 100% where by 85% of the vaccinated infants attained protective IgG antibody levels supporting the need for the booster dose at 18 months

58. The Role of Health Insurance Scheme, Enhancing the Use of Family Planning Services in Tanzania.

Baraka Jitihada
Ifakara health

Background: In rural Tanzania, pregnant women and children often pay for reproductive health services despite the existing exemption policies. The Tanzanian National Health Insurance Fund (NHIF) with financial support from donors initiated a five year program to distribute free health insurance cards to poor pregnant women and their partners. The insurance cards empower them to overcome financial barriers in accessing family planning, maternal and child health services.

Aim: This study aims to explore the role of health insurance scheme enhancing the use of family planning services in Mbarali district.

Methodology: A total of 55 key informants were involved in the study. 15 in-depth interviews and 5 Focus Group Discussion. Respondents were purposively selected basing on their participation in the scheme.

Results: Results revealed that the health insurance has power on the financial situation of individual despite of existence of social cultural and health system factors abide. Having insurance card allowed community members to choose any family planning service provider of the choice within the district. With the expansion of the health insurance in the district has increased availability of family planning commodities and working instruments in all range of health care facilities. More over women reported that possessing health insurance has permitted them to get free family planning injectable and rescuing them from buying it from the drug shops and private hospitals. Women who come with their partners were reported to be as responsive compared by those who come by themselves.

Conclusion: The study identified several key lessons include; for family planning services to be promoted there is a need that the benefit package and criteria for targeting beneficiaries are well understood by community. Income earned through the health insurance scheme can be used to improve availability of contraceptives and quality of health care to satisfy clients' needs and ultimately improving health seeking behaviour of the target.

59. Management of Gestational Trophoblastic Diseases at Muhimbili National Hospital Dar Es Salaam Tanzania.

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Background; Gestational trophoblastic diseases is a spectrum of pregnancy related disorders of complete and partial mole, and malignant disorders of invasive mole, choriocarcinoma, placental site trophoblastic tumors and epitheloid trophoblastic tumors. They are among of the causes of morbidity and mortality to women of reproductive age.

Objective; the aim of this study was to audit on the management of GTD patients at MNH by comparing the actual practice with the presumed standards.

Methodology; Cross-sectional retrospective study on the management of GTD patients admitted at MNH for three years. Information was extracted from the patient's files, coded, entered and analyzed by SPSS computer software version 20.

Results; there were 114 GTD cases, 6616 gyn admissions and 24923 deliveries during study period. The magnitude of GTD is 1.72% and the incidence of 4.57/1000 deliveries. The main patient's complaints were vaginal bleeding (93.9%) and abdominal pain (50.9%). Molar pregnancy contributed (45.6%) of all cases and (54.4%) were GTN cases. Diagnosis mainly based on history, ultrasound and β -h CG levels. Suction evacuation was the common surgical treatment offered (89.9%) and hysterectomy (11.1%). Methotraxate was the drug given to the patients who received single agent and MAC combination to those received multiple agents. About 67.4% of the patients lost from the follow up. Comparing the actual practice with the presumed standards 73.7% were in sub standard, 14% had standard management and 12.3% had poor management. The outcome in 74.5% was unknown and case fatality rate was 9.65%.

Conclusion; There is a high incidence rate of GTD in this study. High number of cases lost from follow up resulted in high percentage of cases with unknown outcome. Management of majority cases was substandard and the fatality rate was high. Standards and protocol setting for GTD management at MNH is highly recommended.

60. Impact of Facility Delivery Load on the Practice of Active Management of Third Stage of Labor in Dar es Salaam

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Despite recommendations of AMTSL in combating PPH and the universal availability of oxytocic drugs, AMTSL correct use in Tanzania is low. Many factors affect the practice of AMTSL in Tanzania but little is known of what impact a facility workload can have on the practice of AMTSL among public health facilities.

Aim: Was to determine the impact of health facility delivery load on the practice of AMTSL in public health facilities in Dar es Salaam

Methodology: This was a prospective cohort study conducted in four public health facilities in Dar es Salaam. Criterion of categorizing the Health Facilities into high or low workload was delivery of 10 women per day. Two facilities with the highest and lowest delivery numbers represented High and Low workload. A checklist was used for data collection. Data was analysed using SPSS version 20. Bivariate and multivariate logistic regressions were done to determine factors associated with administration of oxytocin within one minute of delivery. P-value <0.05 was considered statistically significant. The study was ethically approved by MUHAS IRB.

Results: Delivery in low workload was associated with better chance of receiving oxytocin within recommended time ($p < 0.001$). Other factors associated with better practice of Oxytocin

delivery were a filled partograph ($p=0.006$) and level of education of the mothers ($p<0.001$). Proportion of controlled cord traction and uterine massage was higher in low workload health facilities at (83.5% versus 29.1%, $p<0.001$) and (37.2% versus 20.7%, $p<0.001$) respectively. Factors found to be independently associated with adherence to administration of oxytocin within recommended time were level of education and partograph. Participants delivering in low workload health facilities had a six times higher chance of getting oxytocin within recommended time ($OR=6.6$, 95% CI: 4.6-9.5). And participants with a partograph filled also had a two times higher chance of getting oxytocin within recommended time ($OR=2.2$, 95% CI: 1.2-4.0).

Conclusion: Delivery in low workload health facilities was associated with higher chances of administration of oxytocin within recommended time and receiving of other components of AMTSL appropriately.

61. Risk Factors Associated with Preterm Birth at Muhimbili National Hospital, Dar Es Salaam, Tanzania: Unmatched Hospital-Based Case-Control Study

Mujuni Rutasera Njunwa

Muhimbili University of Health and Allied Sciences

Background: Preterm birth, birth of a baby prior to 37 weeks gestation age, is one of the major public health burdens worldwide. It has far reaching consequences to the newborn with both short-term and long-term consequences. In order to combat this burden, reduction of preterm birth should be highly emphasized.

Aim: The aim of this study was to determine the risk factors associated with preterm birth at Muhimbili National Hospital, Dar es Salaam, Tanzania.

Methods: The study was unmatched hospital-based case-control study conducted between October and December 2015 involving 140 cases and 280 controls. Data collection was through face to face interviews using validated and adapted questionnaire. Data analysis was done using IBM SPSS version 20. Chi square and Odds ratio (OR) with 95% CI were used to assess the relationship between independent variables and dependent variables. P value < 0.05 was considered significant.

Results: Factors that were independently associated with preterm birth after controlling for confounders were antepartum hemorrhage (AOR = 5.8, 95% CI 2.9-11.3), pregnancy induced hypertension (AOR = 4.4, 95% CI 3.1-6.4), Eclampsia (AOR = 3.1, 95% CI 1.4-6.6), < 4 antenatal visits (AOR = 1.9, 95% CI 1.4-2.6), premature rupture of membranes (AOR = 7.9, 95% CI 4.9-12.9), history of preterm birth (AOR = 2.3, 95% CI 1.3-4.1) and history of stillbirth (AOR = 2.3, 95% CI 1.1-5.1). However, women who had singletons were less likely to have preterm birth (AOR = 0.5, 95% CI 0.3-0.8).

Conclusion: This study has highlighted the prevalence of prematurity and its associated risk factors in our setting. Identification of these risk factors will help to ameliorate pregnancy management especially high risk pregnancies in order to prevent preterm births hence reducing neonatal morbidity and mortality.

62. Social Behavioural Factors Affecting Home Deliveries among Pregnant Women in the Mkuranga District of Tanzania

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Background: For every 100,000 live births, 454 women die from pregnant related complications in Tanzania (TDHS, 2010). According to the National Road Map Strategic Plan to Accelerate Reduction of Maternal and Newborn deaths in Tanzania (2005), social-cultural beliefs and practices are among the major factors attributed to maternal mortality.

Aim: To review and examine social-behavioural factors affecting decision of home deliveries among pregnant women in the Mkuranga district.

Methods: An in-depth theory-based examination of home deliveries. Five key informant interviews were conducted with a traditional birth attendant, village health worker, clinician, and two women with past history of giving birth at home or health facilities (n=5), and six focus groups were conducted with women who had experienced delivery in the past two years prior to the study (n=47). All interview and focus groups were recorded and transcribed along with written notes. Two researchers agreed upon qualitative themes and codes were developed.

Results: Financial reasons and cost sharing; Poor treatment and bad attitude from the nurses; Tradition norms, culture and beliefs; Lack of transportation and distance; Poor transportation infrastructure; The influence of traditional birth attendants, and Poor knowledge on safe motherhood were identified as strong contributing factors to home deliveries

Conclusion: There is a need to review and correctly re-disseminate Tanzania's delivery cost exemption policy to the health providers and the community as whole; develop behavioural change advocacy and tailored strategies to address tradition norms, culture and beliefs which perpetuate unskilled home deliveries; bridging efforts and political will to addressing multisectoral challenges e.g. infrastructure improvement, and to strengthen the critical role of traditional birth attendants by appropriately incorporating them within a reorganized health care delivery system

63. Implementing CRAG screening in HIV patients initiating ART in rural HIV clinics with no CD4 testing services in Tanzania.

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Background: The World Health Organization recommends screening for the presence of Cryptococcal antigen in plasma (CRAG) for HIV-infected antiretroviral therapy (ART)-naïve patients with CD4 <100 cells/μL. However, only 20% of the primary HIV clinics in Tanzania offer regular CD4 testing.

Method: We implemented CRAG screening in all primary HIV clinics in the Kilombero district, southern Tanzania. Due to irregular availability of CD4 tests, point-of-care CRAG testing was recommended for all persons starting ART or for those with headache for >5 days. All CRAG+ patients were referred to the Saint Francis Referral Hospital in Ifakara to rule out meningitis and

initiate antifungal treatment. Patient transport costs and antifungals were provided. **Results:** During a pilot phase from November 2015 to February 2016, 60 ART-naïve patients with unknown CD4 counts were tested for CRAG in the peripheral HIV clinics. Of these, 10% (6/60) were CRAG+ and were referred for evaluation. Lumbar puncture was offered to all patients regardless of symptoms, and 4/6 were CSF CRAG+. All meningitis patients and only one of those with isolated cryptococcal antigenemia had reported CNS symptoms. Mortality at 1 month was 50% (1/2) among those with cryptococcal antigenemia and 50% (2/4) among those with meningitis. Screening is ongoing.

Conclusion: Our preliminary data shows that implementation of CRAG screening at a district level in the absence of CD4 counts detected a 10% CRAG prevalence. This prevalence is comparable to prevalence reported in other areas in sub-Saharan Africa in CD4<100. This pilot highlights the importance of extending CRAG screening to all HIV-infected persons enrolling in care before ART initiation in the absence of CD4 testing availability. Implementation of CRAG screening is feasible in peripheral rural HIV clinics and allows a rapid referral for meningitis workup in order to maximize early detection and improve survival in Tanzania.

64. Utilization of VCT among High Risk Populations: The Case of Bar Workers in Kinondoni District

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Background: Tanzania is among sub-Saharan countries severely affected by the HIV and AIDS epidemic, with an increased burden among high-risk populations, such as bar workers. Voluntary counseling and testing (VCT) is one of the effective approaches which have been implemented to slow down the spread of HIV infection and minimize its impact at the individual, family and society levels.

Aim: The main objective of the study was to examine utilization of VCT services and its influencing factors among bar workers in Kinondoni district, Dar es Salaam, Tanzania.

Methods: We used an interview schedule to gather information on VCT utilization from 443 bar workers in Kinondoni district, identified using a multi-stage sampling technique. Data were analyzed using the Statistical Package for Social Science (SPSS-version 15.0). A p-value of ≤ 0.05 was considered statistically significant.

Results: We interviewed 443 bar workers, of whom 378 (83.3%) were females. Most of the respondents (58.5%) were single and their mean age was 26.14 (5.173 \pm). Almost all bar workers (99.8%) had heard about VCT services, mostly from health facilities (30.2%) and radio and television (29.8%). Although knowledge on VCT and utilization of the services were high among the bar workers, 74.3% and 87.4% respectively; the services were irregularly utilized, contrary to what is recommended for members of such high-risk populations. Factors influencing utilization of VCT services in descending order of importance included involvement in anal sex, having secondary or higher education, being a female, having child/children, using condom and having higher knowledge on VCT services.

Conclusion and recommendations: Generally utilization of VCT services are high among bar workers in Kinondoni district. However, these services are not utilized as routinely as recommended for members of such high-risk groups. This call for strategies that will enhance effective utilization of VCT services among bar workers. It is therefore recommended to conduct

further studies based on a broader and more inclusive sample size as this study was conducted in an urban setting and in only one district. This will generate more information regarding utilization of VCT services among such high-risk groups, which will subsequently inform development of comprehensive interventions.

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65. Immune Reconstitution Inflammatory Syndrome Associated with Dermatophytoses in Two Hiv-1 Positive Patients in Rural Tanzania

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Background: Immune reconstitution inflammatory syndrome associated with dermatophytoses (tinea-IRIS) may cause considerable morbidity. Yet, it has been scarcely reported and is rarely considered in the differential diagnosis of HIV-associated cutaneous lesions in Africa. If identified, it responds well to antifungals and steroids. We present two photographically documented cases of suspected tinea-IRIS from a HIV clinic in rural Tanzania.

Case I: A 33 years old female newly diagnosed HIV patient with 4 CD4 cells/ μ L (0%), normal complete blood count (CBC), liver function test (LFT) and renal function test (RFT) was started on co-formulated tenofovir/emtricitabine/efavirenz (TDF/FTC/EFV) and prophylactic cotrimoxazole. Two weeks later she presented with exaggerated inflammatory hyperpigmented skin plaques with central desquamation, active borders, scratch lesions on the face, trunk and lower limbs. Tinea-IRIS was suspected, fluconazole (150 mg daily) and prednisolone (1mg/Kg/day tapered down after one week) were given with total resolution of symptoms in 8 weeks and her next CD4 counts had increased to 134 cells/ μ L (11%).

Case II: A 35 years old female was newly diagnosed with HIV. She had 1 CD4 cell/ μ L (0%), haemoglobin 9.8g/dl, normal RFT and LFT. She was treated prophylactic cotrimoxazole and TDF/FTC/EFV. Eight weeks later she presented with inflammatory skin plaques with elevated margins and central hyperpigmentation on the trunk, face and limbs in the frame of a good general recovery and increased CD4 counts (188 cells/ μ L, 6%). Tinea-IRIS was suspected and treated with griseofulvin 500mg daily and prednisolone 1 mg/Kg tapered down after one week, with total resolution of symptoms in 2 weeks.

Discussion: The two cases developed de-novo exaggeratedly inflammatory lesions compatible with tinea corporis and facies in temporal association with ART initiation and good immunological response. This is compatible with unmasking tinea-IRIS, and reminds African

clinicians about the importance of considering this entity in the differential diagnosis of patients with skin lesions developing after ART initiation.

66. Uptake of Option B+ Guidelines in a Rural Tanzanian with Integrated Health Services

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Background: Proper uptake of prevention of mother-to-child HIV transmission (PMTCT) services is fundamental for a HIV/AIDS free society. Interventions are required to keep the mothers under active care.

Aim: To describe the uptake of Option B+ guidelines in Saint Francis Referral Hospital (SFRH) during its first year of implementation with the intergration of the One-Stop Clinic of Ifakara (OSC) within the reproductive and child health clinic

Method: Retrospective study was done to describe the uptake of option B+ in SFRH.

Results: From 4/2014 to 3/2015 1579 women attended the antenatal clinic (ANC). Seven were known HIV-infected, 1456/1572 (92.6%) were tested for HIV, and 39 of them tested positive (HIV prevalence in the ANC = 3.1%, 46/1463). Ten additional pregnant women were diagnosed in the inpatient wards and VCT. These ten women and 35/39 (89.7%) from ANC were enrolled in the HIV services and all started antiretroviral treatment (ART) and 28/45 (62.2%) were retained in care after a median follow-up of 17.2 months (14.8-21.2). Additionally, seventy-nine women under follow-up became pregnant, 68/79 (86.1%) were already on ART. The remaining 11 were initiated on ART upon pregnancy report and 64/79 (81%) were under active follow-up after a median of 19.1 months (14.5-21.8) after pregnancy report. During the same period 135 HIV-exposed infants were enrolled, 83/135 (61.5%) from mothers diagnosed before pregnancy and 52/135 (38.5%) during pregnancy/delivery. The early MTCT at the end of the study period was 2.2% (3/135).

Conclusions: The integrated and comprehensive service delivery model of the OSC resulted in an optimal uptake of Option B+ and an early mother-to-child transmission rate below the threshold of elimination. This documents a feasible and scalable model for maternal and family HIV care in rural sub-Saharan Africa. Retention in care for newly HIV diagnosed women remains a challenge.

67. Screening for Phytochemicals and Antimicrobial Potency of Root Tuber Crude Extracts of *Pyrenacantha kaurabassana* Bail.

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Background: *Pyrenacantha kaurabassana* Bail, (Icacinaceae) is found in central and eastern Africa, growing up to 5 kg root tubers. New anti-HIV xanthenes, anthraquinone and methylbenzoisocoumarine moieties with activity against strains of *Staphylococcus aureus* and *Helicobacter pylori* have also been isolated. In Tanzania the plant is commonly found in Tanga and Dodoma regions, where it is ethnobotanically used as an abortifacient. However, no data regarding the full phytochemical profile and antimicrobial potency against more species of bacteria and fungi is available in the available open scientific literature.

Aim: The study aimed at determining the phytochemical profile of *P. kaurabassana*, as well as the antimicrobial potency of crude chloroform and methanolic extracts.

Methods: Sequential extraction was employed to obtain crude chloroform and then methanolic extracts from powdered root tuber of *P. kaurabassana*. Screening for phytochemicals was done using the available standard procedures for each. The microbes *E. coli*, *S. aureus*, *P. aeruginosa*, *K. pneumoniae*, *S. typhi* and *C. albicans* were conveniently selected for testing the Antimicrobial potency of the crude extracts. Microtiter broth dilution and agar plate diffusion methods were employed to determine the minimum inhibitory concentration and zones of inhibition respectively.

Results: Phytochemical screening showed the presence of alkaloids, glycosides and saponins in both extracts, whereas tannins, flavonoids, phenols, proteins and carbohydrates were present only in methanolic extract. Preliminary results from antimicrobial screening showed potency of chloroform and methanolic extracts against *S. aureus* and *E. coli*. Screening for other microbes is ongoing, the results of which will be presented during the conference.

Conclusion: The developed phytochemical profile of *P. kaurabassana* is of promising use in this plant, giving important scientific clues on the observed potencies. The preliminary potency against *S. aureus* and *E. coli* are promising towards the discovery and development of novel antimicrobials increasing treatment options and combating antimicrobial resistance.

68. Prevention of Mother to Child Transmission of HIV in Tanzania: How well are organizational guidelines and practices gender mainstreamed?

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Background

Gender mainstreaming has been long recognized to be an international strategy for addressing gender inequalities and associated negative health outcomes. However, its implementation has remained a challenge, even in the area of prevention of mother to child transmission of HIV (PMTCT). Despite recognition of gender in the Tanzania's political arena and prioritization of PMTCT by the health sector, there is very little information on how well National PMTCT guidelines and organizational processes & practices at service delivery level have been gender mainstreamed.

Methods

Following case study methodology, we reviewed PMTCT guidelines and pre-service curricular for clinical training of doctors and midwives, using WHO's Gender Responsive Assessment Scale (GRAS). The scale differentiates between level 1 (gender unequal), 2 (gender blind), 3 (gender sensitive), 4 (gender specific), and 5 (gender transformative). We also interviewed Heads of units providing PMTCT services in the select hospitals.

Results:

Gender responsiveness PMTCT policy/ strategy documents varies, whereby some are at GRAS level 3 (gender sensitive) and others are GRAS level 4 (gender specific). Those which are gender sensitive indicate gender awareness, but *no* remedial action is developed; while those which are gender specific go beyond indicating how gender may hinder PMTCT to highlighting remedial measures such as the promotion of couple counseling and testing for HIV. Nevertheless, none of the reviewed policy/ strategy documents could be graded as gender transformative. On the other hand, assessment of organizational processes and practices revealed little attention on holistic integration of gender in the delivery PMTCT services. The main attention is on the clinical domain of services. Social determinants – such as the threat of GBV, stigma and discrimination, and masculine norms that distance men from maternal and child care - are poorly attended to

69. Evaluation of a training program for health care workers to improve the quality of care for rape survivors: a quasi-experimental design study in Morogoro, Tanzania

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Background: Sexual violence against women and children in Tanzania and globally is human rights violation and a developmental challenge. Aim: The aim of this study was to assess the impact of training health professionals on rape management. The specific objectives were to evaluate the changes in knowledge and attitudes towards sexual violence among selected population of health professionals at primary facility level.

Methods: A quasi-experimental design using cross-sectional surveys was conducted to evaluate health care workers' knowledge, attitude and clinical practice towards sexual violence before and after the training program. The study involved Kilombero (intervention) and Ulanga (comparison) districts in Morogoro region. A total of 151 health professionals at baseline (2012) and 169 in the final assessment (2014) participated in the survey. Data were collected using the same structured questionnaire. The amount of change in key indicators from baseline to final assessment in the two areas was compared using the difference in difference method.

Results: Overall, there was improved knowledge in the intervention district from 55% at baseline to 86%; and a decreased knowledge from 58.5% to 36.2% in the comparison district with the net effect of 57.5% and a p-value <0.0001. The proportion of participants who exhibited accepting attitude towards violence declined from 15.3% to 11.2% in the intervention area but increased from 13.2% to 20.0% in the comparison area. However, the observed overall changes in the intervention and comparison areas were not statistically significantly with the net effect of -10.9; p-value=0.1845.

Conclusions: The training on the management of sexual violence is shown to be effective in improving healthcare workers' knowledge and practice but not attitude. Sustainability of such change requires commitment from those at strategic level within the health service to ensure that adequate resources are made available.

70. Gender Disparity in the Utilization of Modern Health Care Services Among South-Western Nigeria Rural Dwellers

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Background: Empirical studies have often found that use of health care services is related to the availability, quality and cost of services as well as to social, structural, ?income , health and personal belief characteristics of the users, (Ogedegbe , 2011; Pearce, 2002). In 1997 , Nigeria was ranked 187 out of 191 countries in term of ?health care delivery? in the world, (WHO, 2010). The focus of this study is to examine gender disparity in the utilization of modern health among the rural dwellers in Owo Local Government Area of Ondo State, Nigeria. AIMS To examine the Influence of income and gender on utilization of modern healthcare services in OwoTo explore possible challenges encountered by end users on modern healthcare facilities

Method:This is a survey type descriptive research. A total of 200 subjects (males-130; females-80) were sampled and selected through a purposive sampling technique. The research instrument was a questionnaire validated and administered to respondents. Data were analysed using Percentages and Chi-Square.

Results:Our result shows that females utilize health care facilities more than males. People with high income tend to utilize modern healthcare services more than those with low income. The study found inadequate facilities as the major challenge while the health care environment is convenient and affordable.

Conclusion:Income influences the utilization of modern health care services. Males and females differ in usage of health care facilities.

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71. Experience-based Views on Effective Biomedical Science Education (EBSE) to Health Professionals

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Background: A common philosophical belief is that a typical person remembers just about 10% of what they hear, 20% of what they see, 50% of what they read or write, but 90% of what they participate in doing. The beliefs suggest that active involvement or “doing” is far superior to piles of instructions, i.e., “being told.”

Aim: The goals of this presentation is two-fold: (1) provoke reflections on how we have taught and perhaps still teaching biomedical sciences to health professionals, and (2) advocate for active learning approach in biomedical sciences.

Methodology: The presentation is reflective personal experiences having taught biomedical sciences (physiology, pathophysiology, and pharmacology) to health professionals in Africa (Nigeria) and North America (Canada and USA) for over 35 years. The categories of students taught over the period in both continents include medical, nursing, pharmacy health professionals, and post-graduate students.

Results:I have found EBSE to be one that (i) engages the learner, and (ii) tailors the needs and experiences of learners into the scheme of learning; (iii) have clearly-defined goals, i.e., learning objectives; (iv) is centered on critical reasoning and problem-solving; (v) evaluates knowledge, and (vi) obtains feedback from peers and learners. EBSE, regardless of continent, requires commitment, dedication, and altruism for national pride.

Conclusion:EBSE is vital for sustainable development of a nation, and require deliberate governmental attitudes of investment. Instructors must reflectively view EBSE as a tool of national pride.

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72. Health Professional Education and Skills Development-eLearning

TATCOT-KCMC

Background: WHO (2006), estimated the shortage in the global health-care workforce to be approximately 4.3 million. Information and communication technology (ICT) offers promising new modes for the delivery of education called eLearning when used on its own, or blended learning when used in combination with traditional educational methods. eLearning and blended learning allow for the combination of hands-on, skills-based training as well as self-directed, knowledge-based learning. Both help reduce the costs associated with delivering educational content; facilitate the development and scalability of educational interventions; break down the geographical and temporal barriers that limit the access to, and availability of, education; improve access to relevant experts and novel curricula. eLearning help sharing scientific knowledge, such as e-publication, open access, digital literacy, and the use of social networks, Standardization and interoperability. Aim: Strengthens use of eLearning for education and training boost of the professional health workforce

Methods: Descriptive Retrospective/Prospective study Results: ICTs for eLearning initiatives study, 82% of the (n=125 Member States) participating in the survey reported using this teaching tool for the health sciences, while 91% acknowledged using distance learning to train health professionals. Evidence on eLearning-mLearning: In any activity that allows individuals to be more productive when consuming, interacting with or creating information, mediated through a compact digital portable device that the individual carries on a regular basis, has reliable connectivity, and fits in a pocket or purse. Total of 65 staff have been trained through eLearning with hands-on at TATCOT I since 2007. The no is still low due to multiple factors including inadequate financial support to join the eLearning course.

Conclusions: The process of institutionalizing and sustaining eLearning within an educational setting, and offers key strategies for organizational transformation and change. The successful institutionalization and sustaining of eLearning programmes is strongly dependent on the context of the organization.

Parallel Sessions 4A: Basic Science Research

73. Increased Activated Memory Phenotypes Of T And B Lymphocytes In Children With Sick Cell Anaemia

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Background: Children with Sickle Cell Anaemia (SCA) are at an increased risk of invasive bacterial infections, highlighting impairment in immune function. To date, little is known regarding adaptive immunity in SCA.

Aim: This study aimed to evaluate the phenotypes of T and B lymphocytes in children with SCA (HbSS) aged 1-6 years in comparison with normal (HbAA) controls.

Methods: We recruited 35 children (25 HbSS, 10 HbAA) from the Muhimbili Sickle Cell Cohort. Venous blood was used for evaluation of T and B lymphocytes via surface staining for CD3, CD4, CD8, CD27, CD45RA, CD38 and HLA-DR (T-cells) and CD19, CD27, CD21, IgD and IgM (B-cells) using Flow Cytometry. Data was analysed using Flow Jo and GraphPad Prism. Ethical approval for the study was obtained from the MUHAS-IRB.

Results: CD4⁺ T cells in children with SCA expressed higher levels of the activation marker HLA-DR (14.32% vs. 10.72%, $p=0.0383$). Children with SCA also had increased effector memory CD4⁺ T cells (9.81% vs. 6.79%, $p=0.0147$) and terminally differentiated CD4⁺ T cells (2.33% vs. 1.56%, $p=0.021$), concordant with a reduction of naïve CD4⁺ T cells (43.48% vs. 52.17%, $p=0.037$). Similarly, proportions of the effector memory CD8⁺ T cells (27.47% vs. 18.20%, $p=0.0275$) and central memory/transitional memory CD8⁺ T cells (33.88% vs. 26.88%, $p=0.0302$) were also increased with a reciprocal reduction of naïve CD8⁺ T cells (27.20% vs. 43.33%, $p=0.0068$). On the contrary, proportions of the naïve, class switched, atypical and IgM memory B cells were comparable in children with and without SCA. The IgM memory B cells in SCA were more activated (35.27% vs. 19.93%, $p=0.0104$).

Conclusions: T and B lymphocytes in children with SCA are skewed towards activated memory phenotypes. This state of increased immune activation may have implications in the ability of children with SCA to react to vaccines and fight infections.

74. Induction of Active TGF-beta by *Helicobacter pylori* and its influence in disease progression

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Background: *Helicobacter pylori* is a Gram negative bacterium that persists in the human gastric mucosa and predisposes infected individuals to peptic ulcer disease and gastric adenocarcinomas. The risk of disease outcome is increased with more virulent strains which have the cag pathogenicity island (cagPAI) and express the more active s1/i1/m1 form of vacuolating cytotoxin A (VacA). Persistence of *H. pylori* and disease also depends on the balance between the pro-inflammatory and anti-inflammatory cytokine. Transforming growth factor beta (TGFβ) is an important anti-inflammatory cytokine for regulating mucosal immunity. Measuring TGFβ is challenging as it is released from cells in an inactive form and only becomes functional when activated.

Aim: To investigate TGF β responses to *H. pylori* strains of differing virulence types in human gastric epithelial and immune cell lines and spleen cells from infected mice, and to compare methodologies for assaying total and active TGF β .

Methodology: Human cell lines were infected with two strains of *H. pylori* (60190: cagPAI+, vacA s1/i1/m1; Tx30a: cagPAI-, vacA s2/i2/m2). Spleen cells from mice infected with *H. pylori* strain SS1 (non-functional cagPAI, vacA s2/i2/m2) were cultured in vitro for 48 hours. Total TGF β in culture supernatants was measured by ELISA, functional TGF β was quantified by ELISA following acid activation and the results compared to those from a TGF β -responsive reporter cell bioassay.

Results: This study showed that TGF β was released in high concentrations by a gastric epithelial cell line in response to *H. pylori*, whereas monocytic and neutrophilic cell lines produced very low levels of this cytokine. The cagPAI+ *H. pylori* strain 60190 induced higher levels of TGF β compared to the less virulent TX30a strain. In mouse experiments we showed that active TGF β was released by spleen cells from infected mice. The bioassay was more sensitive than ELISA for measurement of active TGF β , but there was high inter-assay variation from replicate samples.

Conclusion: Further studies are needed to determine a reliable test to measure active TGF β . This must be achieved in order to study the impact of TGF β on *H. pylori* disease development.

75. HIV-1 Nef-mediated immune evasion activities toward HLA class II-restricted CD4+ T lymphocytes.

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Background and Aim: HLA class II (HLA-II)-restricted CD4+ T lymphocytes play an important role in controlling HIV-1 replication, especially in the acute/early infection stage. However, an HIV-1 accessory protein Nef circumvents this immune response by manipulating HLA-II antigen presentation pathway through downregulation of HLA-DR and upregulation of HLA-II-associated invariant chain (Ii) from the cell surface. However, these Nef activities during acute/early infection remain elusive.

Methods: Here, we isolated Nef clones from plasma viral RNA of 47 and 46 HIV-1-infected patients at acute/early and chronic phase of infection, respectively. The ability of these Nef clones to upregulate Ii, downregulate HLA-DR and downregulate HLA class I (HLA-I) from virus-infected cell surface were simultaneously analyzed by flow cytometry.

Results: HLA-I downregulation function was relatively conserved among acute/early Nef clones, whereas both HLA-DR downregulation and Ii upregulation functions displayed broad dynamic ranges. Nef's ability to downregulate HLA-DR and upregulate Ii correlated positively

at the acute/early infection stage, suggesting these activities are functionally linked in vivo. Furthermore, we observed an inverse correlation between Nef's ability to downregulate HLA-DR and plasma viral load of patients. Acute/early Nef clones also exhibited higher HLA-DR downregulation and lower Ii upregulation functions compared to chronic Nef clones.

Conclusion: Taken together, our study reveals enhanced Nef's ability to evade HLA-II-restricted immune responses during acute/early infection, highlighting importance of these Nef functions towards disease progression early after HIV-1 transmission.

76. IKK β acts as a tumor suppressor in cancer-associated fibroblasts during intestinal tumorigenesis

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Cancer-associated fibroblasts (CAFs) comprise one of the most important cell types in the tumor microenvironment. A proinflammatory NF- κ B gene signature in CAFs has been suggested to promote tumorigenesis in models of pancreatic and mammary skin cancer. Using an autochthonous model of colitis-associated cancer (CAC) and sporadic cancer, we now provide evidence for a tumor-suppressive function of IKK β /NF- κ B in CAFs. Fibroblast-restricted deletion of *Ikk β* stimulates intestinal epithelial cell proliferation, suppresses tumor cell death, enhances accumulation of CD4⁺ Foxp3⁺ regulatory T cells, and induces angiogenesis, ultimately promoting colonic tumor growth. In *Ikk β* -deficient fibroblasts, transcription of negative regulators of TGF β signaling, including *Smad7* and *Smurf1*, is impaired, causing up-regulation of a TGF β gene signature and elevated hepatocyte growth factor (HGF) secretion. Overexpression of *Smad7* in *Ikk β* -deficient fibroblasts prevents HGF secretion, and pharmacological inhibition of Met during the CAC model confirms that enhanced tumor promotion is dependent on HGF–Met signaling in mucosa of *Ikk β* -mutant animals. Collectively, these results highlight an unexpected tumor suppressive function of IKK β /NF- κ B in CAFs linked to HGF release and raise potential concerns about the use of IKK inhibitors in colorectal cancer patients.

77. Identification of two naturally-occurring Vpr sequence polymorphisms associated with clinical parameters in HIV-1 chronic infection

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Background: HIV-1 Vpr is a multifunctional accessory protein critical in HIV-1 replication. Previously a number of HLA class I-associated immune escape mutations have been described. However, it is yet known whether immune-driven Vpr polymorphisms are associated with disease outcome.

Aim: Hereby, we comprehensively analyzed Vpr sequence polymorphisms and their association with disease outcome and host HLA genotypes.

Methods: We utilized plasma viral RNA isolated from 444 chronically HIV-1 infected individuals who were HLA-typed and treatment-naïve. We determined association of Vpr amino acid residues with clinical parameters and host HLA-I genotypes.

Results: Our analysis revealed that Ala at position 55 was significantly associated with lower plasma viral load; and Thr at position 63 was significantly associated with lower plasma viral load and higher CD4 count. Also, the number of amino acid residues at the two positions, located in a functionally-important α -helical domain, correlated inversely with plasma viral load and positively with CD4 count. Moreover, phylogenetically corrected methods revealed residues at positions 55 and 63 are associated with patients' HLA genotypes.

Conclusion: Our results suggest that Vpr polymorphisms at functionally-important and immune-reactive sites may contribute, at least in part, to viral replication and disease outcome *in vivo*.

Parallel Sessions 4B: NCD

78. Physical activity and cardiovascular risk assessment in third trimester pregnant woman

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Background: Pregnant women face challenges in body weight regulation and metabolism. Most of these challenges are due to hormonal changes, however, inactivity and poor eating behaviour can significantly pose a risk of developing cardiovascular diseases. Therefore, maintaining light to moderate physical activity during uncomplicated pregnancy provides various benefits for the woman's health.

Aim: The aim of the study is to assess the level of physical activity in pregnant women in their third trimester in relation to cardiovascular disease risk factors.

Methodology: Physical activity was assessed using a standard physical activity assessment tool. Fifty pregnant women and 46 non-pregnant controls were interviewed and their level of body fat content (visceral and total body fat) and BMI was measured using an OMRON body fat analyser machine. In addition, their blood pressure was recorded from their antenatal cards.

Results: Our results showed that the level of physical activity decreases with pregnancy. 78% of the participants were either inactive or moderately inactive and only one participant was physically active. The level of physical activity did not affect body fat composition or distribution; however, the level of total body fat was found to be high in both controls and pregnant women. Individuals who were moderately active did have a lower BMI than inactive individuals although this finding was not significant. Furthermore, our results also showed that the level of physical activity had no correlation with the level of blood pressure values.

Conclusion: Our results indicate that pregnancy is associated with reduced physical activity, which might explain the slight increase in BMI. In addition, pregnancy is associated with raised total body fat but normal visceral fat (which has a higher correlation to CV disease). Therefore, moderate physical activity in pregnant women can help reduce the risk of an excessive increase in weight and hence reduce complications associated with being overweight.

79. Severe Anaemia in Sickle Cell Disease; Factors and Outcomes at Muhimbili National Hospital

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Background: Sickle Cell disease (SCD) is the commonest inherited disorder worldwide with the highest burden in the sub-Saharan Africa (>70%). The natural history of SCD is characterised by dormant periods (steady-state) interspersed by acute crises. The acute anaemic crises are often transient and may be precipitated by treatable predisposing factors such as infections and/or nutritional deficiencies. This study aims at determining factors associated with severe anaemia, (Hb < 5g/dl) in individuals with SCD and their clinical outcomes. The information obtained will impact on clinical course, quality of life and survival of SCD individuals in Tanzania.

Methods: This will be a hospital based descriptive cross-sectional study among SCD patients admitted at Muhimbili National Hospital (MNH). The study population will be individuals with SCD who are hospitalized at MNH for health services. A minimum sample size of 369 will be required.

Data analysis will be performed using Stata software. Descriptive statistics will be used to summarize data; chi-square or Fisher's exact test will be used to ascertain association between categorical variables and t-test for numerical variables. Regression models will be run and presented as adjusted odds ratio with their 95% confidence intervals. A p-value of < 5% will be used for statistical significance.

Preliminary results (n=200): Overall prevalence of severe anaemia is 19.8%, of these, 20.6% are below the age of 18 (p=0.64) and 25% are males (p=0.13). The majority (61%) have

normocytic anaemia Prevalence of Malaria (4.8%), HIV (3.5%) and bacteraemia (5.6%) and death (0.02%), all with no statistical significance. History of current pain crisis ($p=0.021$) and past blood transfusion ($p=0.003$) are associated with severe anaemia.

Conclusion: The prevalence of severe anaemia in SCD is significant, however these results are not conclusive as the study is ongoing. Full results will be presented at the conference.

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80. Silent Epidemic in Tanzania: Hypertension and Factors Influencing Health Promotion, Prevention and Treatment at Primary Care Level: A Systematic Review

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Background: Hypertension is the most common risk factor for preventable stroke and cardiovascular disease morbidity and mortality. The prevalence of hypertension is rapidly increasing in Tanzania in both men and women which urgently need to be addressed.

Aim: The study was conducted to identify client and health system challenges at primary care level which contribute to poor health outcomes and low utilisation of health services.

Methods: A systematic review was conducted to assess hypertension and factors influencing health promotion, prevention and treatment at primary care level. Information used on this study includes experience from Tanzania, Africa and relevant global information on non-communicable diseases and hypertension.

Inclusion criteria for abstract selection were publication in English language between 2000 and 2014. Abstracts were reviewed to identify relevant studies by subsequent review of the full-text article.

Andersen's behavioural model (1990) was adapted to provide guidance in analysing the challenges from client and health system.

Results: Client and health system related factors were shown to interact influencing health promotion, prevention and treatment of hypertension. The lack of hypertension policy and standard guidelines for managing hypertension was observed to be linked to poor implementation of strategies outlined in the national health policy. Critical shortage of human resources for health and ineffective health management system was observed resulting in poor quality of data, poor quality of health promotion and preventive health services and increased uncontrolled hypertension. Low level of awareness about hypertension and risk factors in the community was related to poor adherence to treatment. Low coverage of health insurance facilitated poor access to health services. The interaction of these factors significantly influences negatively the utilisation and health outcomes of hypertension.

Conclusion: Policy formulation and implementation is important in addressing and reducing the burden of hypertension at population level. Community involvement so as to increase level of

awareness on hypertension in the community contributes to increase in utilisation of health services and improve health outcomes in hypertension and its related complications.

81. Environmental Intervention to Promote Active Living in Urban Tanzania: Surveys to Engage the Public in Creating a Conducive Environment.

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Background: Physical inactivity is among the leading causes of ill-health globally. A growing body of evidence has linked inactive transportation (motorized) to the increasing prevalence of obesity and cardiovascular diseases (CVDs). Indeed active transportation (walking and bicycling) protects against weight gain, and generally reduce mortality rate. Additionally, sports and other leisure time physical activities, have also been shown to protect against obesity and subsequent cardiovascular diseases. For that reason promoting active transportation and leisure time physical activity by creating conducive infrastructure and environment might lower CVD-risk, at the same time reduce environmental pollution related to motorized transport.

Aim: We aim to promote active commuting and leisure time physical activity by seeking guidance from and engagement with the public, policy makers, and urban planners in creating appropriate urban infrastructure for sustainable environmental, social economic and public health benefits.

Methodology: Visual preference surveys will be conducted in Dar es Salaam using special questionnaires to obtain information on individual preferences, and barriers to cycling by rating images of different cycling infrastructure/environment based on individual opinions. In addition the questionnaire will capture other information related to other components of the built environment including availability and use of open space, parks, green space and sidewalks for leisure time activities.

Conclusion: Evaluating individual's infrastructure preferences, is important to identify preferred infrastructure that will encourage people to cycle, walk and engage in leisure time activities. This information will be used to inform policy makers and city planners, in order to plan for most preferable infrastructure that support active living.

82. The Impact of Reduced Dust Exposure on Respiratory Health among Cement Workers: an Ecological Study

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Aim: To compare total dust exposure, prevalence of chronic respiratory symptoms, lung function and COPD among Tanzanian cement workers before (2002) and after (2010–11) establishment of dust control measures.

Methods: Personal total dust exposure measurements, questionnaire assessment for chronic respiratory symptoms, and spirometry were conducted in both examination periods.

Results: Total dust exposure was lower in 2010–11 compared to 2002. The prevalence of most chronic respiratory symptoms and COPD was lower in 2010 than 2002. Forced expiratory volume in 1 second (FEV₁), percentage predicted FEV₁, and percentage predicted forced vital capacity were higher among cement workers in 2010 than 2002.

Conclusions: There was reduced total dust exposure level, lower prevalence of chronic respiratory symptoms and COPD, and higher lung function among cement workers in 2010 than 2002.

Parallel Sessions 4C: Traditional Medicine

83. Ethnomedical Survey and Toxicity Evaluation of selected Medicinal Plants from Southern Highlands of Tanzania

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Background: Utilization of medicinal plants by individuals lies on the knowledge accumulated through the interaction of people with the environment and the diffusion of information, tradition-ally transmitted orally through subsequent generations. Aim: This study documented ethnopharmacological information of medicinal plants deployed in communities living in the southern highlands of Tanzania with more emphasis on plants used for managing fungal infections.

Methods: Ethnobotanical survey was conducted in Makete and Mufindi districts using semi-structured questionnaires followed by two focused group discussions to verify information collected from these respondents. Data collected included the common/local names of the plants, parts used, the diseases treated and methods of preparation and application wherever possible. Cytotoxicity studies were conducted on plants collected using Brine Shrimp Lethality Test.

Results: During this survey about 48 plant species belonging to several families of angiosperms were reported to be traditionally useful in managing a number of health related conditions. Among these, few species like *Terminalia sericea*, *Aloe* species, *Zanthoxylum* species and

Kigelia africana were frequently reported by respondents. The preparation of these herbals was mostly by boiling (decoction) plant part(s) and the leaves were predominantly used in treatment followed by roots. Cytotoxicity study revealed that most of the plants tested were non-toxic with LC-50- >100 which implies that most compounds of these plants are safe for therapeutic use. The most cytotoxic extract was the dichloromethane extract of *Diospyros usambarensis* which had moderate toxicity with LC-50- value 30.027 µg/ml while few tested extract had mild toxicity with many being non-toxic.

Conclusion: From this ethnobotanical information it has been observed that traditional healers are full and rich of knowledge to build on for scientific studies. Some of the identified species from these regions are potential for further biological assays. Additionally, a thorough literature review has also confirmed that these plants have pharmacological activity. Further work to validate their therapeutic claims is ongoing.

84. Anti-cancer activity of selected medicinal plants from Western Kenya

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Background: The current study was undertaken to validate the traditional use of *Moringa oleifera* and *Rauwolfia caffra* used by some communities in Western Kenya to manage tumors and related ailments. **Aim:** To determine the safety profile of the extracts to authenticate their continuous use.

Materials and methods: This was achieved by determination of anti-proliferative activities of the active antioxidant extracts (Methanol and 50% methanol in dichloromethane) of *M. oleifera* leaves and *R. caffra* stem bark using crystal violet assay. Human liver (hepatocellular carcinoma, Hep-G2) and muscles (rhabdomyosarcoma, RD) were used as model cell lines and cytotoxicity was assessed using Vero cell lines.

Results: The methanolic extracts of the leaves of *M. oleifera* displayed significant antiproliferative activity ($P < 0.05$) against Hep-G2 and RD cell lines with limited activity on normal Vero cells. Comparatively, RD cell lines were more sensitive than Hep-G2. The extract of the stem bark (50% MeOH/CH₂Cl₂) of *R. caffra* did not show significant activity against proliferation of RD and Hep-G2 cells, however, it exhibited high activity against the proliferation of Vero cells.

Conclusion: From this study, *M. oleifera* was found to be less toxic and to possess anticancer activity while *R. caffra* displayed modest anticancer activity and high toxicity levels against normal Vero cells. The efficacy and safety profiles as observed in this study provide a validated evidence of anticancer activity of the two plants that should be investigated further for rational therapeutic designs.

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85. HPTLC Densitometric Screening for the presence of sildenafil in Octopus soup sold in Dar Es Salaam, Tanzania.

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Background: An increase in adulteration of natural medicines and food supplements has been reported worldwide. Adulteration threatens consumers a health due to possible adverse events since the blinded user may be contraindicated or on concomitant use of other synthetic medicines. Possible fortification of widely used octopus soup with Sildenafil has not yet been studied, despite having societal reputation to boost and maintain male erection. Aim The study aimed at developing and validating a simple screening method for Sildenafil in Octopus soup, as well as using the method to screen for the presence of Sildenafil in octopus soup sold in different parts of Dar es Salaam.

Methods: An in-house HPTLC method for analysis of Sildenafil in tablets was adopted and modified to enable sensitive and selective detection of Sildenafil spiked in octopus soup prepared in the laboratory. The method was validated as per ICH guidelines. Samples were collected from different vendors selected conveniently from different parts of Dar es Salaam. Screening for the presence of Sildenafil was done.

Results: An HPTLC densitometric method for analysis of Sildenafil in octopus Soup has been developed, it can detect as low as 0.005mg/ml of Sildenafil in octopus soup with good selectivity. Preliminary results for the screening indicate the presence of Sildenafil in samples from some vendors, however comprehensive results well be presented in the conference.

Conclusion: The developed method is simple, high throughput and reproducible, it can be used for quick detection of Sildenafil adulteration even in resource limited settings. The preliminary screening results suggest that the public should be cautioned on reliance of octopus soup for libido boosting.

86. Investigation of Chemical Composition and Mosquito Repellent Property of Essential Oils from Plants Traditionally Used as Mosquito Repellents in Longido District, Tanzania

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Background: The systematic application of synthetic insecticide is a common and widely accepted approach to the control of mosquito population; however, conventional insecticides are facing a challenge of resistance to various mosquito species and toxicity on non-target organisms. Thus, there has been exploration of various methods including use of repellent agents from repellent plants. Chemical composition and repellency potential of essential oils from *Tagetes minuta* and *Lippia javanica* traditionally used in Longido district to repel mosquitoes when formulated and topically applied as repellents were investigated in this study

Objective: The aim of this research was to investigate repellency properties and identify chemical compounds of essential oils from plants that are traditionally used in Longido district to repel mosquitoes.

Materials and methods: Ethno-botanical survey was done among the Maasai community of Longido district to identify plants that are used in the control of malaria transmitting mosquito

vectors. Essential oils extracted from identified plants were analyzed for their chemical composition using GC-FID and Mosquito repellency bioassay was done by topical application using human bait.

Results and discussion: *Tagetes minuta* L., and *Lippia javanica* (Burm. F.) Spreng, been used for mosquito repellency by Maasai people of Longindo District. The GC-FID analysis of essential oil from *T. minuta* showed presence of limonene (14.31%), camphene (1.95%), and verbenone (5.63%) whereas *L. javanica* essential oils indicated presence of limonene (5.38%), camphene (25.04%), DL-menthol (1.79%) and verbenone (1.41%) as main constituents. A topical formulation of 40% *T. minuta* essential oil in cow butter showed 80.9% protection against mosquito bites for up to 3 hrs 15 min whereas the unformulated oil exhibited only 52% protection for 1 hrs 52 min. Likewise, a formulation of 40% *L. javanica* essential oil in cow butter had 74% protection for up to 2 hrs 50 min, as compared to the unformulated oil that gave 47% protection by 1 hrs 15 min.

Conclusion and recommendation: Topical application of cow-butter-essential oil formulation is more effective in repelling mosquitoes than unformulated essential oils hence can provide alternative prevention measures of expelling mosquitoes during evening time before bedtime.

87. Seasonal Impacts on Chemical Composition and Antifungal Activity of Medicinal Plants *Turraea holstii* and *Clausena anisata*

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Background: Curative dependence of traditionally used medicinal plants on season of harvest is an alleged claim by traditional health practitioners. Previous studies have shown variation of curative activity with parts of plant used and type of extracting solvent Aim This study intended to verify claims of curative dependence of traditionally used medicinal plants on season of harvest by investigating antifungal activity and chemical composition of traditionally used medicinal plants *Turraea holstii* and *Clausena anisata* harvested in rainy season and dry season. Methods The antifungal activities were determined by brooth micro-dilution method where as chemical profiling of the extracts from the plant materials was done by gas chromatography (GC).

Results: Results indicated that extracts of plant materials harvested in dry season showed enhanced antifungal activity as compared to extracts of plant materials harvested in rainy season, highest potency being 0.39mg/mL, observed on CH₂Cl₂ fractions of both *T. holstii* and *C. anisata*. GC chromatograms showed overalls increase in number and amount of chemical species for extracts of plant materials harvested in dry season as compared to extracts from rainy season.

Conclusion The chemical composition and antifungal activity of *Turraea holstii* and *Clausena anisata* varies with seasons Keywords Antifungal activity, chemical composition, medicinal plants, seasonal dependence

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Parallel Sessions 4D: Infectious Diseases

88. Mapping of *Mycobacterium tuberculosis* complex genetic diversity profiles in Tanzania and other African countries

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The aim of this study was to assess and characterize *Mycobacterium tuberculosis* complex (MTBC) genotypic diversity in Tanzania, as well as in neighbouring East and other several African countries. We used spoligotyping to identify a total of 293 *M. tuberculosis* clinical isolates (one isolate per patient) collected in the Bunda, Dar es Salaam, Ngorongoro and Serengeti areas in Tanzania. The results were compared with results in the SITVIT2 international database of the Pasteur Institute of Guadeloupe. Genotyping and phylogeographical analyses highlighted the predominance of the CAS, T, EAI, and LAM MTBC lineages in Tanzania. The three most frequent Spoligotype International Types (SITs) were: SIT21/CAS1-Kili (n=76; 25.94%), SIT59/LAM11-ZWE (n=22; 7.51%), and SIT126/EAI5 tentatively reclassified as EAI3-TZA (n=18; 6.14%). Furthermore, three SITs were newly created in this study (SIT4056/EAI5 n=2, SIT4057/T1 n=1, and SIT4058/EAI5 n=1). We noted that the East-African-Indian (EAI) lineage was more predominant in Bunda, the Manu lineage was more common among strains isolated in Ngorongoro, and the Central-Asian (CAS) lineage was more predominant in Dar es Salaam (p-value<0.0001). No statistically significant differences were noted when comparing HIV status of patients vs. major lineages (p-value=0.103). However, when grouping lineages as Principal Genetic Groups (PGG), we noticed that PGG2/3 group

(Haarlem, LAM, S, T, and X) was more associated with HIV-positive patients as compared to PGG1 group (Beijing, CAS, EAI, and Manu) (p-value=0.03). This study provided mapping of MTBC genetic diversity in Tanzania (containing information on isolates from different cities) and neighbouring East African and other several African countries highlighting differences as regards to MTBC genotypic distribution between Tanzania and other African countries. This work also allowed underlining of spoligotyping patterns tentatively grouped within the newly designated EAI3-TZA lineage (remarkable by absence of spacers 2 and 3, and represented by SIT126) which seems to be specific to Tanzania. However, further genotyping information would be needed to confirm this specificity.

89. Exclusion from the initiation of DOTS under RNTCP West Bengal, India Kumar Chakrabartty

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Background: Revised National Tuberculosis Control Program (RNTCP) is being implemented since 1990s. But outcome is not satisfactory in many states including West Bengal in India. Our objective is to profile people coming at microscopy centre for sputum examination early and late. It tries to identify factors adversely influencing early sputum examination and causes of exclusion from initiation of Directly Observed Treatment Short Course (DOTS) therapy.

Methods: Study has been conducted on 577 persons with cough for minimum two weeks from 36 microscopy centres widely spread over three subdivisions in West Bengal. Important variables explored are sputum positivity level, a proxy indicator of delay in seeking services and initiation of DOTS. Apart that, information on poverty level, religion, caste, mode of journey to facility was also captured.

Results: Patients those are coming late in the microscopy centre are expected to be high positive and those coming earlier are low positive. For both sex, late diagnosis (88.24% and 81.58%) are much more than early diagnosis (11.76% and 18.42%). Across all religions, late diagnosis is much higher than early diagnosis (Hindu 83.05%, Muslim 88.89% and others 100.0% for late diagnosis). Variables significantly influencing initial default of DOTS are age, sex, caste, religion, education, employment, access to facility and service providers. Upper caste and above poverty line people are more complaint to DOTS.

Conclusion: Present study recommends developing an overall community mobilization strategy so that TB suspects reach facilities for early diagnosis and start DOTS. Stigma reduction strategy may be developed so that community does not hesitate to access the existing microscopy health care services.

90. Health Considerations on Suitability of Domestic Wastewater for Irrigating Crops, Mafisa, Waste Stabilization Ponds, Morogoro

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Background: In 2013, the Morogoro sewage treatment system (MORUWASA) was not meeting minimum WHO standards in terms of helminth release. The need to improve performance led to an experimental intervention incorporating a constructed wetland (CW) and a fish pond (FP) into the treatment system.

Aim: It was hypothesized that the standard wastewater treatment regime of 6 waste stabilisation ponds (WSP) was less effective in decreasing helminth load than an alternative consisting of 2 stabilisation ponds (i.e. anaerobic and facultative ponds) a CW and FP.

Methods: As part of a study on the effect of waste water on crop productivity, water, soil, and vegetable samples were tested for helminth larvae and eggs in a time series design over one growing season. Since effluent was entering the study site from a textile factory, soil and vegetables were also tested for: cadmium, chromium, copper, lead, and zinc.

Results: Helminths were not reliably removed by passing through the WSP treatment system. They were all removed, after the water was treated by the CW-FP. Levels of cadmium, chromium, copper, lead, and zinc in factory effluent, soil, and vegetables were far above allowable limits.

Conclusion: These preliminary results suggest that the health hazards reaching farmers, their families, and consumers of vegetables at Mafisa are not just from helminths. The health hazards are also coming from a textile factory effluent, overflowing into farmers' fields. While the coupling of the WSP, CW and FP can eliminate the helminths, the textile industry effluent remains a major challenge to the users of wastewater for crop irrigation.

Because this waste is so toxic it should be inexpensively pre-treated before being sent to the official WSP. The factory should be impressed to install a wastewater treatment plant as the effluent is polluting the environment and exposing the farmers, and their families and customers to the toxic heavy metals

91. Comparative efficacies of bed-nets against *Anopheles arabiensis* in the field condition and semi field system

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Background: The standard phase II of WHOPES testing and evaluation process of Long Lasting insecticidal Nets (LLIN) requires the net to be tested in the field with wild mosquitoes. However, fully field experiments are being challenged by the change in the number and composition of mosquitoes. Thus, the need arises to evaluate these tools in the semi field system.

Aim: To compare the efficacy of MAGNet and Veeralin LLIN against *Anopheles arabiensis* mosquitoes in the field and semi-field system.

Methods: A fully randomized Latin square design was used to evaluate the efficacy of MAGnet and Veeralin LN against *Anopheles arabiensis* mosquitoes. To determine feeding inhibition, induced exophily and 24hrs mortality, the experiments were conducted in the full field condition and semi field system. Data were analyzed by linear mixed effects regressions with an appropriate distribution (poisson or binary) and paired measurements were evaluated with Bland Altman methods.

Results: In the semi-field system mosquitoes exiting were relatively lower than recorded in the field experiments at 50% among controls, 60% for MAGNet LN and 46% for Veeralin LN. The unwashed MAGNet® LN and Veeralin LN caused higher mosquitoes mortality in the semi field (87% and 97% respectively) than in the field. The Bland Altman plot for comparison of the field and semi-field bioassays for feeding success and mortality showed that data are evenly distributed around the mean.

Conclusions: The field and semi field system methods showed similar trend thus can be used interchangeably.

92. Tuberculosis Incidence and All-Cause Mortality among HIV-Infected Patients on Isoniazid Preventive Therapy in Dar es Salaam, Tanzania

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Background: The year 2015 ended with global achievement of the millennium development goal number 6c (MDG 6c) of halting and reversing TB from the 1990s values. Treating latent tuberculosis infection in patients infected with human immunodeficiency virus is one of the means for goal sustainability.

Aim: We determined rates of TB incidence and all-cause mortality among 1283 HIV-infected patients who received IPT for 6 months and among 1281 HIV-infected controls who did not receive IPT.

Methods: A prospective cohort study was conducted in Dar-es-Salaam, Tanzania between February 2012 and March 2014 in concurrence with a National pilot study to assess the feasibility of a countywide IPT provision. Controls were patients from facilities which were not part of the National pilot. The Tanzania National Tuberculosis (TB) and Leprosy Program clinical screening tool was used to exclude active TB before enrollment into the study. Multivariate Cox proportional hazards were used for analysis and results are presented as adjusted relative hazard (aHR) and 95% confidence intervals (CI).

Results: TB incidence was 91 cases/100,000 person-years (PY) (95% CI 11-328) in patients who received IPT and 511 cases/100,000 PY (95% CI 255-915) in control group. There was 79% reduction in TB risk among patients receiving IPT (aHR=0.21, 95% CI 0.25-1.77, p=0.15) after adjusting for use and duration of antiretroviral (ARV) and current CD4 T cell counts. All-cause mortality rate was 136 deaths/100,000 PY (95% CI 28-398) and 1115 deaths/100,000 PY (95%

CI 715-1659) in IPT and the control groups, respectively. There was an 83% reduction in the risk of death among patients receiving IPT (aHR=0.17, 95% CI 0.04-0.74, p=0.02) after adjusting for use and duration of ARV and current CD4 T cell counts.

Conclusion. IPT does not significantly reduce the risk of TB but that of all-cause mortality in patients already on ARV medication.

Parallel Sessions 5A: Pharmaceutical Care and Practise

93. Application of Nanotechnology for Enhancing Solubility of Lumefantrine: Evaluation of Polymeric Loaded Nanoparticles and In vitro Properties

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Background: Lumefantrine has been a drug of choice for co-administration with an artemisinin derivative known as artemether. Lumefantrine and artemether have shown promising results in the treatment of malaria but have been faced with limitations such as poor bioavailability, short half life and resistance. Bio-availability is the fraction of an administered dose of drug that reaches the systemic circulation. When a drug is administered intravenously, the bioavailability is 100 %, however this is not the case when administered orally as is the case with the antimalarials in this study. In the oral route of administration, the drug must first be absorbed in the intestine, and as the drug passes through the liver and intestine, metabolism occurs mainly by the cytochrome P450 (CYP) family of enzymes, (first-pass metabolism) and further excretion may take place thus reducing its bioavailability.

Problem statement: The available Lumefantrine on the market is highly hydrophobic and hence has poor, erratic absorption with bioavailability of about 57%; and also lacks specificity to the affected red blood cells. This limited absorption and poor bioavailability lead to reduced efficacy whereas lack of specificity can be associated to the unwanted drug effects.

Objective: The primary objective of this study, was to enhance the oral therapeutic effectiveness of lumefantrine, singly and in combination with artemether by entrapping them in Nano-Medicine Drug Delivery Systems (NMDDS).

Methodology: The nano-particles were developed by polymer therapeutics in which and Polymeric approach with Polylactic Glycolic Acid (PLGA) 50:50. The resulted nanoparticles were examined for drug loading, encapsulation efficiency, drug release and in-vitro assays.

Results: The drug loading of 9.35%, 90% encapsulation efficiency, In-vitro drug release of 65% was achieved. The nano-formulated Lumefantrine was found to be more effective in clearance of chloroquine resistant strain (W2) than chloroquine and more effective than non-nanoformulated Lumefantrine in clearance of chloroquine sensitive strain (D6) in in-vitro anti-malarial activity testing.

Conclusion: There is a promising chance that nano-formulated Lumefantrine formulation with improved bioavailability and specificity would result through the two proposed approaches basing on the obtained findings.

94. Assessment of Adherence to Storage Conditions of DAKTACORT Cream among Community Pharmacies in Dar es Salaam, Tanzania

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Background: Pharmaceuticals storage is an essential component of pharmaceutical quality assurance. WHO recommends that pharmaceuticals should all the time be stored under the recommended conditions as started by the manufactures to prevent contamination and deterioration.

Good storage practices ensure the desired efficacy, safety and acceptance of pharmaceuticals to the end users. DAKTACORT cream is widely used for management of topical fungal infections associated with inflammatory features. The drug is to be kept under refrigeration (2-8°C) over the entire shelf-life as per manufacturer's instructions. The likelihood of this product to be kept under the room temperature is high due to being likened by any other cream by the pharmacy practitioners.

Aim: This study aimed at determining the proportion of pharmacies in Dar es Salaam which do not adhere to the proper storage conditions of DAKTACORT cream. Moreover it purposed to assess the level knowledge of community pharmacies practitioners with regard to proper medicines storage practices.

Methods: A descriptive cross sectional study was conducted among 378 community pharmacies in Dar es Salaam to determine the conditions under which DAKTACORT Cream was being stored using a simulated client. Thereafter a questionnaire was used to determine the level of knowledge on storage practices among practitioners in the premises which were found to be non adherent.

Results: Among the surveyed outlets, DAKTACORT cream was found to be in stock in 231 outlets. It was found that 174 (75.3%) outlets did store the cream in shelves under the room temperature despite the product being labeled for storage under refrigeration. Analysis for the knowledge assessment is ongoing and the results will be presented during the conference.

Conclusion: The study shows a stakeholder's awareness to storage condition requirement is still not adequate to quarantine quality. The study recommends that authority to raise awareness through public education.

95. Comparative in vitro dissolution studies of selected generic essential medicines in Tanzania

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Background: The use of generic drugs is steadily increasing internationally as a result of economic pressure on drug budgets. Generic drugs provide the opportunity for major savings in healthcare expenditure since they are usually substantially lower in price than the innovator brands. However, physicians, pharmaceutical personnel and community in general are

apprehensive regarding the quality of generic drugs. There is concerns about their equivalency and if they can interchange between one generic and the other without affecting therapeutic outcome.

Aim: The objective of this study is to evaluate the biopharmaceutical equivalency of different brands of selected essential medicines by using comparative dissolution technique.

Method: Dissolution testing from different dissolution media of various pH (1.2, 4.5, and 6.8) were used by employing dissolution testing apparatus II. Samples were withdrawn at specified time intervals and analyzed for the released drug content by UV/VIS spectrophotometer. Drug released at each time interval were calculated and data obtained were used for comparison.

Results: Preliminary results for Ciprofloxacin HCL, The dissolution profiles showed no significant inter brand and intra brand variability. Dissolution results of all generics and the innovator brands were further analyzed with difference factor (f1), similarity factor (f2). The findings indicated that all generic Ciprofloxacin HCL tablets were bioequivalent with the chosen innovator brand and may therefore, be used interchangeably.

Conclusion: Our results indicated that all generic Ciprofloxacin HCL tablets in this study have good bioavailability. They can be considered bioequivalent with the chosen innovator brand. However, in vivo test may be required for final comments regarding their bioavailability.

96. Assessment of Cold Chain Medicines Conformity with Who Requirements in Public Health Facilities in Tanzania

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Background: In order to ensure the safety and efficacy of the cold chain medicines, various global regulatory requirements have to be met during transport, storage, packaging and handling of environmentally sensitive products like biologicals, vaccines and some medicines. Tanzania faces a lot of challenges including limited transport infrastructure, lack of reliable electricity, lack of trained personnel and finally lack of proper equipments to store the cold chain products. This study focuses on the extent to which storage conditions in public health facilities comply with regulations for storage and handling of temperature sensitive medicines. **Aim:** To assess cold chain medicines conformity with WHO requirements in public health facilities in Tanzania **Methods:** A descriptive survey was conducted to assess storage conditions of cold chain medicines in Dar es Salaam and Dodoma regions. 84 public dispensaries were involved in the study, whereby temperature in the fridge storing cold chain medicines was collected every 15 minutes for a period of 30 days using temperature loggers, while structured questionnaires were used to assess knowledge of the healthcare providers on storage, handling of temperature sensitive medicines and enforcement by regulatory authority.

Results of the study: Preliminarily, 12 dispensaries were visited in which all vaccine fridges used Gas except one solar vaccine fridge and had temperature monitors and thermal alarms. Fridges in laboratory and labor ward used electricity and had neither power backup nor thermal

regulators. All health care providers who handle cold chain medicines were aware of drug separation but implementation was a challenge due to few resources available. Only 50% of vaccine fridges lied within the range, while all fridges at labor ward were out of range. Data collection is ongoing

Conclusion: Future studies should concentrate on quality control test to establish the extent to which the identified challenges affect medicines quality

97. Development and optimization of oro-dispersible paediatric paracetamol tablets by response surface methodology

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Background: Paracetamol is a drug which is orally administered for management of pain and fever. Paracetamol liquid dosage forms for paediatrics (syrups and elixirs) dominate the local market despite containing solvents like alcohol and propylene glycol which are not recommended for children. Also, they require large space for storage, high transportation cost, their stability cannot be ensured and are difficult to take accurate measurements. In some cases people have opted to cut conventional paracetamol tablets into pieces and administer to children. Oro-dispersible paracetamol tablets are better dosage forms than the liquid preparations. They can be swallowed without using water. They are stable and have improved dissolution and they are a choice for people who have difficult in swallowing and those who refuse to swallow like paediatrics. Aim: The aim of this study was to develop, optimize and evaluate the optimized formulation.

Methods: Trial formulations containing 80mg and 120mg per tablet of Paracetamol were prepared by use of direct compressible excipients (Starch 1500 and Avicel PH 102). Also, trial batches of the formulation containing 120mg Paracetamol were prepared by wet granulation method.

Results: Preliminary results indicated that Starch 1500 and Avicel PH 102 did not improve the flow of paracetamol powder to enable direct compression while maintaining the content of paracetamol at the minimum of 15%w/w of tablet. It was possible to prepare, by wet granulation, trial batches of Oro-dispersible paediatric paracetamol tablets 120mg which had acceptable evaluation parameters.

Conclusion: It is possible to prepare Oro-dispersible paediatric paracetamol tablets by wet granulation method. However, studies for direct compression method still under way using direct compressible excipients with high dilution potential example Spray Dried Lactose. Corresponding Author: mngbundala@yahoo.co.uk, 0753174626

98. Abortion incidence and unintended pregnancies in Tanzania

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Background: Unsafe abortions cause 13% of maternal deaths worldwide and millions suffer nonfatal health consequences. Where abortion is illegal or highly restricted, statistics are often not available, making it difficult to ascertain the magnitude of abortion and abortion-related morbidity. In Tanzania, maternal mortality is estimated at 410 per 100,000 live births, and unsafe abortion accounts for around 10% of these deaths. Abortion is legally restricted in Tanzania, permitted only when the continuation of a pregnancy would endanger a woman's life. This pushes women to seek clandestine abortions that are often unsafe and undisclosed. This constitutes the first-ever national study of the incidence of abortion and health consequences of unsafe abortion conducted late in 2013 in Tanzania.

Aim: The aim of this study was to establish National and Zonal magnitude of abortion, its complications and treatment.

Methodology: We used Abortion Incidence Complications Methodology (AICM). This Methodology has been used in over 25 countries since early 1990's and is has been used by WHO to estimate worldwide estimates of abortion incidence. AICM is an indirect methodology whose source involves original data from Health Facility Survey and Health Professional Survey. Additional sources included recent National data from TDHS and National Census. A total of 448 National representative sample of cPAC facilities were surveyed and 202 professionals were interviewed in Tanzania Mainland and Zanzibar. Ethical clearance was obtained from NIMR, Zanzibar Medical Research Council, Guttmacher's and MUHAS IRB.

Results: In 2013, there were 2,745,637 pregnancies in Tanzania of which 40% were unintended. The annual abortion rate was 36 per 1000 women aged 15-49, equivalent to 405,000 abortions. There was wide variation of abortion rates with Zanzibar the least (11 per 1000 women) and Lake zone the highest (51 per 1000 women). 40% abortions were complicated serious enough to require medical treatment but only 40% of them received care in Health facilities. There was inequity in receiving cPAC with better treatment coverage in urban than rural and non-poor than poor women.

Conclusion: Abortion incidence is high in Tanzania but worse in the Lake, Southern highlands and Western Zones. Treatment services were inaccessible by most women with abortion complications with the poor rural women most vulnerable. We recommend strengthening the availability and quality cPAC and Family planning services especially in lower level Health Facilities

99. A single centre, prospective, observational Hydroxyurea Registry for Sick Cell Anemia,

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Background: Hydroxyurea (HU) is the only medication approved for treatment of Sickle cell Anemia (SCA). Treatment with HU has been shown to reduce mortality and morbidity including painful episodes, hospitalization frequency, blood transfusion requirements, and other SCA-related complications. Tanzania has high SCA morbidity and mortality, and is aiming to reduce the burden of SCA through provision of HU. There is limited knowledge of the indications, clinical response and outcome and adherence issues on HU in SCA in Tanzania. We are proposing to create a registry for provision and monitoring of individuals with SCA who are using HU.

Aim: The objective of the SCA HU registry is to characterize the epidemiology, clinical characteristics and outcome of HU use among individuals with SCA at Muhimbili National Hospital (MNH) in Dar es salaam, Tanzania.

Methods: Prospective observational approach will be used. Individuals who have clinical indications to start HU treatment will be enrolled from the wards and outpatient department at MNH. Case review forms will be used to document information. Prior to initiation of HU treatment, a patient will be reviewed to review appropriate clinical and laboratory criteria for HU initiation. Laboratory investigations to be done include urine for pregnancy test, urinalysis, blood count and liver/renal function tests. Those eligible will be initiated with HU, using minimum effective dose regime of XX per kg/mg. Monthly follow up visits will be scheduled for 6 months, and then subsequently every 3 months. During the follow up visits, the pill count will evaluate adherence and clinical and laboratory parameters will be determine outcome.

Results: All case review forms and data will be stored to ensure patient confidentiality. Analysis will be done using STATA and R-software. Results will be shared with MNH staff, patients and other relevant stakeholders.

Conclusion: Developing the SCA HU registry at MNH will be a corner stone for development of treatment strategies and assesseing effect of HU for SCA in Tanzania.

100. Diosgenin, a novel aldose reduse inhibitor, attenuate the galactosemic cataract on rat *lixia ji, Caina Li*

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Background: Sugar cataract is major secondary complication of diabetes, and there are no effective drugs in clinic. Aldose reduse (AR), the key enzyme of polyol pathway, can be strongly stimulated by hyperglycemia and provoke the onset of diabetic cataract.

Aim: we aim to screen the effective AR inhibitor, investigate its protection against the lens epithelial cells (LECs) osmotic expansion in vitro and formation of galactosemic cataract in vivo.

Methods: We firstly optimized the AR inhibitor high-through screening method, then screened plenty of chemical compounds and natural extracts. Rabbit LECs was primary cultured and induced to osmotic expansion by using galactose, then observed the effect of Diosgenin on cell morphology and AR expression in vitro. Sugar cataract was induced by drinking gradient galactose solution (12.5%-10%) on 21-day rats, Diosgenin was administered via different routes, cataract progression was monitored by slit lamp microscope every 3 days. The biochemistry parameters such as AR activity, GSH and protein level were measured in the entire lens, at last the AR mRNA and protein levels were detected.

Results: Diosgenin can obviously inhibit rat lens AR activity ($IC_{50}=4.59\times 10^{-6}M$); Diosgenin(4 μ M) can evidently restrain the vacuoles in LECs plasm induced by galactose at 30 mM and decrease the AR mRNA and protein level; Diosgenin can significantly delay the procession of rat galactosemic cataract formation if the water contains in addition 0.1% Diosgenin.

Conclusion: This study indicates that Diosgenin is a novel strong AR inhibitor and consequential decrease in LECs osmotic expansion induced by galactose in vitro; and the findings also demonstrate 0.1% Diosgenin solution can significantly delayed the onset and maturation of rat galactosemic cataract in vivo. Polyol pathway is the common mechanism of most diabetic complications, Diogenin is a potential candidate to other complications.

101. Factors Associated with Adverse Outcomes Among Patients Admitted with Upper Gastrointestinal Bleeding

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Background: Upper gastrointestinal bleeding (UGIB) is a common gastrointestinal emergency, which is potentially fatal. Proper management of UGIB requires risk-stratification of patients which can guide the type and aggressiveness of management.

Aim: The aim of this was study was identifying the causes of UGIB and factors that affect the occurrence of adverse outcomes (mortality, rebleeding and readmission due to UGIB).

Methodology: A prospective cohort study was conducted among adults admitted with UGIB. Demographic data, laboratory parameters and endoscopic findings were recorded. Patients were then followed up for 60 days to identify the occurrence of adverse outcomes.

Results: From a total 170 patients with UGIB recruited, males accounted for the majority (71.2%). Median age of the study population was 40.0 years. The most common cause of UGIB was oesophageal varices (57%), followed by peptic ulcer disease (18%). Mortality occurred in 57 patients (33.5%) and was significantly higher in patients with high WBC count (HR 2.45, p 0.011), raised serum ALT (HR 4.22, p 0.016), raised serum total bilirubin (HR 5.79, p 0.008) and lack of an endoscopic procedure done (HR 4.40, p <0.001). Rebleeding was reported in 12 patients (7.1%) and readmission due to UGIB in 4 patients (2.4%)

Conclusion: UGIB occurs more commonly in males and in middle age. Oesophageal varices was the most common cause of UGIB. One-third of patients died, signifying a high burden. Rebleeding and readmission rates were low. A high WBC count, raised serum ALT, raised serum total bilirubin and a lack of endoscopy were independent predictors of mortality.

102. 23 Gauge pars plana vitrectomy for the removal of retained intraocular foreign bodies

kemal YÜKSEL

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Background: To evaluate the morpho-functional outcomes and safety of transconjunctival 23-gauge pars plana vitrectomy (PPV) for removal of intraocular foreign bodies (IOFBs).

Methods: A retrospective study of 36 consecutive cases (mean age; $34,2 \pm 10,9$ years (between 15 and 60), 27 M, 9 F) of 23-G PPV for the removal of IOFBs during the period of April 2009 and December 2011 and followed $9,4 \pm 6,4$ (2–27) months were conducted. Visual outcomes, slit lamp biomicroscopy, intraocular pressure (IOP), and posterior segment visualization by indirect ophthalmoscopy, A-B mode ultrasonography, and computed orbital tomography were performed for all cases. Main outcomes including anatomic and visual outcomes, and both intraoperative and postoperative complications were recorded.

Results: Of the 36 cases available for the study, the IOFBs (size range, 3 to 12 mm) could be removed in all eyes. Mean preoperative LogMAR BCVA was 1.44 ± 138 (range, 1.00 to 0.00) and mean postoperative LogMAR BCVA at final visit was $0,78 \pm 0,98$ (range, 1.00 to 0.00). ($P = 0,007$) Anatomic success was obtained in 97.2 % of eyes. 16 patients needed primary wound repair due to the leakage in insertion sites before the PPV, however remaining 20 cases were not. Fibrin reaction was seen in 8 (22.2 %) patients in early postoperative period, intraocular pressure elevation was detected in 12 (33.3 %) patients in whom the silicone oil was used as an intravitreal tamponade, one patient with silicone oil tamponade developed band keratopathy and phthisis bulbi.

Conclusions: 23-Gauge PPV is a feasible, effective approach in the surgical management of the patients with posterior segment intraocular foreign bodies.

Keywords: Pars plana vitrectomy, intraocular foreign body, Posterior segment surgery, Penetrating ocular trauma

Parallel Sessions 5C: Basic Science Research

103. Analysis of Heavy Metals in TUMBO and PUMU Herbal Medicines Prepared at Institute of Traditional Medicine, MUHAS, Dar es Salaam.

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Background: Herbal medicines deserve marked attention because of their prime influence the health outcome of their users. Heavy metals consumption by human being is associated with kidneys, lungs and nervous system damage and carcinogenesis among others. Herbal products are prone to contamination by heavy metals during medicinal plants cultivation, collection and formulation processes. TUMBO and PUMU mixtures are among the herbal preparations being produced by the Institute of Traditional Medicines at MUHAS. They are currently on the increase of their use by the general population for peptic ulcers and asthma respectively.

However, the products have not been tested for their heavy metal content towards ensuring safety to the users.

Aim: This study aimed at conducting the quantitative and qualitative determination of selected heavy metals metallic elements in herbal medicines using atomic absorption spectrophotometry (AAS).

Methods: Appropriate volumes of the products' samples were filtered and analysed in duplicates using an atomic absorption spectrophotometer each selected batch. Determinations were obtained for five selected heavy metals: Mercury, Arsenic, Lead, Cadmium and Copper as per the Tanzania Food and Drugs Authority (TFDA) requirements. The detection limits provided by WHO and TFDA were used as an acceptance criteria

Results: A total of 16 samples were analyzed, being a total of 4 samples in 2 batches of each product. Using pre-developed calibration curves, the amount of heavy metals in each sample was determined. Copper, Cadmium and Lead were found to be present but within the WHO and TFDA prescribed safety limits, where as no detection was made for Mercury and Arsenic in all the analysed samples.

Conclusion: The quantity of Mercury, Arsenic, Lead, Cadmium and Copper present in TUMBO and PUMU herbal mixtures are within the allowable limits as per WHO and TFDA requirements.

104. Assessment of Health Related Effects and Screening for Chemical Composition of Selected Local Brews available in Rombo District, Tanzania.

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Kamuhabwa*

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Background: Preparation of local brews in majority of Tanzanian societies goes a long way back in history using available food products such as maize, banana and the like. Recently Rombo has been in spot light increase number of unauthorized local brews prepared; the actual composition of which remains to be variable and to a great extent unknown. Moreover, adverse social and health related outcomes have been aired in several platforms

Aim: Identifying the possible risks associated with the intake of illicit local beverages and determining their heavy metal as well as volatile matter profiles.

Methods: Eight (8) key informants were interviewed on health related effects, raw materials and socio-economic impacts brought about by production and consumption of illicit local beverages in their localities in Rombo district. A total of eight samples of illicit local beverages were collected in epicentres in Mkuu and Mashati areas and subjected to heavy metal analysis and volatile matter composition using Atomic Absorption Spectrometry (AAS) and Gas Chromatography-Mass Spectrometry (GC-MS) respectively.

Results: Remarkable reduced ability to perform physical work, deterioration in moral conducts, increase in accidents and deaths were among the reported socio-economic and health related impacts. Zinc and Manganese metals were detected on AAS analysis. Qualitative GC-MS screening showed the presence of ethanol, propanol, acetic acid, acetamide, formic acid, hydrazine, propylene glycol urea and unknowns in the collected sample.

Conclusion: The presence Zinc and Manganese suggests the possible use of dry cells to catalyze the brewing process. Further study to characterize unknowns will shed light to the cause of untoward effects.

105. Assessment of moisture permeability and closure systems of HDPE plastic bottles used as primary packaging containers for moisture sensitive medicines.

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Background: Moisture permeability and a loose closure system might allow a significant gain of moisture into container and this could lead to significant loss of potency of drug sensitive to moisture and as well promoting the growth of microorganisms. Typical examples of the drugs sensitive to moisture include Tenofovir Disoproxil Fumarate (TDF).

Product claimed to be a “Tight container” does not make it a tight container until proved practically. A plastic container is tight if “not more than one of the 10 tested containers exceeds 100 mg per day per L in moisture permeability.

Objectives: The goal of this study was to determine rate of moisture permeability of selected HDPE plastic bottles for packaging of moisture sensitive medicines in particular Lamivudine/Tenofovir Disoproxil fumarate tablets.

Methodology: The determination of rate of moisture permeability was achieved by assessing closure systems of plastics as per USP method. The plastic bottles were randomly selected from supplier A, B and C.

Results: The plastic bottles from supplier A and B had an average moisture permeability of 12.57 and 51.55 mg/day/L with none of the containers exceeding moisture permeability of 100 mg/day/L. whereas containers from supplier C had an average of 149.95 mg/day/L with seven of the containers exceeding of 100 mg/day/L.

Conclusion: Containers from supplier A and B met the USP specifications hence could be used as primary packaging for moisture sensitive medicines whereas the containers from supplier C did not meet the USP specifications for them to be regarded as “Tight Containers” and hence, unsuitable for packaging of moisture sensitive medicines

106. HPTLC Densitometric Screening for Sildenafil adulterated in Herbal Sexual Dysfunction Medicines available in the Dar Es Salaam Market.

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Background Adulteration of traditional medicines by modern medicines with the purpose of boosting their claimed therapeutic effects has been reported in a number of settings. The practice exposes the users to a possible range of unwanted health effects. This is because it is believed that traditional medicines are generally safer compared to modern drugs. Tanzania, like other

countries, is a no exception to the possible existence of this practice, due to the presence of a high utilization of traditional medicines to relieve different disease conditions in many societies.

Aims: The study aimed at developing and validating an HPTLC densitometric method for screening of Sildenafil adulterated in traditional medicines available in the Dar es Salaam Market.

Methods An in-house HPTLC densitometric method for assay of Sildenafil in tablets was developed and validated. About 1g of selected herbal powder was spiked with standard Sildenafil solution and thoroughly mixed. To the above mixture 5mls of Methanol were added and vortexed for 10 minutes followed by filtration, the filtrate was then spotted on Silica gel plates at 50 μ L. The mobile phase included an-hexane: ethyl acetate: methanol: ammonia (6:7:4:0.5 v/v), the air-dried plates were scanned at 317 nm. Laboratory screening was conducted on conveniently sampled herbal drugs with claims for treating sexual dysfunction in males from 45 different vendor stations in Dar es Salaam.

Results An HPLC densitometric method for determination of Sildenafil adulterated in herbal drugs has been developed and validated as per ICH guidelines. The method is simple, precise, selective and can detect an amount equivalent to one 50 mg Sildenafil tablet added in 1 kg of powdered herbal drug. The screening of collected samples is ongoing, results of which will be presented during the conference.

107. Genetic Diversity and Proteinase Activity of Yeasts Isolated from Traditionally Fermented Milk (*mtindi*) and Industrially Fermented Milk (*yoghurt*)

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Background: Yeasts are the most prominent microorganisms found in traditional fermented milk, “*mtindi*” and industrial fermented milk, “*yoghurt*”. In Tanzania there has not been many studies reporting on yeasts from locally produced *mtindi* and yoghurt using molecular techniques. Enzymatic activities of yeasts are associated with post-production adulteration of yoghurt and as a result decreasing its shelf life.

Methods: A total of twenty five yeast isolates were isolated and studied. Identification was done by ribosomal DNA - Polymerase Chain Reaction (PCR) amplification and sequencing of the domains D1/D2 of the 26S rRNA gene. Proteolytic activity was analysed by plate assay using nutrient agar media supplemented with milk casein.

Results: The identified yeasts were *Candida tropicalis*, *C. pararugosa*, *Clavispora lusitanae*, *Issatchenkia orientalis*/*Pichia kudriavzevii*, *Pichia guilliermondii*/*Meyerozyma guilliermondii*, *Galactomyces geotrichum*, *Debaryomyces* sp and *Yarrowia lipolytica*. *Y. lipolytica* and *D. hansenii* were detected from yoghurt samples only, while *Candida* sp. and *Pichia* sp. were detected only in *mtindi* samples. *G. geotrichum* was found in both *mtindi* and yoghurt samples.

The highest yeast load was of *C. paragurosa* (over log 6 CFU/ml) and *P. guilliermondii* was the least isolated species in numbers of slightly over log 2CFU/ml ($p < 0.0001$). Over 80% of the isolates were protease positive. The highest activity was detected on *C. pararugosa* isolated from *mtindi* with the diameter of clear zone 36.667 ± 5.4 mm, ($p < 0.01$).

Conclusion: Our results showed the potential of dairy yeasts as a source for further exploitation of the production of proteolytic substances with either potential health benefits or spoilage abilities.

Parallel Sessions 5D: Infectious Disease

108. Placental Malaria Exposure and Severe Malarial Anemia Risk in African Children

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Background

Offspring of mothers with placental malaria (PM) may be at higher risk of clinical malaria infection and reduced hemoglobin in early childhood.

Methods

Using multi-center, birth cohort data from 880 participants in the MOMS Project Study in Tanzania, 2002-2006, and 1502 participants in the MRTCLMIV Immuno-Epi Observational Study in Mali, 2010-2015, we investigated the relation of PM with severe malarial anemia (SMA), defined as a positive blood smear for *Plasmodium falciparum* and hemoglobin < 5 g/dL, in children under four years.

Results

Children exposed to PM were at increased risk of incident SMA (adjusted hazard ratio (AHR) = 2.17, 95% confidence interval (CI): 1.16, 4.08), an effect which was stronger in children of younger mothers (P for interaction with mother's age = 0.002). Furthermore, during malaria infections, PM-exposed children experienced lower levels of interferon- γ ($P = 0.044$), higher parasite densities ($P = 0.019$), and reduced erythropoietin ($P = 0.011$) relative to their unexposed peers.

Conclusion

These findings are consistent with the hypothesis that prenatal exposure to PM may induce an immune tolerant phenotype that can alter the pathogenicity of pediatric malarial infections and suggest that prevention of malaria in pregnancy may have ancillary benefits for children's health.

109: Support services may affect pediatric Antiretroviral Therapy (ART) access in Arusha Tanzania

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Background: Current HIV treatment guidelines in Tanzania recommend universal ART for children under 15 years, making it important for every HIV care and treatment clinic (CTC) to be capable of initiating and managing children on ART.

Aim: To describe support characteristics that may influence uptake of pediatric ART services.

Methods: A structured questionnaire was administered to in-charges at 47 CTCs in Arusha in 2013. The outcome variable was proportion of children among all ART patients.

Results: The proportion of ART patients who were <15 years was 7% in primary facilities and 8% in hospitals. All sites were visited by Council Health Management Teams (CHMTs) in 2013, but 28% were visited only 1-2 times, 6% three times, and 66% the recommended 4 times. Twenty-four sites (51%) experienced pediatric ART stock-out during Oct-Dec 2013 and 46% of those were stocked-out ≥ 3 months. Dispensaries (47%) and health centers (67%) were significantly less likely to have pediatric ARV formulations compared to hospitals (93%; $p < .03$) and only 50% of clinics in rural areas had pediatric ARVs compared to urban clinics (84%; $p < .013$). Fifty percent of sites having better pediatric stock levels had a higher proportion of children among all ART patients ($\geq 9\%$) while only 36% of sites with stock-outs lasting ≥ 3 months reached this proportion of pediatric ART patients. Similarly, 52% of sites with the requisite quarterly CHMT supervision visits had a 9% or higher proportion of children among all ART patients compared to only 38% of sites having 3 or fewer CHMT visits.

Conclusion: To safeguard universal access to pediatric ART, there is a need to ensure a stable supply chain system for pediatric ARVs, especially to lower-level health facilities in rural areas, with the health management team providing regular mentorship and monitoring of accessibility and quality of ART services in the district.

110: Successful implementation of universal initiation of ART for HIV infected children in Tanzania

Martha Mukaminega, Gretchen Antelman, Joseph Obedi, Erasmi Assenga, Angelina Kanuya, Samson Kishumbuh, Roland van de Ven
Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) Tanzania

Background: The universal antiretroviral therapy targets stipulates that by 2020, 90% of children living with HIV will know their HIV status, 90% of children with diagnosed HIV infection will receive ART, and 90% of children receiving ART will have viral suppression. In April 2015, Tanzania released new guidance on universal access to ART for HIV-infected children (<15 years) to reach the second “90.” Enhanced site-level support was required to implement the new guidelines.

Description: After the release of the new guidelines, EGPAF developed a job aid summarizing the recommended regimens for children to distribute to sites providing care and treatment services. EGPAF also facilitated site-level data analysis to list the number of HIV-infected children not on ART per site and engaged with regional and district health management teams to support the rapid implementation of the new guidelines. As part of site-level supervision, EGPAF and the local government reviewed HIV-infected children's files to identify and address mentorship needs, and to hold site providers accountable for ensuring that no child was denied immediate ART access.

Lessons learned: At the end of June 2015, two months after the release of the new guidelines, more than 92.9% of HIV-infected children currently attending HIV care/treatment clinics were on ART, compared to 39.8% by March 2015. Active data uses for decision making and facilitating early adoption through creation of job aids and mentorship have enabled this rapid implementation.

Next Steps: Universal initiation of ART in children can be scaled up rapidly with support and alignment of priorities between implementing partners and local government authorities. Rapid acceptance and adoption of the new guidelines among health providers may be attributed to the simplicity of the mandate, and suggests that universal ART access for all clients with HIV may also be highly acceptable and implementable.

111: The Child Centered Family Care Clinic, an effective approach to reach the first and the third pediatric 90

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Sokoine Regional Hospital

Background

In September 2005 EGPAF worked with the Kilimanjaro Christian Medical Center (KCMC) to establish the Child Centered Family Care Clinic (CCFCC) following guidance of the National AIDS Control Program.

The CCFCC model provides comprehensive family-focused care to HIV-Exposed Infants (HEI) and HIV-infected children together with their families on designated clinic days. The entry point to program services is through identification of an HEI or infected child. The clinic also provides adolescent/youth clinics on a monthly basis. KCMC's CCFCC also provides mentoring and training to service providers (SP) from other clinics, including a clinical attachment program.

Aim

To describe the replication of the CCFCC model at Sokoine Hospital

Methods

In January 2015, three SPs from Sokoine Hospital attended a 2-week clinical attachment at KCMC prior to establishing Sokoine's CCFCC. Thursday clinics are now focused on families with HEI; families with HIV-infected children less than 10 years are scheduled on Wednesdays; and the last Saturday of every month is for adolescent care including a package of services supporting HIV status disclosure, ART adherence and life skills. A pediatric focal-person was appointed in February 2015 to coordinate pediatric HIV care at Sokoine Hospital. In 2015, the

Pediatric Association of Tanzania provided pediatric 6-day mentorship at least every two months.

Results

During the first year of Sokoine's CCFCC (Jan-Dec 2015), all HEI (100%) received cotrimoxazole by two months and 97% had a DBS collected by two months, compared to 78% and 52% respectively in 2014. The 3-month pediatric ART retention increased from 65% for children starting ART in 2014 to 97% for children starting ART from January to June 2015.

Conclusion

Early data from Sokoine Hospital suggest that the CCFCC program model can be replicated at regional hospitals, and can contribute to early identification as well as retention of HIV infected children.

112: Drug Resistance Mutations and Genetic Diversity in Adults Treated for HIV Type 1 Infection at Amana Hospital, Dar es Salaam

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Background: As more HIV patients join antiretroviral therapy (ART) programs in resource-limited settings the emergence of HIV drug resistance (HIVDR) is inevitable. This will have consequences for the transmission of HIVDR, the success of ART, and the nature and trend of the epidemic.

Objective: To determine drug resistance mutation and genetic diversity in adult patients on ART

Methodology: We followed a cohort of 223 patients starting or continuing their first-line ART and followed up for one year. HIV-1 genotyping was performed with the ViroSeq HIV-1 Genotyping System. Mutations and polymorphisms were scored by the Rega algorithm in the reverse transcriptase and protease region of HIV nucleotide sequences.

Results: Of these patients 50 had baseline samples, 26 of which were treatment naïve at that time. Fifty five, one-year follow-up samples had a detectable viral load. Only 22.6% of patients on treatment for at least 6 months were failing virologically, but this increased with treatment duration. From 41 patients, protease and reverse transcriptase genotyping was successful at study baseline and/or at one year follow-up. Eighteen were samples from therapy-naïve patients and 23 samples were taken under therapy either baseline for patients already under ART at study entry, or follow-up sample. The isolates were mostly subtype A followed by C and D at 41.5%, 22% and 12.2% of the patients, respectively. No major PI mutation was found in any of the samples. Among the 23 samples taken under therapy, 19 carried DRMs. The most observed nucleoside reverse transcriptase inhibitor (NRTI) mutation was 184V in 16 patients causing resistance to lamivudine and emtricitabine. Nineteen patients had NNRTI resistance mutations, the most common of which was 103N (8 patients). Other mutations included thymidine associated mutations.

Conclusion: Given these high levels of resistance among virologically failing patients to the recommended drugs in the Tanzania National HIV Care and Treatment guidelines, regular drug resistance surveillance is highly needed in Tanzania in order to inform on the control of emergence and transmission of drug resistance in the population, and to guide decisions on changes in treatment guidelines.

Parallel Sessions 6A: NCD

113. Prevalence of Low Back Pain among Healthcare Workers: A Case Study of Kibuli Muslim Hospital Uganda

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Introduction: Low back pain has turn out to be an important public health issue as it has high prevalence rates in many countries and also it costs implications. It was also reported by Brennan et al, (2007) that low back pain not only considered to be the most common reason for functional disability worldwide, but also estimated to have affected 90% of the universal population.

Methodology: The researcher used a self structured questionnaire to determine the factors associated with the prevalence of low back pain among healthcare workers at Kibuli Muslim Hospital, Kampala Uganda. Data was entered using Epi info soft ware and analyzed using SPSS.

Results: The result indicated that the point prevalence for low back pain in this current study was 84 %. The prevalence was higher among the female healthcare workers 54.76% than the male healthcare 45.24%. Socio-demographic factors like age, gender, marital status and occupational activities such as bending, sitting, standing and twisting were a key player in the development of low back pain although not significantly associated. Majority of the healthcare workers who were on night shift have high prevalence of low back pain, while leisure activities and training were the only significant factors in this study.

Conclusion: The study confirmed that the prevalence of low back pain among the healthcare workers in Kibuli Muslim Hospital was high. Factors such as age, feminine gender and occupational activities increase the risk of low back pain while preventives healthcare facilities and training of the healthcare worker reduces the risk of low back pain. Hence it was recommended that: the low back pain seems to contribute to the disability adjusted life years of the healthcare workers, low productivity as a result of work absenteeism among the healthcare workers and the cost burdens on individual and the government

114. Downstaging Cancer in Rural Africa

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Background: Cancer is usually diagnosed late in rural Africa leading to incurability and abbreviated survival. Many curable cancers present on the body surface, often recognizable early by laymen as suspicious, justifying professional referral.

Objective: To determine whether cancer can be downstaged in rural Africa using simple educational means and information Communication technology

Methodology: Cancer diagnoses in two randomly chosen Tanzanian villages were compared after conventional dispensary self-referral vs. proactive visits in the home. Village navigators organized trips for professional consultation.

Results: In the control village 21% were self-referred, 20% of them were sent on as suspicious, 78% had cancer (8% in men) 0.9% of the village population. In the intervention village 99% were screened, 14% were referred for professional opinion, 93% had cancer (32% in men) 1.6% ($p < 0.01$ compared to control village). In the second and third years similar activity yielded 0.5% cancer annually in the control village for a three year total of 1.86% whereas interventional villagers had 1.4% and 0.6% cancer for a three year total of 3.56% ($p < 0.001$).

Conclusion: Downstaging was recognized in the second and third years of intervention from 23 to 51 to 74% stages I and II ($p < 0.001$) but in the control village stages I and II changed from 11% to 22% to 37% ($p=NS$). The greatest downstaging occurred in breast and cervix cancers.

115. Most women diagnosed with cervical cancer by a visual screening program in Tanzania completed treatment: Evidence from a retrospective cohort study

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Background: Visual inspection with acetic acid (VIA) to identify and treat pre-cancerous lesions is effective for cervical cancer prevention. Screening programs also facilitate screening and diagnosis of invasive cancers that must be referred for radiation therapy or chemotherapy.

Objective: The purpose of this study was to compare characteristics of women diagnosed with invasive cervical cancer by a VIA screening program who did and did not follow up for treatment and who did and did not complete treatment at the Ocean Road Cancer Institute (ORCI), Dar es Salaam, Tanzania.

Methods: We conducted a retrospective cohort study of ORCI screening referrals from the period November 2002 to June 2011. Women referred for treatment of invasive disease ($n = 980$) were identified from an existing database of all women attending the screening clinic during this period ($n = 20,131$) and matched to a dataset of all cervical cancer patients attending ORCI in

this period (n = 8,240). Treatment information was abstracted from patient records of women who followed up. Records of a random sample (n = 333) of unscreened patients were reviewed for disease stage.

Results: Of the 980 women referred women, 829 (84.6%) sought treatment. Most of those women (82.8%) completed their prescribed radiation. Lower disease stage, having a skilled occupation, residence in Dar es Salaam, and younger age were independently associated with loss to follow-up. Higher disease stage, residence in Dar es Salaam, older age, and later year of first treatment appointment were independently associated with incomplete treatment among those who followed up. Significantly more screened women had stage 1 disease (14.0%) than unscreened women (7.8%).

Conclusions: Most women referred from the screening clinic completed treatment for their cancer at ORCI. Some of those lost to follow-up may have sought treatment elsewhere. In most cases, the screening clinic appears to facilitate diagnosis and treatment, rather than screening, for women with invasive cervical cancer.

116. Pathology and oncology in Africa: education and training for the future in cancer research for East African Regional Meeting

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According to the World Health Organisation (WHO), deaths from non-communicable diseases (NCDs) will increase globally, with the largest increase being on the African continent. On our continent, projections have indicated that deaths from NCDs will exceed all combined communicable, maternal, perinatal and nutritional diseases as the most common causes of death by 2030. Hence, the importance of a functional and improved pathology system in the diagnosis of cancer cannot be debated.

Recently, the African Organization for Research and Training in Cancer (AORTIC) organised its East African regional meeting in Mwanza, Tanzania on 25–26 June 2015, with the focus being ‘Pathology and oncology: Education and training for the future in cancer research’. The main themes of the workshop were around improving cancer care and the role of twinning in Eastern Africa, in particular the Mwanza cancer project, telepathology, e-health and biobanking. The outcomes of a 2 day strategic meeting were developing an efficient and effective plan to guide the improvement in pathology training and cancer research in Africa.

117. A Case-Control Study to Evaluate the Etiology of Esophageal Cancer in Tanzania

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Background

East Africa has been previously reported as a geographic area with a disproportionately high incidence of squamous cell esophageal cancer (EC); in the setting of an apparent geographic cluster.

Aim: To identify specific etiologic factors contributing to the high incidence of EC in Tanzania (TZ).

Methods: We performed a case-control study to examine possible associations between EC and selected environmental, dietary, and lifestyle factors. Newly diagnosed EC cases were recruited at Muhimbili National Hospital and Ocean Road Cancer Institute during 2014-2015. Hospital controls were identified from patients with non-malignant conditions and matched 1:1 for gender and age ± 10 years. The study team conducted in-person interviews. A matched case-control analysis used McNemar's test with a Mantel-Haenszel estimate for odds ratios (OR).

Results: 375 cases and 375 controls were enrolled. 71% of cases and controls were male. Median age was 58 years (range 30-91) for cases and 55 years (range 31-88) for controls. Among cases with a confirmed pathologic diagnosis, squamous cell carcinoma was the most common histology (85%). Liquor consumption [OR 1.84, 95% CI: 1.05-3.22, $p=0.04$], burning firewood (OR 2.66, 95% CI: 1.88-3.76, $p<0.001$), use of kerosene (OR 3.29, 95% CI: 2.36-4.59, $p<0.001$), and use of surface water as a primary source of drinking water (OR 2.3, 95% CI: 1.41-3.76, $p=0.001$) were associated with increased risk of EC. Running water, gas, and electric utilities in the household were protective.

Conclusion: Alcohol consumption, firewood and kerosene use as fuel, and surface water consumption merit further investigation as potential etiologic factors contributing to high EC incidence in TZ. Future research will include conducting multivariate analysis with these and other potential risk factors and a genome-wide analysis study using DNA extracted from saliva specimens obtained from cases and controls.

Parallel Sessions 6B: Reproductive Health

118. Achieving targets at scale through integration of malaria and HIV programming

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Elizabeth Glaser Pediatric AIDS Foundation Elizabeth Glaser Pediatric AIDS Foundation
Ministry of Health, Community Development, Gender, Eliderly and Children

Background: National targets for malaria testing and intermittent presumptive therapy for pregnant women (IPTp2) are ambitious, requiring 80% tested and 60% IPTp2 by 2016/17, increasing to 90% and 80% by 2020, respectively. In April 2015, EGPAF integrated multi-pronged technical assistance to the Malaria in Pregnancy (MiP) program in Lindi and Mtwara with its existing MNCH/HIV program.

Aim : To describe the effect of system-level capacity building interventions on malaria screening and IPTp2 coverage at all health facilities in Lindi and Mtwara, and the feasibility of integrating MiP programming into existing HIV programming.

Methods

After conducting baseline assessments in late 2014, EGPAF developed a systems strengthening technical assistance strategy focused on engaged leadership, supply chain management, quality improvement and supervision.

Activities included: Regional malaria stakeholders meeting with participation of the NMCP and R/CHMTs of Lindi and Mtwara to orient on revised guidelines, foster collaboration and emphasize roles/responsibilities of each stakeholder. Implementation of district-level scorecards to engage and motivate poor performing districts. Monitoring malaria commodity status at facility, district and zonal MSD levels, supporting redistribution where needed, and building capacity in recording consumption data to improve forecasting and ordering; Supporting CHMTs to integrate MiP into routine R/MNCH supervision, include the district's malaria focal person in supervision and review malaria indicators during quarterly data analysis workshops.

Results: The coverage of malaria screening in pregnancy for Lindi/Mtwara increased from 41% in 2014 to 67%, 74% and 82% respectively in the 3 quarters after program implementation (April-December 2015). Similarly, indicators measuring coverage of IPTp2 increased from 44% in 2014 to 66%, 65% and 82% in 2015.

Conclusions: Integrating MiP program goals within an existing HIV project is feasible and led to Lindi and Mtwara achieving key national MiP targets within a short time through systems strengthening approaches involving the NMCP, capacity building at district level, and target site support.

119. Seeking health information in rural context: exploring sources of maternal health information in rural Tanzania

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University of Dar es Salaam

Background: Although women are not necessarily ill during pregnancy, the possibility that a complication may occur is potentially serious that routine health care visits are highly desirable. Providing them with relevant maternal health information that may encourage them to effectively utilize maternal health care services during this time is essential in reducing complications that

may result in both maternal mortality and morbidity. This study examined sources of information used by pregnant women in rural Tanzania in meeting their maternal health information needs.

Methods: The study utilized a mixed method research design that integrated both qualitative and quantitative research methodology. A total of 429 respondents comprising of women, health care providers and men were involved in the study. A combination of questionnaires, in-depth interviews and focus group discussions were used to collect information from respondents.

Findings: The study revealed that women in rural areas use multiple sources of information to meet their maternal health information needs. Most of the sources used include: professional health care workers such as doctors and midwives; community health care workers; traditional birth attendants; spouses; relatives; radio; television; and newspapers. However, while quantitative data indicated that many women relied much on professional health care workers for maternal health information; qualitative data showed that many of them received this information from community health care workers and traditional birth attendants despite the fact that these sources were perceived to have inadequate health care knowledge.

Conclusion: Based on the above observations, the study recommends that while it is imperative to encourage and sensitize pregnant women and the public in general to seek maternal health information from reliable sources, community health care workers should also be empowered so that they can be able to properly communicate maternal health information in all areas where health care facilities are not available.

120. "... Sometimes a laboratory Assistant stand as my assistant surgeon...;" Challenges and experiences by Assistant Medical Officers in performance of caesarean section in rural setting, Tanzania

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Muhimbili University

Background: Maternal Mortality Ratio (MMR) stands at 432/100,000 live births in Tanzania. Among the efforts in reduction of MMR has been the upgrading of health centres to enable performance of caesarean section deliveries. Most of the rural settings rely on the availability of the Assistant Medical Officers as the main surgeon to perform caesarean sections (CS).

Objective: To analyze challenges and experiences in performance of caesarean section deliveries by Assistant Medical Officers (AMOs) in rural Tanzania

Methodology: A qualitative case study approach was used. A total of 33 In-depth interviews were carried out with; AMOs, labor ward nurses, theatre nurses, anesthetists, DMOs, DHSs and RMOs from four selected regions and rural districts in Tanzania. Data analysis adopted a qualitative content analysis approach.

Results: Performance of CS by is challenged by; critical shortage of other cadres needed for CS performance both in number and skills; severe shortage of equipment, drugs and supplies; feelings of not being recognized by higher authorities; low and delayed compensation after extra duty and on call work; and inadequate surgical skills for fresh graduating AMOs. This study

revealed the following experiences; use of less trained cadres in places of anesthetists, availability of in-service emergency obstetric care courses to AMOs in some settings, borrowing of anesthetists from nearby facilities and team work spirit of the few available staff as facilitators.

Conclusion: AMOs form the backbone of health services delivery at the district health system. For reduction of MMR, access to quality CS for those in need is necessary. The challenges unveiled by this study therefore deserve necessary attention.

121.Determinants of Adverse Neonatal Outcome Among Preterm Neonates Of Severe Pre-Eclamptic/ Eclamptic Mothers At Mnh

Restuta Kibasa

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Severe pre Eclampsia/Eclampsia increases the risks of hospital admission, preterm deliveries, morbidity and mortality to both the mother and neonates. The increased incidence of pre mature deliveries in severe PE/E mothers poses a question on what can be done to improve survival of these newborns. This study had a focus on factors that affect healthy outcomes of pre mature neonates born of severe PE/E mothers in order to inform policy markers on areas of care that could be improved so that to minimize adverse outcome of pre mature neonates.

Objective: Our aim was to determine factors associated with adverse neonatal outcomes of preterm singleton neonates born of severe PE/E mothers at MNH.

Methodology: A nested case control study was conducted at MNH in maternity ICU and neonatal ward. All neonates born of severe PE/E women delivered at MNH were followed up to seventh day of birth, either discharged or dead depending which came first. Neonates were categorized according to presence or absence of adverse neonatal outcome. Using SPSS statistics version 20, bivariate and multivariate logistic analyses were done to determine factors that were independently associated with adverse neonatal outcomes. Statistics with p value <0.05 were taken as significant. MUHAS, IRB provided ethical clearance.

Results: There were 480 women with severe PE/E who delivered during the study period. Among them fourteen women had multiple pregnancies and were excluded. Of the 466 deliveries, 282 (60.5%) were born preterm which makes the incidence to be 605 per 1000 deliveries. The incidence of adverse neonatal outcome among singleton pre term neonates of severe PE/E women was 387 per 1000. Factors that were independently increase adverse neonatal outcome were spontaneous vaginal delivery compared to caesarian delivery (OR=3.5 with 95% CI: 1.87-6.80) and among very low birth weight compared to high birth weight (OR=4.2 with 95% CI: 1.31-6.44).

Conclusion: Mode of delivery and low birth weight were independent cause of adverse neonatal outcome among preterm neonates born of severe PE/E women at MNH. Ineffective pre delivery management of severe PE/E and failure to expedite delivery are key underlying factors.

122. The Systemic Inflammatory Response Syndrome as Predictor of Mortality among Febrile Children in the Emergency Department

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Introduction: Sepsis is defined as a known or suspected infection in a patient with elements of the systemic inflammatory response syndrome (SIRS). Septic patients present with a variety of clinical manifestations, but temperature dysregulation, tachycardia, tachypnea, and an abnormal white blood cell (WBC) count are considered cardinal components of SIRS. We investigated the predictive value of SIRS criteria for in-hospital mortality among febrile children under 5 years old presenting to the Emergency Department (ED) at Muhimbili National Hospital in Dar-es-Salam, Tanzania.

Methods: This was a descriptive cohort study of febrile children under 5 years, presenting to our ED. Providers prospectively completed a standardized data sheet. Outcome data was obtained from hospital records and telephone follow-up. Study data were entered into Excel (Microsoft, Redmond, WA, USA) and analyzed in SAS 9.3 (Cary, North Carolina, USA).

Results: We enrolled 105 patients between August and November 2012. The median age was 14 months, with 80% over 6 months old, and 63.8% were male. 57 (54.3%) children were referred from outside facilities. The overall mortality rate was 19%, and 90% of children who died had ≥ 2 SIRS criteria. Mortality in children with ≥ 2 SIRS criteria (in addition to fever) was significantly higher (27.7% versus 5%) than in those with 0-1 SIRS criteria, and children with fever and > 2 SIRS criteria were seven times more likely to die (OR 7.05, $p=0.01$). 85 children were discharged from the hospital, and of the 64 (75.3%) children we were able to reach after discharge, all were alive at 14 day telephone follow-up. 19/85 children who survived to hospital discharge were lost to follow up.

Conclusion: SIRS criteria may be helpful to predict febrile children at high risk of mortality. Further studies are needed to validate these findings in larger cohorts.

Parallel Sessions 6C: Oral Health

123. Knowledge, Attitude and Practices of Primary School Teachers Towards Oral Health in Mzuzu City, Malawi

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Background: Since the behavior of children is shaped at school where they spend most of the time, teachers can be used as oral health educators. However, only a teacher with adequate oral health knowledge, attitude and practices can affect pupils' oral health practice.

Aim: To assess oral health knowledge, attitudes and practices of the primary school teachers in Mzuzu city, Malawi.

Methodology: This descriptive cross-sectional study was carried out on 382 primary school teachers using a structured questionnaire. Data analysis was done using SPSS version 16.0 computer program.

Results: Around 95% and 84% of teachers had right knowledge on the causes, symptoms and prevention of dental caries and periodontal disease respectively. About 90% of the participants reported to brush twice or three times a day and 60% of them change their toothbrush after 3 months. Although more than 90% of participants felt that dental check up is important, only 22% reported to go for dental checkup. Moreover, 55% of teachers felt that a dentist's duty is to do extraction and 47% disagreed that extraction is the only option for treatment of dental caries. Majority (80%) of the respondents acknowledged that oral health education is included in the school curriculum and 60% of teachers were involved in oral health education. However, only 30% of teachers reported to have attended in service training for oral health education while only 20% reported to receive supervision from a dentist during teaching. The popular source of oral health information reported was mass media.

Conclusion: Although most of the teachers had good knowledge on causes and prevention of dental caries and periodontal disease, they lacked knowledge on treatment options for dental caries and had poor oral health practices. This observation suggests that primary teachers need organized training to improve their oral health knowledge and practices.

124. High Oral Candida Colonization among HIV infected individuals in Mwanza, Tanzania

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Background: Oral candidiasis (OC) is one of the major opportunistic fungal infections that occur in over 90% of the HIV infected individual during the course of their illness. It is one of the Acquired Immune Deficiency Syndromes prognostic indicator and a major predisposing factor to invasive fungal disease like blood stream candida infections.

Objective: This study was design to compare oral Candida colonization between HIV and non-HIV infected individuals. **Methods:** Oral rinses of 990 individual were collected between March and July 2015, 351(35.45%) from HIV infected and 639(64.55%) from non-HIV infected individuals. Phenotypic identifications of Candida spp. was done using Candida Chromogenic agar and confirmed by MALDI-TOF MS.

Results: Candida colonization was detected in 329(33.23%) studied individual. Candida albicans was the commonest specie detected 80.6% (265/329). Non-albicans Candida spp. were detected from 19.5% (64/329), while 3.65% (12/329) had more than one spp. HIV infected individuals were more colonized by Candida than non-HIV infected individuals (155, 44.16% vs 154, 27.23% p=0.0007). Non-albicans Candida (NAC) spp. were detected in 10.3%(36/351) of HIV infected compared to 4.4%(28/639) of non-HIV infected individuals P=0.0003. In HIV infected individuals, commonly isolated NAC spp. were Candida tropicalis, 10(2.8%), C. krusei

(*Issatschenki orientalis*) 9(2.6%) and *C. glabrata* 8(2.3%). While for non-HIV infected individuals, *C. dubliniensis* 8(1.3%) and *C. tropicalis* 5(0.9%) were commonly detected. Of 12 individual detected to be colonized by multiple spp., 7(58.33%) were HIV infected.

Conclusion: *Candida* colonization among HIV-infected individuals is high placing them at higher risk of invasive infections caused by these pathogens. Further studies should be done to investigate the role of non-*albicans* *Candida* spp. in causing invasive fungi infections among immunocompromised patients.

125. Dental Caries Knowledge Among Nursing Students of Muhimbili University of Health and Allied Sciences (MUHAS)

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Background: Dental caries is the most prevalent oral diseases and it is of public concern in low-income countries. Nurses can play a very important role in imparting knowledge about the causes and prevention of common oral diseases in the community they serve. To carry on this role nurses need to have good knowledge concerning the oral health and diseases.

Objective: To assess dental caries knowledge among nursing students of MUHAS.

Methods: This descriptive cross-sectional study involved 237 nursing students pursuing bachelors and diploma studies. Data was collected using a self-administered structured questionnaire and the analysis was done using SPSS version 20.

Results: More than 88% of the participants knew that bacteria and sugar are the main causes of dental caries. However, only 30% of the respondents knew that frequency of sugar consumption is important factor for development of dental caries. Although 87% of respondents had sufficient knowledge on symptoms of dental caries, only 23% of the students responded that extraction is not the best option for treatment of dental caries. Majority of participants (84.8%) were not aware that tooth extraction can results in adverse pregnancy outcomes and only 13% of them knew that caries can be transmitted from mother to child. Around 57% of participants knew that dental caries can cause bacterial endocarditis.

Conclusion: Most of the nursing students had good knowledge on aetiology, symptoms and prevention of dental caries. However, they lacked knowledge on treatment options of dental caries and on pregnancy complications that can result from tooth extraction. Furthermore, they showed poor knowledge on mother to child transmission of dental caries. This observation suggests a need to incorporate oral health education components in nursing curriculum and conducting regular in-service nurse staffs training. This will improve their knowledge and help them to serve the public well.

126. Diagnostic Challenges in Patient with Multiple Impacted Teeth: A Case Report

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Background: Teeth that cease to erupt into the oral cavity are known as impacted teeth. While failure of the eruption of permanent teeth is a common dental anomaly, multiple impacted teeth by itself is a rare condition, often found in association with syndromes such as cleidocranial dysplasia or Gardner's syndrome. However, under some circumstances there is no associated underlying systemic condition or syndrome

Aim: The aim of this case report is to increase awareness of cases of multiple unerupted teeth in which underlying condition could not be established.

Methods: A descriptive case report of a 26 year old male patient who had a total of 27 missing teeth in his oral cavity. Radiological examination revealed 27 impacted teeth. The medical and family histories along with extra oral examination were not suggestive of any syndrome or metabolic disorder.

Conclusion: In absence of positive findings of investigations suggestive of a given syndrome, an idiopathic case of multiple impacted teeth is suggestive to be the possible diagnosis.

127. Periodontal Status/Conditions and Quality of Life in Patients Attending Muhimbili University Dental Clinic, Dar-Es-Salaam, Tanzania

Peter Fabian Shempemba, Elifuraha Mumghamba

Objective: To assess oral health related quality of life (OHRQoL) in patients with periodontal disease/conditions attending Muhimbili University Dental Clinic.

Methods: Convenient descriptive cross-sectional hospital based study was conducted in the restorative department at MUHAS University Dental Clinic with a total of 300 dental patients aged between 16-88 years old. Assessment of subjects' Oral health related quality of life was done using the short version of OHIP-14s (Oral Health Impact Profile short version). Full mouth clinical examinations were carried out. Domains were analyzed using SPSS version 20 and statistical significance was determined at $p < 0.05$. Further analysis included Analysis of covariance (ANCOVA).

Results: Of the 300 subjects, 148 (49.3%) were males and 152 (51.7%) were females providing a male to female ratio of about 1:1. Of these, subjects with gingivitis was 99% ($n=300$). Male subject and those with age above 45 as well as primary level or had no formal education had more mean sites with gingival recession ($p < 0.05$). Of the 300 patients, 43.7% had severe periodontitis.

Domains that contributed to the perceived impact include physical pain and psychological discomfort while negative impact on the functional limitation domains was less prevalent 7.3%. Age below 45 years scores high on psychological and social disability domain ($p < 0.05$).

Adjusted mean full mouth CAL >2mm had more OHIP mean scores in the domains of physical disability and the total score ($p < 0.001$ and 0.05 respectively).

Conclusion: Oral hygiene status in this study population was very poor. Majority of the study participants had severe periodontal disease and were associated with males sex, low education, and age groups 45 years and above. Periodontal disease had a negative impact on quality of life on psychological and social disability domains as well as on psychological discomfort and social disability regarding to age and periodontal pocket depth respectively.

128. Awareness of preventive oral health care among parents/caregivers of preschool children in Dar es Salaam Tanzania

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Background: A child's oral health is important because it contributes to the general wellbeing of the child and the future adult oral cavity. Since children spend most of their time in the company of parents/caregivers, their awareness on prevention of oral diseases in children is essential. Limited awareness on issues such as the importance of primary teeth, role of tooth-brushing and frequent sugar consumption among parents and caregivers is a stumbling block in prevention of oral diseases in children.

Aim: To determine awareness related to preventive oral health care among parents/caregivers of preschool children in Ilala district, Dar es Salaam.

Methodology: A descriptive cross-sectional study was conducted among parents/caregivers of 350 children from preschools in Ilala district, Dar es Salaam. A structured self-administered questionnaire translated into Kiswahili was sent to parents/caregivers through the child's class teacher and regular follow-up was done. Data was entered onto SPSS version 20.0 and analysis done to compute proportions of care givers with sufficient awareness on prevention of dental caries.

Results: Out of the five oral habits questions posed to parents/caregivers, those who said thumb sucking, lip biting, nail biting, tongue thrusting and pencil sucking are detrimental oral habits amounted to 63.7%, 42.9%, 74.3%, 41.1% and 66.6% respectively. However, parents/caregivers who scored at least four of the habits as detrimental were only 38.3%. Likewise, less than half of the parents/caregivers had sufficient awareness on importance of deciduous teeth and the need to treat them 47.4%, only 27.4% answered correctly to the question regarding when a child's first visit to the dentist should be .

Majority of the parents/caregivers (97.7%) knew frequent exposure to sugary and sticky foods causes tooth decay and many (66.3%) considered bottle-feeding at night to be detrimental. However, few (25.1%) were aware of the best time to give sugary drinks and snacks.

Many parents gave correct responses regarding the size of a toothbrush, amount of toothpaste, whether a child should be supervised during brushing and until what age. However, none of the participants were aware of the correct age at which a child can start brushing his/her own teeth

and only 14.3% were aware of the appropriate parental position during supervised tooth brushing.

Conclusion: Awareness of participants varies in deferent topics asked. Majority of them had sufficient awareness regarding correct tooth-brushing topic. However, few were of awareness of detrimental oral habits, importance of deciduous teeth, appropriate time for the first dental visit and influence of diet in prevention of dental caries. Hence, it is vital that specific topics on prevention are prescribed in health education for specific target groups. Emphasis should be put in topics where big awareness gaps have been identified.

129. Data repository interoperability between MySQL and REDCAP systems in Muhimbili Sickle Cell Cohort

Raphael Z. Sangeda, Julie Makani
MUHAS

Background: Data interoperability and portability is a key question that clinical researchers need to ponder when designing both short and long term clinical research studies. REDCap stands for Research electronic data capture, which reliable open source software module is meant for rapid development and deployment of electronic data capture tools to support clinical and translational research. MySQL on the other hand is MySQL is an open source relational database management system (RDBMS) based on Structured Query Language (SQL) allowing data storage and management.

Aim: To create a system that ports clinical research data from one system to another with minimal human intervention.

Methodology: We developed an algorithm that transforms data from MySQL to REDCAP. The algorithm reads MySQL repository metadata of the cohort using Python programming language and converts it to a REDCAP data dictionary. MySQL structured query language (SQL) statements were written to export data to a flat file format and finally the data was ported back into REDCAP systems.

Results: Muhimbili Sickle Cell Data was ported from its system into REDCAP format. As a proof of concept the data entry instruments were divided into demographic, residence, sibling, entry, admission and clinical, test results, CNS events, tcd, echo and exit. All the data screen forms were linked using a key variable demographic id, which also links back to the original data. Data of 10,390 individuals was transferred between the 2 systems using spreadsheet as intermediate file for the data migration.

Conclusion: The tool developed has enabled easy and quick transfer of data between systems and holds potential for application in other studies.

130. Use of mHealth to Bridge the Communication Gap in Early Infant Diagnosis in Manyara Region, Tanzania

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Background: Mobile health (mHealth) uses electronic devices with applications to provide health services and manage patient information. With a recognized increase of phone users in Manyara region, opportunities for technology play a role in health services particularly in low/middle income countries. mHealth can also support the performance of service providers(SP) with dissemination of appointment reminders in underserved rural locations.

Respond Tanzania Project (RTP) supports 84 facilities in prevention of mother to child transmission (PMTCT) among which 45(30%)deploy short message service(SMS)printers to transfer polymerase chain reaction(PCR) electronic results from Kilimanjaro Christian Medical Centre(KCMC)laboratory. Facilities that don't have SMS printers depend on a nearby facility with one for electronic HIV exposed infants(HEI) PCR results.

Aim:Consenting HIV positive women delivering at 15 selected health facilities are documented and provided appointments to return for follow up Reproductive Maternal Neonatal and Child Health (RMNCH) services. This initiative focuses on use of provider's phones to remind HIV positive mothers to return with their babies at 42 days; a quicker turnaround time of HEI PCR results from the zonal laboratory to SP; accelerate delivery of HEI PCR results to mothers via neutral text messages informing mothers to return to the facility

Methods: Using labor & delivery (L&D) registers SP's enter information related to consenting HIV positive women into the phone application.

This initiative uses mobile application, web-based systems, unstructured supplementary service data (USSD) for data input while SMS protocol is used for notification/reminders between the system and the health provider/mothers.

Results:This initiative is in its implementation phase. Results are due in May 2016

Conclusion: There is potential to improve health provision using mHealth in low/middle income countries.

131. Web Visibility of Pharmacy Research at Muhimbili University of Health Sciences, Tanzania

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Sokoine University of Agriculture

A scientometric analysis was conducted to map the web visibility of pharmacology research at Muhimbili University of Health and Allied Sciences from 1980 to 2016. Scientometric analysis is a type of quantitative methods used in evaluating research productivity of individual scientists. Data for research productivity of 34 scientists from the School of Pharmacy were obtained using the Publish or Perish software which uses Google Scholar to retrieve scholars' publications, citation counts and other metrics. A total of 499 publications were recorded for all scientists. The year 2013 had the highest proportion of publications. The whole study period records the mean RGR and Dt of 1.62 and 0.46 respectively. The rate of growth of publications increased while

the corresponding doubling time decreased. A great majority (484; 97%) of the publications were multiple-authored with nearly one third (157; 31.5%) of these being jointly contributed by six or more authors. The degree of collaboration among scientists was 0.97. The maximum number of citations received in a single publication was 241. The top ranked pharmacy researchers showed considerable variation in various metrics. Pharmacy scholars at MUHAS published their research findings in 123 different journals during the period between 1981 and 2016. Several recommendations are made based on the study findings.

132. The Road towards the First Sickle Cell Disease Ontology

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Sickle Cell Programme- MUHAS

Introduction: While SCD research across the globe is tackling the disease on multiple fronts, advances have yet to significantly impact on the health and quality of life of SCD patients, due to lack of coordination of these efforts. Ensuring data across studies is directly comparable through standardization is a necessary step towards realizing this goal. Such standardization requires the development and implementation of a diseases specific ontology for SCD that is applicable globally. Coordination of research activities on different patient cohorts requires development of a Sickle Cell Ontology that provides a controlled and consistent vocabulary of various definitions of SCD in terms of clinical events, genetic and environmental modifiers, co-morbidities, therapeutics, psychosocial burden and quality of life.

Aims: To establish canonical and hierarchical representation of knowledge on SCD collaboratively to establish standard protocols for assessing SCD phenotypes in limited resource populations.

Methodology: This is an ongoing process preceded by a recent SCD Ontology workshop held in April 2016, in Cape Town. The workshop was attended by 36 members of the SCD community and H3ABioNet, who were tasked to develop an ontology covering aspects of SCD under the classes: phenotype, diagnostics, therapeutics, quality of life, disease modifiers and disease stage. The aim of the workshop was for participants to contribute their expertise to development of the structure and contents of the SCD ontology.

Conclusion: Once completed, we anticipate that the ontology will be the most comprehensive collection of knowledge in the SCD field. It will facilitate exploration of new scientific questions, data sharing and collaborations including meta-analysis within the SCD community; and to support the development and curation of databases and clinical informatics in SCD. The ontology will be used to share data among the SCD community, and enable queries across the different datasets.

133. Deployment of an institutional wide easy to use Tools for research electronic data capture at MUHAS

Raphael Zozimus Sangeda, Felix Sukums, Tandi Lwoga, Julie Makani

MUHAS

Background: Research electronic data capture (REDCap) is an easy to implement Open source software module meant for rapid development and deployment of electronic data capture tools to support clinical and translational research. It allows various groups in the institution to develop online survey and databases for their research and simplify analysis. The tools can be assessed locally on the intranet, on internet and on mobile devices. It allows fine grained security so that a number of research groups may work on their research data with privacy and without the intrusion by other independent research groups.

Aim: To outline the process we undertook to deploy the REDCAP services and make them available to MUHAS research community.

Methodology: We contacted Vanderbilt University and obtained the University License for using REDCAP. REDCap was then installed on the MUHAS-H3ABionet server. The server was provided by H3ABionet- A Pan African Bioinformatics consortium, in which MUHAS is a member. The server is a Dell -PowerEdge C6145 containing 24 central processing units and 126G of RAM with versatile computational power and capabilities. The server runs under Linux hosted on Apache webserver and MySQL database. Training was conducted to members of MUHAS on the use of RedCap after which a feedback was obtained to evaluate the utility of RedCap for the Institution.

Results: RedCap installed at were deployed on a webserver, and made publicly available to member of MUHAS. It involves creating an account that each project or group can create their research databases and surveys. The feedback survey indicate that there is a general acceptance by the MUHAS-RedCap community that the tool will improve and benefit the way research is conducted at the Institution.

Conclusion: The resource will prove to be potential for researcher because there is less downtime in developing and testing research databases and online surveillance tools.

Parallel Sessions 7A: Infectious Diseases

134. GeneXpert MTB/Rif assay detects more Mycobacterium tuberculosis on sputum sediments of Pulmonary Tuberculosis suspect cases

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Background: Detection rate of *Mycobacterium tuberculosis* is still a global challenge. About 3 million tuberculosis cases are missed yearly due to use of insensitive smear microscopy and culture on Lowenstein Jensen (LJ) media that takes long to yield results. Detection of *M. tuberculosis* by GeneXpert MTB/Rif assay from fresh sputum of Pulmonary Tuberculosis (PTB) suspect cases is rapid, sensitive and specific. Use of manufacturer's assay protocol to detect *M. tuberculosis* from sediments and fresh sputum of PTB suspect cases has generated contrasting findings with some showing different detection rate.

Aim: To compare GeneXpert MTB/Rif assay detection rate of *M. tuberculosis* using fresh sputum and sediments from PTB suspect cases.

Methods: A cross sectional study was conducted at Kibong'oto infectious Diseases Hospital from August to November 2015. A total of 262 eligible PTB suspect cases were enrolled in the study. Each study participant produced two sputum specimens. One of the fresh sputum was tested on GeneXpert® MTB/RIF assay. The other sputum was decontaminated, centrifuged and inoculated in LJ solid medium as recommended and re-tested on GeneXpert® MTB/Rif using similar protocol. Data were analyzed using SPSS version 20.0. A p value of <0.05 was regarded as statistically significant.

Results: GeneXpert MTB/Rif assay detected more *M. tuberculosis* from sputum sediments 40.1% (105/262) and fresh sputum 37.4% (98/262) compared to culture 32.4% (85/262). The assay had very good detection rate of *M. tuberculosis* in sediments and fresh sputum (AUC >0.86). The sensitivity of the assay was significantly higher in sputum sediments than in fresh sputum from PTB suspect cases (91.8% vs. 85.9%; p=0.03).

Conclusion

GeneXpert MTB/Rif assay detected significant higher number of PTB suspect cases from sediments compared to fresh sputum. We recommend use of sputum sediments for early diagnosis of PTB

135. Trends of ESBL genotypes in humans, animals and environment, North Western Tanzania: Preliminary insights for action

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Catholic University of Health and Allied Sciences

Background: The growing burden of multidrug resistance bacteria across the globe is worrisome due to associated cost, complications and deaths. Limited information exists on circulating genotypes underscoring the genomic approach to understand the evolution of these strains.

Aim: To analyze the trends and impacts of ESBL genotypes circulating in humans, animals and environment, North Western Tanzania.

Methods: We reviewed 6 studies (2 on colonization and 4 on infections) from 2009 to 2016 and unpublished data. Analysis was done by STATA.

Results: The proportions of ESBL isolates colonizing humans and animals were 16.5% (55/334) and 21.7% (130/600) respectively; with predominance of *Escherichia coli*. Age, history of antibiotic use and admission in humans and exotic breed in animals predicted ESBL carriage. The proportions ESBL isolates in hospital associated infections ranged from 29% to 50% and were largely caused by *Klebsiella pneumoniae*, *Escherichia coli* and *Enterobacter* spp. Moreover, ESBL accounted for 57% (40/70) of samples from rivers, soils and sewages. Multiple genotypes were found circulating with predominance of a global clone, *Escherichia coli* ST 131 in humans and ST 617 in animals. Surprisingly, one dog and one pig were also colonized by ST 131. *Klebsiella pneumoniae* ST 14 predominated with unique clustering in hospital wards underscoring focused infection prevention. Over 75% of ESBL isolates expressed blaCTX-M-15 allele, mostly in conjugative IncF and IncY plasmids connoting transmission potential. ESBL associated neonatal sepsis mortality was 19% to 26%; reiterating immediate response to tackle sources.

Conclusion: There are varieties of genotypes carrying CTX-M-15 alleles circulating between humans, animals and environment transmitted horizontally by multiple IncF and IncY plasmids and are associated with adverse disease outcome in humans calling one health genomic approach to understand the evolution of these strains. Correspondence: senijj80@gmail.com; +255 784 593000

136. Using the patients' voice in quality improvement of care and treatment programs in Tanzania

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Background: In collaboration with facility-based and district health management Quality Improvement Teams (QITs), EGPAF introduced the Patient's Voice program to solicit consumer feedback on clinical services in Kilimanjaro, Arusha, Lindi and Tabora.

Aim: Describe patients' perception of health services during the first round of dialogues and interviews at these 25 sites, and describe the effect of using this information in quality improvement programs for 2 of these sites.

Methods: Between 2013-2015, district-level QIT members organized quarterly community dialogues and administered patient satisfaction interviews at 25 high-volume HIV treatment facilities which were used to develop quality improvement projects. For two sites, these dialogues and interviews were repeated three times over 11-19 months.

Results: In the baseline interviews, 440 HIV patients reported that the mean time spent at the facility was 1.9 hours; 19% felt that providers were impolite, 21% reported clinic surroundings were unclean, 16% reported insufficient privacy, and 71% complained about shortage of medicine for opportunistic infections. At the two sites with follow up dialogues and interviews, the facility QIT team used the information to implement several changes: appointment time blocks, additional drug dispensing windows, placement of a clock in staff room to encourage punctuality during meetings and breaks, and management actions to encourage staff politeness to patients. Several changes were seen at follow up (n=127) compared to baseline (n=32). Mean time spent at the facility decreased from 1.9 to 1.1 hour; reports of provider impoliteness, uncleanliness, and insufficient privacy went from 25% to 6%, 25% to 4% and 10% to 2%, respectively. Complaints about shortage of medicine for opportunistic infections decreased from 78% to 48%.

Conclusion: Administration of patient satisfaction surveys and engaging the community in dialogues with health facilities can reveal quality gaps and encourage facilities to identify effective local solutions to address the quality of services

137. Predictive value of Systemic Inflammatory Response Syndrome (SIRS) and clinician gestalt on risk of mortality among children under 5 years presenting at the Emergency Department of Muhimbili National Hospital.

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MUHAS EMD-MNH
MUHAS AND MNH

Introduction: Clinical SIRS criteria and clinician gestalt are among indicators that can be used to define clinical condition of a patient, and assist in planning of proper care. However, predictive values of SIRS and clinician gestalt in assessment of in-ED outcomes have not been studied in most Low-income countries.

Objective: To determine if the severity of illness in children under the age of five with clinical SIRS criteria presenting at Emergency Medicine Department (EMD) of Muhimbili National Hospital (MNH) can be further refined by clinician gestalt to predict in-ED mortality.

Methodology: This was a three-month prospective, descriptive study of consecutive paediatric patients under the age of five years to EMD-MNH and meeting the clinical SIRS criteria. A paper-based questionnaire documented demographics, clinician gestalt, and SIRS criteria on arrival, then EMD diagnosis and disposition upon leaving the ED-MNH. We report descriptive statistics, confidence intervals and statistically significant for in-ED mortality outcomes.

Results: We screened 1350 patients and 305 (22.5%) patients met clinical SIRS criteria at presentation. Mortality rates were 13 (1%) and 6 (1.9%) respectively. Overall, 92 (30.2%) patients, had both clinical SIRS and clinician gestalt of “Severe Illness”, and of these 5 (5.4%)

died in the EMD, while mortality rate in children with SIRS and any other clinician gestalt was found to be 0.4% (1/213) (95% CI 0.82 to 11.79, $p=0.0034$).

Conclusion: In children below age of 5 years presenting at EMD-MNH with clinical SIRS and clinician gestalt of “Severe Illness” on arrival were associated with a significantly higher chance of in-EMD mortality.

138. Profile and outcome of Patients with Severe Sepsis or Septic Shock presenting to Emergency Department at Muhimbili National Hospital, Dar Es Salaam, Tanzania

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Background: The burden of sepsis in the global health system is significant, with very high mortality rates as high as 20% to 60%, even in developed world. However, in most developing countries, including Tanzania, the burden of severe sepsis and septic shock within the emergency care systems has not been characterized.

Objectives: To describe the profile and outcomes of patients with severe sepsis and septic shock presenting to the Emergency Medicine Department (EMD) of Muhimbili National Hospital (MNH).

Methods: This was a prospective, descriptive cohort study of consecutive adult and pediatric patients presenting to EMD-MNH and meeting criteria for severe sepsis and septic shock. Structured case report form (CRF) was used to document demographics, clinical presentation, diagnostic evaluation, treatment, outcome and disposition.

Results: We enrolled 197 patients who met criteria for severe sepsis or septic shock, 111 (56.3%) male, mean age of 32 years (SD 27 years), and 58 (29.4%) were children below 5 years of age. Fever (55.3%) and pallor (39.6%) were the most common clinical features in all age groups. Blood was transfused in some patients (9.6%). All patients were patients (100%) were admitted to the wards. The mortality rate was 47.7% (95% CI 38.1%, 57.4%) with the highest mortality rate group being 31 to 40 years (76.5%).

Conclusion: Most patients with sepsis or septic shock are children below age of five and commonly presents with fever and pallor. The overall mortality rate is very high, with the most vulnerable being adult between 31 and 40 years of age.

Parallel Sessions 7B: Healthy Policy

139. Prevalence of Alcohol and other substances of abuse among injured patients presenting to the emergency department, Muhimbili National Hospital, Dar es Salaam, Tanzania.

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Background: Alcohol and drug use have been shown to have clear link with injuries, in many countries, especially with respect to road traffic injuries. In Sub Saharan Africa, there is very limited data on prevalence of alcohol or drug related injuries with almost no studies done involving objective alcohol or drug testing. Objective: To determine the prevalence of alcohol and drug abuse among injured patients presenting to the Emergency Medicine Department of Muhimbili National Hospital (EMD-MNH) in Dar es Salaam, Tanzania.

Methods: This prospective study enrolled a convenience sample of adult patients (>18 years of age) presenting to the EMD-MNH within 12 hours of injury. Blood Alcohol levels were tested with a breathalyzer and drugs were tested in urine with a 6-panel multi-drug test (RapidCHECK??).

Results: We enrolled 143 patients, and 45% were between 18 and 28 years old. The most frequent mechanism of injury was road traffic accident (74.1%) followed by assault (15.4%). All 143 patients were tested for alcohol, while 122 were also tested for drugs. 67(47%) of patients tested positive for alcohol. 44(36.1%) of the 122 patients tested for drugs, tested positive for drug(s) 29 (26.1%) of injured patients tested positive for both alcohol and drug(s). The most frequently abused drug was Marijuana (62% of the positive drug tests).

Conclusion: The prevalence of alcohol and drug abuse is very high in injured patients presenting to the EMD-MNH. Public health interventions in Tanzania should be aimed at this issue.

140. Barriers to identification and follow-up of pregnant women by community health workers in Morogoro Region, Tanzania

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Background Interest in using CHWs to strengthen health systems globally and in Tanzania continues to grow because CHWs have a strong potential role in supporting health service delivery to underserved communities. Objective To explore views and challenges on the

identification of pregnancy, home visits and referrals as well as assessing the community's acceptance of and demand for the CHWs program

Methods A qualitative study was conducted as a part of an evaluation of maternal and child health programs in Morogoro Region. Data collection was done through focus group discussion with Community Health Workers (CHWs) and Recently Delivered Mothers (RDMs) and thematic analysis was used to analyze data

Findings We found that CHWs visit household to identify pregnant women but they are faced with a number of barriers in identifying and recruiting women as clients. These include traditional belief that a child may be bewitched if people know that a woman is pregnant, Uncertainty that pregnancy would survive, lack of acceptance of young CHWs by older pregnant women; Unreliable transport and poor remuneration of CHWs. The study also found that women have positive perception about CHWs services including education they get about birth preparedness, danger signs and nutrition during their pregnancy. The CHWs services have also improved initiation of first ANC and mothers' knowledge about how to take care of their babies and women see CHWs as a means of receiving referrals to health facilities

Conclusion CHWs program may contribute to improvement of some health indicators such as number of facility delivery and maternal and child mortality. However, a continuous provision of health education to community members on CHWs program is important so as to eliminate poor traditional beliefs and attitudes about the program

141. The potential of task shifting in scaling up services for prevention of mother-to-child transmission of HIV: a time and motion study in Dar es Salaam, Tanzania

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MUHAS

Introduction: Between October 2013 and April 2014, Tanzania started to implement the current World Health Organization (WHO) guidelines for prevention of mother-to-child transmission of HIV (PMTCT), recommending lifelong triple antiretroviral treatment (ART) for all pregnant women living with HIV irrespective of CD4 cell count (Option B+)

Objective: In many African countries, nurses deliver prevention of mother-to-child transmission of HIV (PMTCT) services. According to WHO, many tasks during PMTCT can be shifted from nurses to community health workers (CHW). We aimed to estimate the impact of task shifting on nurses' workload and health system costs in PMTCT and potential for task-shifting on

scaling-up of the WHO PMTCT Option B+ (lifelong antiretroviral treatment for all HIV-infected pregnant women).

Methods: We carried out a time and motion study in Dar es Salaam, Tanzania. We measured nurses' time to accomplish PMTCT activities during antenatal care (ANC) and postnatal care (PNC) visits. We estimated the costs saved due to task-shifting based on the time spent on each task and wages in the Tanzanian health sector, for different compensation rates for CHWs in Tanzania.

Findings: A total of 1,121 PMTCT-related tasks were observed in 179 patients in 26 health facilities over nearly 76 hours of observation. The following proportions of nurse time could be shifted to CHW: 94% during both first and follow-up ANC visits, and 84% during first and 100% during follow-up PNC visits. The PMTCT cost savings due to task-shifting in one visit ranged from US\$ 1.3 to 2.0 (first ANC visit), US\$ 0.4 to 0.6 (ANC follow-up visit), US\$ 0.7 to 1.0 (first PNC visit), and US\$ 0.4 to 0.5 (PNC follow-up visit).

Conclusion: Task-shifting could release nurses from the vast proportion of their current workload delivering PMTCT and lead to substantial health systems cost-savings to support the scale-up of Option B+.

142. Assessing the Laboratory utilization patterns by the clinicians for patients' management at Muhimbili National Hospital.

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Background: Medical laboratory play an important and significant role in diagnosis and treatment of diseases; yet the utility of the results they provide is constantly in question and under utilisation of the laboratory is a growing pandemic in Tanzania. Objective: This study aimed at assessing the laboratory utilization patterns by the clinicians for patients' management in Muhimbili National Hospital.

Methodology: A cross sectional study was conducted at Muhimbili National Hospital; questionnaires were administered to practising clinicians in selected departments.

Results: A total of 322 potentially eligible clinicians were given questionnaires, 244(76%) were retrieved, 78(24%) are yet to be collected. Of these 144(70%) reported to request laboratory tests for their patients by 81-100%; and 35.3% of the results were timely received for patient management. When not timely received 93(47%) treated their patients empirically. Furthermore

65(30.6%) reported to rarely use laboratory results when they differ from their clinical judgement. Other reasons for not using laboratory results were long turn around time 118(42.5%), urgency of the test 101(36.7%) perceived unreliability of the laboratory results 58(27.6%) and machine breakdown and laboratory reagent stock outs 58(27.1%). Specialist followed by registrars had a lower laboratory utilisation pattern compared to residents and interns ($p=0.03$). Majority of the clinicians questioned results from Microbiology 47(21.7%) and parasitology 35(18.4%) laboratories. At a departmental level; Pediatrics, Internal Medicine and Surgery voted microbiology culture results as the most unreliable by 25.8%, 22.9% and 22.2% respectively. $P=0.006$. However laboratory improvement was recommended more for the results turn around time (38.5%), laboratory infrastructure (31.4%) followed by the quality of results submitted (30.1%).

Conclusion: Gaps in the clinical laboratory system were evident. Key recommendations are to enhance the use of laboratory results in patient management by reducing turn around time, improve lab-clinic interaction and also ensure specimen collection and transportation procedures are observed.

143. Profile of existing CHWs in five BRN regions of Tanzania

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Background: Tanzania currently has many CHW programs which engage voluntary community health workers in multiple programs without adequate training and education. This study was conducted to develop a centralized database of CHWs which would provide information on their numbers, educational level and previous trainings for use in developing the new CBH program.

Methodology: The study used existing government functionaries at village and ward level to collect the data using a structured tool on individual CHWs. These were trained in a cascade using a national team to train regional and district trainers and in turn the latter were used to train WEOs and VEOs. SPSS software was used for data analysis.

Results: Findings indicate that about half of existing CHWs were females (51.2%). Over 40% of CHWs were below 35 years of age while just over one third of them fell in age group of 36-45 years. Overall, 38.2% had 2-5 years of working experience. Only 6% of CHWs aged above 45 years had completed form-4 level education whereas about 40% of those aged below 25 years had attained this level. The average number of CHWs per village across the 5 BRN regions was

highest in Simiyu (6) compared to Geita, Mara and Kigoma which had the lowest average (3). Overall, about 80% of existing CHWs received training on more than 4 thematic areas, while only 18% of CHWs reported receiving training on all 8 thematic areas. Majority of the current CHWs are providing services on voluntary basis as only 14% are getting paid for their work.

Conclusions: Although the current CHW programs have equal proportions male and female workers, the majority of existing CHWs will not be eligible for the new government CHW program. It is therefore important for the program to develop a clear transition plan from existing CHWs to the newly trained ones without creating a human resource gap.

144. Medical training in Tanzania: Is it time to it together?

Fredrick Furia

MUHAS

Background: Tanzania has seen major transformation in medical training in the last few decades; these changes are marked with increased number of medical schools both public and private. With this increase there is a prospect of increased number of health care providers which is important in mitigating the challenge for human resources for health (HRH). However, the quantity may not be matching with quality particularly in the absence of nationally agreed competencies and standardized evaluating bodies as is the case of Tanzania. There is therefore a need to have a standardized body for evaluating and certifying health care providers in Tanzania before licensing and allowing them to practice.

Objectives: To describe the state of medical training in Tanzania and propose mechanisms of standardizing training.

Methods: Review of medical training in Tanzania was performed comparing and contrasting with other developing countries and developed countries. Best policies, strategies and practices were identified which may be adopted for improvement of medical training in Tanzania.

Results: Medical training dates back to 1963 when the first 10 students were enrolled in University of East Africa for Bachelor of Medicine & Bachelor of Surgery (MB ChB) and four were awarded the degree in 1968. In the last two decades Tanzania has seen the introduction of new medical training institutions with establishment of one new public medical school under College of Health sciences - University of Dodoma-2007 and five privately owned institutions namely International Medical and Technology University (IMTU)-1997, Kilimanjaro Christian Medical College (KCMC)-1997, Hurubert Kairuki Memorial University -1998, Catholic University of Health Sciences-2003 and St Francis University College of Health and Allied Sciences-2010. Regulation of medical training is currently regulated by Tanzania Commission of

University in collaboration with Tanganyika Medical council; there are no national competencies which are to be met by all medical schools. The two regulating bodies do not have an operational structure for this very important mandate. Therefore each medical school is conducting autonomous training with virtually no regulation. Tanzania is lagging behind when compared to other countries in Africa which have long established regulatory bodies such as HPCSA in South Africa and the West African Health Examination Board respectively.

Conclusion: In Tanzania significant gaps still exist in the capacity for regulating medical training which has significant impact on the quality of services provided and safety of end users of health services.

145. Medical Education and Social Network: The Trend, Pearls and Pitfalls

Said Kilindimo

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Background: Social media significantly affects the way people exchange information. Medical students are also increasingly using the platform to communicate with each other and their educators. In Tanzania, (Pfeiffer et al, 2014) the commonly used sites are Facebook (73%), YouTube (38%) and Twitter (20%).

Aim and Methods: We searched on Tanzanian medical university websites and online databases for the effects of social network on medical education.

Results: While the Prevalence of the use of social media in general population (Pew Research Center, 2014) is highest among young people (82%) compared to adults (49%), in medical school the prevalence is 93.4%, among them 89.3% they use social media for medical educational purposes (Avcı et al. 2015). In residents 97.1% use social media, among them 77% use for medical education (Galiatsatos et al, 2015). Although social media is used widely, the users don't acknowledge the possibility of ethical issues around them. Survey shows 34.7 % of medical students post unprofessional contents (Avcı et al. 2015). In United States (Chretien et al, 2009) 60% of medical students post online unprofessional content (30% related to breach of

patient confidentiality). Although social media becomes potential powerful platform for communication in medical education, the academic institutions lag behind mitigating its unwanted effect. In South Africa 91% of public universities don't have formal social media policies (The conversation Africa, 2016) and none of Tanzanian academic institution has social media guidelines.

Conclusion: While social media provides opportunity for better training platform, it poses threats on Ethics and Professionalism. Medical educators have a role to play shaping on how it should impact the profession by developing teaching innovative strategies and social media guidelines.

146. Awareness and Perception on Quality marks and the use of the mark in purchasing food items.

Joyline Asseri Ndanshau

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Background: The abrupt increase of small and medium scale producers involved in the manufacturing of processed foods has been a big challenge in controlling the quality and safety of the foods produced. Food quality and safety is very important as it protects health of consumers from microbiological, physical and chemical hazards. The quality labels can communicate the quality and safety of the food to the consumers, in order to make proper decision during purchasing. There are many types of quality marks, such marks include tbs, approved by tbs, KEBS, ISO, HALAL and many others. **Objective:** The study aimed at determining the level of awareness and perceptions on quality marks and use of the mark in purchasing food items.

Methods: Analytical cross sectional study was conducted. Systematic sampling was used to get 30 supermarkets; people aged 18 years and above were selected conveniently to get 385 respondents. SPSS version 15 was used in analysis, as well as chi-square test in determining statistical significance.

Results: Out of 385 respondents 5.5% claimed not to be informed at all about quality marks. Extent of being informed was associated with level of education, as 9.4% claimed to be very much informed and 82.2% moderately informed had college or university education. About 93.8% and 41% of respondents were aware of Tanzania National quality marks (tbs) and approved by tbs respectively. 97.4% perceived quality marks to be of high importance but only 51.2% check for it during purchasing.

147. The role of occupational health and safety in climate change mitigation: A Case of agricultural sector

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Background: There is strong evidence that climate change (CC) has the potential to affect human health in several direct and indirect ways. However, the information regarding extent at which CC may influence Occupational Health and safety (OHS) practices is still limited.

Objectives: Goals of this study were to (1) provide an overview of OHS hazards that can adversely be affected by CC (2) identify mitigation measures that may be termed as OHS practices in the agricultural sector, and (3) identify the priority research topics pertinent to Tanzania, in terms of OHS and CC knowledge needs.

Methods: We conducted review of both published and grey literature between 2000 and 2015 to identify impacts of CC on OHS particularly in agricultural sector. Climate change mitigation measures for agricultural sector were reviewed and classified weather could be termed as OHS practice or not. Research gaps pertaining CC and OHS in Tanzania were identified.

Results: Identified categories of hazards potentially have impacts on OHS and impacted by CC were; extreme weather events, heat waves, ultraviolet radiation, air pollutants, and communicable vector-borne and zoonotic diseases. Climate change mitigation measures identified as OHS practices were improved energy efficiency; replacing fossil fuel use; pesticide management, improved rice cultivation techniques; consumption of green products and recycling of bio-solids. Research gaps identified were acquisition of knowledge on climate related OHS hazards and target populations, epidemiological surveillance of pests and diseases, piloting OHS mitigation measures and increasing resilience of effected community.

Conclusion: The study identified priority OHS hazards affected by CC and mitigation measures classified as OHS practices due to their health co-benefits. However, studies in this area are still limited and further researches are needed.

148. Role of Information Professionals in Enhancing Awareness Creation Towards Obstetric Fistula Treatment in Rural Areas

Onesta C. Rwihura

This paper tries to sensitise information professionals to create awareness on treatment of obstetric Fistula in rural areas, Tanzania. The rural community, particularly girls and women in Tanzania lack access to information on the treatment of obstetric Fistula, that is why obstetric Fistula victims in rural areas face many problems such as social isolation, stigmatisation, humiliation, abandoned by their husbands and their relatives. Due to these problems, obstetric survivors feel guilty and loneliness, they lose living hope and become disappointed. We, the information professionals we have to disseminate obstetric fistula information in rural areas in order to make them be aware on the treatment of this problem. Also this will help the disadvantaged group to regain their dignity. Non- probability purposive sampling used to identify 64 respondents in the four surveyed villages from Mpwapwa District. The villages were selected from two wards of Mpwapwa District. Twelve officials (medical doctors and midwives) also participated in the study. Data were collected through documentary reviews, in- depth interviews, questionnaires, theatre performances, focus group discussions and observation. The study revealed that the major problem which cause obstetric fistula is prolonged labour/obstructed labour which is influenced by multiple factors such as delivery delay and/or not delivering at the hospital, lack of autonomy in making the decision to go to a health facility, early child bearing, small pelvic, local beliefs and inadequate of education about reproductive health. Also the study reveals that the problem can be cured but the problem is that most of rural community members lack information concerning this problem. The study therefore concluded that we, the information professionals we have to play our role of creating awareness by disseminating obstetric Fistula information in rural areas, Tanzania.

149. Cord blood anti-PfSEA-1 and protection from severe malaria in infants

Rugabela Kabyemela

MUHAS

Background: In holoendemic areas for malaria, children suffer the most from malaria, particularly after six months of age. Both the relative resistance to infection and severe malarial disease (SM) expressed by neonates and young infants, as well as the hypothesis that this resistance is mediated by maternally derived IgG has been recognized for decades. Despite these early observations, the targets of protective, maternally derived cord blood antibodies remain elusive.

Aim: We sought to identify maternally derived antibodies and their specific targets for protection of malaria in their offspring during early infancy.

Methods: We enrolled n=647 maternal-child pairs at delivery in a *P. falciparum* holoendemic region of Muheza, Tanzania. We obtained maternal peripheral, placental and cord blood plasma and measured anti-*Plasmodium falciparum* Schizont Egress Antigen -1 (PfSEA-1) IgG antibody levels in each compartment. We assess the impact of cord blood anti-PfSEA-1 on subsequent experience of malaria parasitemia and disease in these children. In subsequent studies we extended our human observation studies in animal model whereby we vaccinated female mice with *Plasmodium berghei* SEA-1 or control, bred them, and challenged their offspring with *P. berghei* ANKA infected RBCs.

Results: Maternally derived antibodies to Pf SEA-1 cross the placenta and were associated with a 51% decrease in the risk of severe malaria in infants. In animal studies we demonstrate that pups born to control dams had 8.4 fold higher parasitemia on day 9 post challenge compared to pups born to the PbSEA-1 vaccinated dams. In addition, these pups had 1.67 fold longer median survival times compared to pups born to control dams.

Conclusion: These results demonstrate that maternally derived antibodies to Pf/PbSEA-1 cross the placenta and confer protection against severe malaria. These results provide first ever conclusive evidence for the decades old hypothesis that maternal anti-malarial antibodies protect infants, and suggest that vaccination of women with PfSEA-1 prior to pregnancy may afford a survival advantage to their infants.

150. The Burden and Clinical Characteristics of Patients Admitted at MNH Medical wards with Unknown HIV Infection

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Background: The Since 2005 WHO has promoted provision of anti retroviral drugs (ART) to HIV infected patients. In tandem with that the Tanzania Government put in place a policy of provider initiated HIV testing and counseling (PITC) for patients attending health care facilities (HCF); however most HCF facilities are not implementing the policy. Hence most hospitalized patients do not know their HIV status. Consequently, missed opportunities for HIV screening remain high.

Objectives: To determine the proportion and clinical characteristics of patients admitted in Muhimbili National Hospital (MNH) Medical wards with unknown HIV infection.

Methods: Hospital based cross sectional study of patients admitted in MNH medical wards with unknown HIV status. Patients were interviewed, clinically examined, tested for HIV and CD4 counts determined; in hospital outcomes were recorded.

Results: 520/610 (85.2%) of patients admitted during the study period had unknown HIV status. After PITC, 505/520 (97.1%) consented to HIV testing; 30/505 (5.9%) tested HIV positive. The mean CD4 count for the 30 newly diagnosed HIV infected patients, was 247 cells/mm³ & 66.7% had WHO stage IV disease. HIV infection was significantly associated with fever (AOR=4), oral candidiasis (AOR=44), generalized lymphadenopathy (AOR=10) and

altered mental status (AOR=14). Tuberculosis was found in 16.7% of newly diagnosed HIV infected patients. In hospital mortality was 13.3% for HIV negative and 26.7% among newly diagnosed HIV patients (p=0.041)

Conclusions: Over 85% of patients admitted into MNH medical wards had unknown HIV status; 97% consented to HIV testing; over 66% newly diagnosed with HIV infection required ART. Hospital mortality was high among those with stage IV disease. Impediments to implementation of PITC policy should be identified and removed to enhance diagnosis of HIV in HCF.

151. Awareness of Hiv/Aids Ocular Manifestations Among People Living With HIV/AIDS Attending HIV Clinic at Muhimbili National Hospital october to November 2015.

Frank Patrick, Celina Mhina, Anna J. Sanyiswa

MUHAS

BACKGROUND; Approximately 70% of people living with HIV/AIDS are suspected to develop visual impairment at some point during the course of their illness. Blindness which is the feared complication is said to occur in 10% to 20% due to cytomegalovirus infection among people living with HIV/AIDS.⁹ Reports show that awareness on ocular manifestations of HIV/AIDS among different groups of people is low.^{20,22}

OBJECTIVE; To assess the awareness of HIV ocular manifestations among people living with HIV/AIDS attending HIV clinic at Muhimbili National Hospital.

METHODOLOGY; This was hospital based cross section study, recruited 200 people who attended HIV/AIDS clinic at Muhimbili National Hospital between October to November 2015. Convenient sampling method was used.

RESULTS; Less than half (41%) of the respondents agree that HIV/AIDS can affect eyes. Majority were aware that HIV/AIDS can be associated with swollen eyelid and discharge from the eyes, gritty sensation in the eyes, itching and burning sensation in the eyes, painful eyes and visual loss or blindness. Nearly 50% of the respondents got the information about ocular manifestations of HIV/AIDS from self-experience and only 30.5% reported to have heard from the health workers. Fifty six percent of the respondents reported that it is very important to have regular eye checkup.

CONCLUSION; There is relatively higher awareness on HIV/AIDS ocular manifestation among people living with HIV/AIDS. Unfortunately the information about ocular manifestation of HIV/AIDS does not come from the health workers and also there is inadequate information as well. Hence emphasis should be put on health workers to give information on ocular manifestations to HIV/AIDS patients.

152. The changing pattern of ano-rectal cancer, squamous cell carcinoma of the eye, and Hodgkin's lymphoma as non-AIDS-defining cancers, by HIV status, in Tanzania over 11 years (2002-2012): a retrospective case-report study

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Background: In Tanzania, 5.1% of adults aged 15-49 are infected with HIV. While rates of HIV-related malignancies have declined globally with antiretroviral therapy (ART), including Tanzania, rates of non-AIDS-defining cancers (NADCs) are believed to have increased.

Objective: To determine trends of three NADCs in Tanzania: ano-rectal cancer, squamous cell carcinoma of the eye, and Hodgkin's lymphoma.

Methodology: This study was conducted at the Ocean Road Cancer Institute (ORCI) in Dar es Salaam. All medical records of patients diagnosed with ano-rectal cancer, squamous cell carcinoma of the eye, and Hodgkin's lymphoma between 2002 and 2012 were reviewed regarding HIV status, cancer clinical characteristics and management. Analysis was conducted to determine trends and proportions in these three NADCs and patient characteristics.

Results: We identified 980 NADCs. The relative proportion of these three NADCs at ORCI out of all cancers treated increased from 2.37% in 2002 to a peak of 4.34% in 2009. The prevalence of HIV in patients diagnosed with these NADCs also increased—from 6.67% in 2002 to 20.87% in 2010—and 85% of squamous cell carcinoma of the eye cancer patients with a reported HIV status were HIV-positive.

Conclusion: The frequency and proportions of these three NADCs in Tanzania have increased over the past 11 years, as has the prevalence of HIV positivity amongst these NADC patients. The current and possibly increasing burden of NADCs in Tanzania and other low- and middle-income countries with high HIV rates should be a focus for future cancer prevention and control and HIV therapy programs.

153. Causes of Admission Among HIV-Infected Patients On Art at Muhimbili National Hospital Medical Wards, Dar Es Salaam.

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Association of Physicians Tanzania
Internal Medicine, MUHAS

Background: The introduction and access of anti-retroviral therapy (ART) for HIV/AIDS treatment has led to substantial reduction of morbidity and mortality among people with HIV. However, HIV/AIDS still constitutes a major cause of hospital admission and mortality in sub-Saharan African countries. Identification of causes of morbidity and mortality among patients on ART in Tanzania has not been well documented and therefore we aimed at determining the causes of morbidity and hospital outcome among patients on ART, at MNH medical wards.

Methods: We collected socio-demographic characteristics, clinical history and ART treatment history from HIV infected patients on ART admitted at MNH medical wards. We also documented physical examination findings, WHO clinical stage, CD4 cell counts at admission and hospital outcome. The discharge diagnoses were based on clinical findings and investigations. The cause of in-hospital mortality was ascertained by verbal autopsy. Univariate and multivariate logistic regression were used to determine the relationship between hospital outcome and associated factors.

Results: We enrolled 455 patients on ART over seven months who accounted for 494 admissions. The most frequent diagnoses at admission were anemia (77%), electrolyte imbalance (44.4%), TB (27.9%), bacterial pneumonia (26.4%), ART nephrotoxicity (16.3%), hypertension (16.3%), bacterial meningitis (13%), cryptococcal meningitis (11.4%), Malaria (11.4%), chronic kidney disease (8.1%), diabetes mellitus (8.1%), esophageal candidiasis (7.9%), urinary tract infections (5.9%), cerebral toxoplasmosis (4.4%), and Kaposi Sarcoma (4.0%). Over 73% (333/455) of study subjects had WHO clinical stage IV disease and 53.2% had CD4 count < 200 cells/ml. Over thirty nine percent (180/455) died at admission mainly due to TB (30.6%) and Cryptococcal meningitis (17.2%). There was low use of OI prophylaxis- INH (0.4%), Fluconazole (4.2%) and Cotrimoxazole (34%).

Conclusion: Infectious and non-infectious conditions were common causes of hospitalization among admitted patients on ART. There was a high in-hospital mortality attributed mainly to TB and Cryptococcal meningitis due to advanced HIV disease presentation.

Poster Presentations

1. Population Prevalence of Sickel Cell Trait and its demographic and clinical characteristics in Tanzania

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Background: Sickel cell disease is a genetic blood disorder affecting about 5% of the world population with highest prevalence among black population and those living in Sub Saharan Africa. The presence of sickel cell trait (SCT) poses a great chance of transmitting the sickel cell gene to the generations. Individuals with genetic blood disorders have also been reported to have high chance of developing renal failure in their lifetime. In Tanzania, certain areas and populations have been reported to have high frequency of sickel cell gene leading to high rate of affected newborns. With the high burden of disease and limited number of researches done, there is a need to do mapping of prevalence of SCT in Tanzania to undertstand its pattern that will potentially lead to designing and implementing approapriate interventions.

Aim: The objective is to map the prevalence of SCT among Voluntary Non Remunerated Blood Donors (VNRBD) and Family Replacement Donors (FRD) attending National Blood Transusion Services (NBTS) activities in Dar es salaam, Tanzania. The research will also analyse the demographic, clinical and laboratory characteristics of those carrying SCT.

Methods: Analytical cross sectional method will be used to assess a total of 896 individuals. A structured pretested questionnaire will be used to capture all the determinants. Informed consent will be obtained prior to interviews and blood sample collection. Analysis will be done by STATA Statistical Software package. Point Prevalence, Odds Ratio and Prevalence Ratio will be used to estimate the burden of disease. Continuous and categorical variables will be summarized in means and median and proportion and percentages respectively.

Results: Results will be shared with NBTS and other relevant stakeholders.

Conclusion: This project will help in development of strategies in health resource allocation and quality improvement in blood donation services and clinical care provision among individuals with SCD and SCT.

2. Addressing Community Violence through Training: Rukajuu Beekeeping Pilot Intervention in Dar Es Salaam, Tanzania

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MUHAS
Johns Hopkins University
Tanzania Forest Services Agency
Development Pioneer Consultants

Background: Those most at risk for homicide death in Dar es Salaam are: male Tanzanians, aged 20-35 years, lacking employment/education and expected to participate in the material support of relatives. Lack of employment/occupational opportunities is the factor most amenable to intervention.

Aim: The objective of this research is to gain insight into interventions that could improve income generation for at-risk youth.

Methods: This pilot study used a pre-test post-test design with four interventions: i) Introduction + Health training (2 sessions); ii) Introduction + Health + Entrepreneurship training (6 sessions); iii) Introduction + Health + Beekeeping training (6 sessions); iv) Introduction + Health + Beekeeping + Entrepreneurship training (10 sessions). The Entrepreneurship methodology was the Entertainment-Education production RukaJuu by the youth media platform Femina HIP.. Intervention began April 2015 to be completed within one year; post intervention data collected 3, 6 and 12 months after the last session.

Results: From 243 mapped camp in DSM, 12 fit eligibility requirements. We found it feasible to accommodate 4 camps for a total of 56 participants, ages 16 - 39 (mean 22). Each group participated in one of the four training combinations. Theory sessions were taught on MUHAS campus and fieldwork was conducted at the government forest at Kongowe in Kibaha District. Implementation of the ten session intervention took longer than planned due to: national elections when youth were not invited into government forests, and bee occupancy rates less than expected. The human respondents have been cooperative; attendance to all sessions has averaged 95%. One respondent from Group 1 was lost when he was killed for stealing a lady's handbag. Collaborators including MUHAS, Tanzania Forest Services Agency, Femina have been supportive.

Conclusion: At risk youth are willing and able to attend an intervention over one year. The beekeeping groups would be more sustainable if they were using land nearby and freely accessible to them.

3. Assessment of Uterotonic Activity of Crude Extracts of *Pyrenacantha Kaurabassana* (Icacinaeae) Root Tuber Using Uterine Muscles from Albino Mice.

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Background: About 48 percent of pregnant mothers in Tanzania give at home, the proportion being 51.9% in Dodoma region. A large proportion of home deliveries are attended by traditional birth attendants some of them using herbal remedies to aid child bearing. *Pyrenacantha kaurabassana* Bail, (Icacinaeae) is found in central and eastern Africa, growing up to 5 kg root tubers is used as an abortifacient by some societies in central Tanzania. The presence of this Ethnobotanical practice suggests the possible uterotonic activity of the plant, the data about which have yet been reported in the open scientific literature.

Aim: The study aimed at determining the uterotonic activity of water, methanolic and chloroform crude extracts of *P. kaurabassana* (Icacinaeae) root tubers.

Method: Sequential extraction was employed to obtain chloroform, methanolic and water crude extracts. A rotor evaporator and freeze drier were used to obtain dried extracts for carrying out further experiments. Testing for uterotonicity is ongoing, whereby female non-pregnant albino mice are first brought to oestrus using Ethyloestradiol at an oral dose of 1 mg/ml two days before they are killed for obtaining the uterus. Thereafter, about 2 cm longitudinal strips of mices' uterine smooth muscles are used to determine the uterotonic potential of the extracts using a Kymograph. The amplitudes generated by the crude extracts on the Kymograph will be compared to those of Oxytocin is being used as a positive control.

Results: The results of this study will be presented during the conference.

4. Preparedness among Nurses on Reporting Adverse Drug Reaction in Public and Private Hospitals in Ilala District, Dar Es Salaam.

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Background Under-reporting of adverse drug reactions (ADRs) remains to be a challenge in ensuring that the drugs regulatory authorities receive comprehensive and good quality information regarding the adverse drug events occurring in the population. Nurses are known to have more contact frequencies with patients in day to day care among healthcare personnel; towards having improved reporting practices of ADRs, the involvement of nurses in the process is of vital importance. However, their preparedness in proper reporting of the ADRs has not yet been studied in Tanzania.

Aim: To determine the level of preparedness among nurses in public and private hospitals on reporting adverse drug reaction towards improving patient care and safety in relation to the use of medicines Methods A cross sectional study involving 384 nurses from public and private hospitals is being conducted. Questionnaires are being given to nurses to assess their preparedness about reporting ADRs. Statistical package for Social Science (SPSS) version 20 will be used for data analysis. Comparison among two cases will be done as well as on the factors associated with any differences in proportions to be observed using appropriate significance tests.

Results Data collection and analysis is ongoing, the results will be presented during the conference

5. Assessment of the Quality and Safety of Detergent Powders Circulating in Kinondoni District, Dar es Salaam.

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Background: Skin rashes associated with the use of some detergent powders especially during laundry is a common experience. The physicochemical properties of the detergents determine their efficacy as well as safety patterns to the end users. Moreover, there is no available data in

the open literature regarding the prevalence of skin irritation among people who use these products.

Aims: This study aimed at determining the proportion of skin rashes encounters among users of detergent powders. Moreover, the study purposed to assess the quality parameters related to observed skin conditions.

Methods: A survey was conducted among 384 residents from 10 wards in Kinondoni district, Dar es Salaam to assess the present and past encounters of skin which could be brought about by the use of detergent powders. Laboratory assessment was carried out to determine the pH of the 1% detergent powder solutions in distilled water as described by the Tanzania bureau of Standards guidelines. Results About 34% (130/384) of the respondents reported Product B from Manufacturer B to cause them skin rashes upon using the product in hand washing the clothes. Other products were also reported for the same behavior but in a lesser proportion. Preliminary laboratory testing showed product B to have pH values above the prescribed range by the TBS guidelines.

Conclusion: Proper quality and safety monitoring of the powdered detergents should be kept in place by the relevant authorities. More public awareness should be created to enable the users to ensure proper usage the products.

6. Thin Layer Chromatographic screening for Diethylene Glycol in Toothpaste Brands Available in the Dar es Salaam Market.

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Background: Human intake of Diethylene Glycol (DEG) is associated with the risks of kidney, liver, brain and other organ damages. Toothpaste manufacturing employs the use of glycerin as a wetting agent providing the pasty texture among other uses. Due to its relatively low cost, some manufacturers tend to use DEG in place of Glycerin to attain the same goals with maximized margins of profit. The market of tooth paste in Dar es Salaam is broad, involving both formal and informal outlets. This poses a concern on the prevailing quality and safety of these products to the users.

Aim: To screen for the presence of Diethylene glycol in toothpaste brands available in the Dar es Salaam market.

Method: Purposeful sampling was used to collect three samples from three different batches of each brand available in the Dar es Salaam market. Properly prepared sample solutions were applied on Silica gel plates at 50 μ L, including standard DEG solution as a positive control. Identification was carried out through Rf values comparison between sample and standard spots on plates dipped in a freshly prepared Potassium permanganate solution as a visualizing agent.

Results: Preliminary results shows that 9.5% (4/42) of the screened samples tested positive for DEG. Majority of these samples were imports sold by street vendors near big markets. The screening is ongoing, further results will be presented during the conference.

Conclusion: Preliminary findings suggest the need for improvements in the control measures for quality and safety of toothpaste available in the market.

7. Bioactivity of crude extracts of Ascomycetes isolated from Tanzanian traditionally fermented milk, Mtindi

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Background: Fermented milk has previously been reported to have potential in treating several health conditions or inhibiting pathogens. In an attempt to find potential functional foods in Tanzania, this study was conducted to assess bioactivity of crude extracts from Ascomycetes strains.

Methods: Lethality test of the extracts was determined using *Artemia salina naupalii* in a Brine Shrimp Test (BST). Probit analysis was to determine concentration of extract that killed 50% of the larvae (LC₅₀ in µg/ml). Antimicrobial activity was determined by using micro-dilution techniques and assessed as Minimum inhibitory concentrations (MIC) as up to 0.5 mg/ml was regarded as strong inhibitors, 0.6mg/ml - 1.5mg/ml as moderate inhibitors and above 1.6mg/ml weak inhibitors.

Results: LC₅₀ ranged from 89.7µg/ml to over 240 µg/ml. Extracts of *C. tropicalis* exhibited strong antibacterial activity against *S. aureus*, *P. aureginosa* and *V. cholera* (MIC, 0.1653mg/ml) on each account. Extracts of *C. tropicalis*, *C. pararugosa* (2), *P. kudriavzevii*, *I. orientalis*, *Cl. lusitaniae*, *G. geotrichum* (1) and *P. guilliermondii* (1) exhibited strong to moderate antifungal activity against *Cryptococcus neoformans* (0.16– 1.25 mg/ml). The same extracts exhibited moderate antibacterial activity against *M. smegmatis* ATCC 14468 (1.25mg/ml).

Conclusion: Yeasts found in *mtindi* produce bioactive metabolites potential for further exploitation of nutraceuticals for treatment of certain diarrhea or fungal infections and possibly tuberculosis.

8. Less than 3 doses of the HPV vaccine review of efficacy against virological and disease end points

Mamsau Ngoma

The World Health Organization (WHO) recommended two doses of the Human Papillomavirus (HPV) vaccine for girls below 15 years on the basis of the immune-bridging studies demonstrating non-inferior immune response of two doses in the adolescent girls compared to three doses in the young adult women in whom the efficacy against disease is established. The biological nature of the antigens (virus-like particles) constituting the HPV vaccine is responsible for the vigorous antibody response that may make the third dose redundant. The protection offered by two doses has been demonstrated in non-randomized clinical trials to be comparable to that offered by three doses against incident and persistent infections of vaccine targeted HPV types. However, results emerging from the ecological and nested case-control studies embedded in the population based screening programs of different countries indicate reduced efficacy of two doses against virological and disease end points. Some recent studies observed the protective effect of single dose of the vaccine against incident and persistent infections of the vaccine targeted HPV types to be similar to three doses in spite of immunological inferiority. The sample size, duration of follow-ups and number of events were limited in these studies. Longer follow ups of the less than three doses cohorts in the ongoing studies as well as appropriately designed and ethically justifiable randomized studies are needed to establish the protection offered by the alternative schedules at least beyond 10 years of vaccination.

9. Awareness of Diabetic Eye Diseases Among the Diabetic Patients Attending the Diabetic Clinic at Muhimbili National Hospital

Angelo Peterson

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BACKGROUND;

Diabetes affects many organs in the body but commonly causes cardiovascular, renal, feet and eye complications. There are many eye complications due to diabetes. However the most serious ones are diabetic retinopathy, cataract and glaucoma. Diabetic retinopathy is the leading cause of blindness among diabetic patients and it affects people in their working age. Reports show that awareness of diabetic eye diseases is high among diabetic patients. It is important for patients to be aware of these diabetic eye complications so they may take steps to go for screening and treatment whenever they are found to have these complications in order to prevent blindness.

OBJECTIVE.To assess awareness of diabetic eye diseases among diabetic patients attending the diabetic clinic at Muhimbili National Hospital.

Methodology

This was a descriptive-cross-sectional study conducted at Muhimbili National Hospital diabetic clinic. Data were analyzed using statistical package for social science version 20(SPSS) software

Results.

A total of 352 diabetic patients were recruited for the study and all were included in the analysis. Female were 196 (55.7%). Majority of respondents had completed primary education 181(51.4%). Most patients 301(85.5%) were aware of Diabetic Eye Diseases. Among the diabetic eye diseases, 58.8% of the respondents were aware of diabetic retinopathy followed by glaucoma(51.5%), cataract (42.2%) and refractive error (32.9%). Being aware of Diabetic Eye Diseases was associated with the level of education of the patient (P-value=0.011) and duration of diabetes (P-value =0.04).It was however not associated with age and gender.

Conclusion and recommendations

The level of diabetic eye diseases awareness among diabetic patients attending diabetic clinic at Muhimbili National Hospital is high. However further studies are recommended to find out whether diabetic patients attend for screening of Diabetic Eye Diseases.

10. Assessment of Antitrypanosomal Activity of Carica Papaya Root methanolic Crude Extracts against Trypanosoma brucei.

Sebastian Peter, Nelson Masota, Joseph Sempombe, Veronica Mugoyela

Department of Medicinal Chemistry, School of Pharmacy, Muhimbili University of Health and Allied Sciences

Background: Human African trypanosomiasis is a vector-borne parasitic disease which is caused by Trypanosoma brucei gambiense in E. Africa. HAT is transmitted through bites of tse-tse flies infected with the pathogenic parasite. Management of the disease is limited to old, and less effective drugs namely pentamidine, suramin, melarsoprol and eflornithine. However, all are associated with a certain level of toxicity. There is a need to search alternative medicines from

natural products. Studies on the crude extracts of *C.papaya* leaves demonstrated antitrypanosomal activities, which prompts the search for similar activities from other parts of the plant.

Aim: This study aims at assessing the acute toxicity of methanolic crude extracts from *C. papaya* roots and hence screening for antitrypanosomal activity against *T. brucei*.

Methods: Maceration, followed by concentration using a rotor evaporator were employed to obtain dried methanolic extracts from *C.papaya* roots. Acute toxicity was determined by oral administration of up to 10,000 mg/kg of the extracts to the mice. To determine antitrypanosomal activity; albino mice were infected with *T.b.brucei* and up to 5000mg/Kg solutions of crude methanolic extracts in distilled water were administered per oral once a day to the infected mice. Diminazineaceturate was used as a positive control and the level of parasitemia was recorded 24 hourly.

Results: Acute toxicity studies showed that a dose of 10,000 mg/kg killed 4 out of 5 mice three days post administration, where by a dose of up to 5,000 mg/kg was well tolerated. Both the test and negative control groups of mice died on the third to fourth day after start of the treatments following a progressive rise in the level of parasitemia.

Conclusion: The study indicated the absence of antitrypanosomal activity in the crude extracts of roots of *C.papaya* apart from a similar activity being reported in the leaves.

11. HPTLC Densitometric screening for Senna Leaves and Sibutramine in Herbal Slimming products available in the Dares Salaam Market.

Beatrice Samwel, Nelson Masota, Vicky Manyanga

Department of Medicinal Chemistry, School of Pharmacy, Muhimbili University of Health and Allied Sciences

Background: The rise in obesity, overweight and fat phobia has attracted markets for synthetic or natural slimming products. In Tanzania, regulation of herbal medicines is still a challenge. Senna leaves are extensively used in the majority of the herbal slimming products. However, their relatively high cost and limited availability makes them prone to adulterations and fortification.

Aims: To screen for the presence of Senna in herbal slimming products circulating in the Dar es Salaam market, and determining presence of sibutramine, a common synthetic adulterant in slimming products.

Methods: Purposeful sampling was used to obtain 14 products with and without label claims for the presence of Senna leaves as one of the ingredients. Screening for Senna in the sample for was carried out using an adopted HPTLC densitometric method. Comparisons were made between the TLC profiles of the screened samples and that of standard Senna leaves. Screening for sibutramine carried out using the HPTLC densitometric method by UV spectrum comparison with available in literature.

Results: The TLC profiles of 2 out of 7 herbal slimming products labeled to contain Senna did not match with that of the standard Senna. Moreover, among those not labeled to contain Senna seven samples gave positive results for Senna while 1 sample tested negative.

Conclusion: Preliminary results from this study suggested that slimming products circulating in the Dar es Salaam market could be adulterated. Stringent regulations should be put in place to emphasize proper labelling of these products as well as limiting adulteration. Screening for Sibutramine is ongoing, the results of which will be presented during the conference.

12. Safety of the no-flip technique and spontaneous detachment for ShangRing circumcision

Quentin Awori
EngenderHealth

Background: Use of medical devices for voluntary medical male circumcision (VMMC) can offer several advantages. The ShangRing, a disposable single-use circumcision device, is simple to use, safe, and well-accepted in males 13 years old and above. We evaluated the safety, effectiveness, and acceptability of circumcision in males 10 years and above using a modified “no-flip” ShangRing technique, in addition to allowing spontaneous detachment of the device.

Methods: We enrolled men and boys seeking VMMC at two sites in Kenya. Participants were randomised to standard ShangRing removal seven days after circumcision vs. spontaneous device detachment. Weekly follow-up visits included evaluation of the degree of detachment if the ring was still in place, occurrence of adverse effects (AEs), and wound healing. Participants in the spontaneous detachment group could request device removal at any point during follow-up.

Results: 230 men and boys underwent ShangRing circumcision using the no-flip technique; 114 and 116 were randomised to the seven-day and spontaneous detachment groups, respectively. Mean ages in the two groups were 17.4 and 19.0 years, respectively. Mean circumcision times between the groups were similar (7.3 ± 2.5 vs 7.0 ± 2.6 ; $p=0.4$). Six (5.2%) and two (1.7%) moderate AEs were reported in the seven-day and spontaneous detachment groups, respectively, and were similar ($p=0.17$); there were no severe AEs. 84(72.4%) participants in the spontaneous detachment group wore the ring until it fell off; the remainder requested earlier removal. Satisfaction with cosmetic results was high and similar in both groups—98.9% and 96.0% ($p=0.3$).

Conclusions: These results suggest the safety, acceptability, and effectiveness of the “no-flip” technique in males 10 years old and above. Spontaneous detachment of the ring was safe and effective and was acceptable to a majority of men and boys. Use of the ShangRing as a single visit may significantly reduce the burden of service provision at health facilities.

13. Vacuum Assisted Vaginal Delivery: Incidence, Maternal and Fetal Outcomes in Muhimbili National Hospital, Dar Es Salaam, Tanzania.

Background: Vacuum assisted vaginal delivery is defined as vaginal delivery accomplished by vacuum extractor after creating a vacuum between the vacuum cup and the fetal scalp. It is commonly used to expedite birth for the benefit of mother and the baby.

Objective: This study was done to describe incidence, maternal and fetal outcomes from vacuum assisted vaginal deliveries in Muhimbili National Hospital, Dar es Salam, Tanzania.

Methodology: A retrospective descriptive study was conducted in MNH, DSM, Tanzania. Vacuum assisted vaginal deliveries from January 2012 to December 2014 meeting inclusion criteria were included. Data was collected using a check list and SPSS data base program version 20 was used for analysis. Data collection was done for a period of 3 months between September to December 2015. Data was summarized and presented using frequencies, percentages and tables.

Result: There were 23,801. Among them 231(0.97%) were vacuum assisted vaginal deliveries and only 211(91.34%) used for documentary review. Women varied with minimum and maximum ages of 17 and 45 respectively, the mean age is $(27.10 \pm 6.05 \text{ std-deviations})$.

Higher proportion of women who had Vacuum assisted vaginal delivery suffered perineal tears and most 72 (34.1%) of them were first degree tears and second degree tears 22(10.4%) and (24.6%) episiotomy. Other maternal outcomes were postpartum haemorrhage (13.3%), vaginal laceration (6.6%) and cervical tear (2.4%). VAVD which occurred in 2012 to 2014, 29(13.7%) were done to fresh still birth. So only 182(86.3%) were counted for fetal outcomes due to VAVD, 43(23.6%) had lower Apgar score and 46(25.3%) were admitted to Neonatal intensive care unit. Prolonged second stage of labour was the most common indication for vacuum assisted delivery with the rate of 84(39.81%).

Conclusion: Use is very low

This study reported fewer and non severe maternal and fetal outcomes after vacuum assisted vaginal delivery.

14. In Vitro Dissolution Study of Four Selected Albendazole Brand Equivalent Tablets Available in Dar Es Salaam

Ndimbwelu Bukuku, Innocent Daniel, Nelson Masota, Eliangiringa Kaale, Veronica Mugoyela

Department of Medicinal Chemistry, School of Pharmacy, Muhimbili University of Health and Allied Sciences

Background: The release of a required amount of an active pharmaceutical ingredient from a solid dosage form is of great importance in ensuring required therapeutic outcomes. Drug release to a large extent depends on the nature of the ingredients and the formulation process. Basing on the differences in costs and levels of technological development among manufacturers, variations

in drug release profiles are inevitable. Regulatory authorities require the manufacturers of brand equivalent products to conduct comparative dissolution studies to provide a proof of the suitability of the drug release profile compared to the innovator's product.

Previous studies have shown that despite that most drug products meet pharmacopoeia dissolution criteria, some brand equivalents differed in their dissolution profiles when comparing with their innovator's counterparts, this questions the interchangeability between them or even among brand equivalents.

Aim: This study aims at determining if there are significance differences in the In-vitro bioequivalence profiles between the innovator's Albendazole tablets and three selected Albendazole tablets generic available in the Tanzanian market.

Method: Dissolution profiles of innovator's and selected brand equivalent Albendazole tablets will be obtained over a period of 120 minutes. The USP apparatus 2 (paddle) rotated at 50 rpm will be used, the runs being conducted at the pH values of 1.2, 4.5 and 6.8 for each product. same Comparisons will be made on the amount of drug released in a given duration of time among the innovator's and the brand equivalent products.

Results: The study is ongoing, results of which will be presented during the conference in June, 2016

15. Risk factors for VIA positivity and determinants of screening attendances in Dar es Salaam, Tanzania

Crispin Kahesa · Susanne Kruger Kjaer · TwalibNgoma · Julius Mwaiselage · Myassa Dartell · Thomas Iftner · Vibeke Rasch

Department of Physiology, Muhimbili University of Health and Allied Sciences
Department of Clinical Oncology, Muhimbili University of Health and Allied Sciences

Background: Tanzania is among the countries in the world where the cervical cancer incidence is estimated to be highest. Acknowledging an increase in the burden of cervical cancer, VIA was implemented as a regional cervical cancer screening strategy in Tanzania in 2002.

Objective: To determine the risk factors for VIA positivity and the determinants of screening attendances in Tanzania, among women who are reached and not reached by the screening program.

Methods: Data from 14 107 women aged 25–59 enrolled in a cervical cancer screening program in Dar es Salaam in the period 2002 – 2008 was analysed. The women underwent VIA examination and took part in a structured questionnaire interview. Socioeconomic characteristics, sexual behavior, HIV status and high-risk (HR) HPV infection were determined in a subpopulation of 890 who participated and 845 who did not participate in the screening.

Results: Being widowed/separated OR=1.41 (95% CI: 1.17-1.66), of high parity OR=3.19 (95% CI: 1.84-5.48) of low education OR= 4.30 (95% CI: 3.50-5.31) and married at a young age OR=2.17 (95% CI: 1.37-3.07) were associated with being VIA positive. Women who participated in the screening were more likely to be HIV positive OR= 1.59 (95% CI: 1.14-2.25) in comparison with women who had never attended screening, while no difference was found in

the prevalence of HR-HPV infection among women who had attended screening and women who had not attended screening.

Conclusion: Women who are widowed/separated, of high parity, of low education and married at a young age are more likely to be VIA positive and thus at risk of developing cervical cancer. The study further documents that a referral linkage between the HIV care and treatment program and the cervical cancer screening program is in place in the setting studied, where HIV positive were more likely to participate in the cervical cancer screening program than HIV negative women.

16. Incidence, recurrence and predictors associated with recurrence of low birth weight in Northern Tanzania

Michael Johnson Mahande, Joseph Obure, Miriam Hamisi Mvunta
Kilimanjaro Christian Medical University College

Aim: This study aimed to determine incidence, recurrence and associated risk factors for in Northern Tanzania.

Methods: This was a retrospective cohort study using maternally-linked data from Kilimanjaro Christian Medical Centre (KCMC) medical birth registry. A total of 48,008 births from 8,417 women who delivered live born between 2000 and 2014 were followed for subsequent deliveries. Recurrence risk with 95% Confidence Interval for LBW and associated risk factors were estimated in a multivariate log binomial model while accounting for correlation between births of the same mother.

Results: Incidence of LBW was 7.9%. The recurrence rate of LBW was 24.9% compared with 5.9% for those who had normal birth weight babies in first pregnancy. This corresponded to a relative risk of 3.7 (95% CI: 3.10 *f??* 4.52). Some maternal conditions in the first pregnancy were associated with increased risk of LBW in the subsequent pregnancy. These include; HIV positive status (RR 2.0; 95% CI 1.26 *f??* 3.21), preterm birth (RR 1.2; 95% CI 1.03 *f??* 1.63) and preeclampsia (RR 1.8; 95% CI 1.26 *f??* 2.45). Only preeclampsia in the first pregnancy was associated with increased risk of recurrent of LBW (RR: 1.6 95% CI 1.01-2.54).

Conclusion: We found high recurrence risk of LBW in this population. Preeclampsia in the first pregnancy was associated with recurrent LBW. Early prenatal identification of women at risk of preeclampsia to address modifiable risk factors and counsel mothers on persisting risk factors for recurrence will mitigate the risk of recurrence of LBW.

17. Assessment of the Quality of Discharge Summary in Pediatrics Wards at Muhimbili National Hospital 2013

Paul Kessy, Francis Fredrick Massawe

Background: Discharge summary is a tool of communication among health care providers; unfortunately it has been underutilized due to incompleteness or inaccuracy in filling in information. Many studies conducted in developed countries reveal that accuracy of discharge summaries is still a challenge in hospital patients' records leading to poor health outcomes. Few studies have been conducted in sub-Saharan Africa particularly in Tanzania hence the current situation is not well known. Aim: This study was conducted in order to assess the quality of hospital discharge summaries while pointing out observed shortcomings in pediatric and neonatal wards at Muhimbili National Hospital from August to September 2013.

Methods: A cross section study design was adopted to assess the quality of discharge summaries in pediatric and neonatal wards at Muhimbili National Hospital; data was collected using a structured checklist using the pre-existing hospital discharge form as a standard and analysis performed using SPSS version 16.

Results: A total of 367 discharge summaries were included in this study. These discharge summaries were collected from 7 pediatric wards namely; ward B 99(27%), ward A 76(20.7%), pediatric surgery 68(18.5%), neonatal unit 66(18%), Makuti A 21(5.7%), burn unit 20(5.4%) and Makuti B 17(4.6%). Out of 367 discharge summaries, 5(4.1%) of the discharging doctors were not identified by names or signature; of those who were identified 248(70.5%) were internship doctors, 44(12.5%) specialists, 35(9.9%) registrars and 25(7.1%) residents. Unfortunately all of the discharge summaries were incomplete according to the structure of the existing hospital discharge form.

Conclusion: Discharge summaries serve as essential component of transition from inpatient to outpatient care and also medical legal document but not properly documented. This study has outlined pertinent areas for improvement, particularly doctors' names and signatures, proper history and physical examination, investigations, results and treatment documentations.

PROGRAM FOR THE 4TH MUHAS SCIENTIFIC CONFERENCE			
MILLENIUM TOWER, DAR ES SALAAM			
Thursday, June 23, 2016 (day 1)			
8:00 am - 9:00 am	Registration and Poster Viewing		
Scientific Sessions			Presenter
09:00 am - 10:00 am	KISENGA HALL	Keynote presentation 1: “Creating a conducive environment for local stakeholders towards financing in Health Research and Training in Tanzania.”(Mr. G. Simbeye and Prof. A. Kiwara)	
	Chair: Prof. T. Ngoma		
	Rapporteur: Dr. Balandya E		
10:00 am - 10:30 am		Cofee and Tea Break	
10:30 am - 11:30 am	KISENGA HALL	Parallel Sessions 1A	
	Theme: NCD	1. Disaster in Sub Saharan Africa: Lessons learned from a new emergency department of an urban public hospital in Tanzania	Sherin A. Kassamali
		2. Profile and outcome of patients with hypertensive crisis presenting to the Emergency Medicine Department of Muhimbili National Hospital in Dar es salaam Tanzania	Patrick JohnnShao
	Chair: Prof. K. Pallangyo	3. Diabetic Retinopathy Among Adult Diabetic Patients at The Muhimbili National Hospital With No Prior Ophthalmic Consultation for Diabetic Retinopathy	Aza I. Lyimo
		4. Building a foundation for a multi-decade programme for Injury Prevention and Care in Tanzania focusing on Road Traffic Injury: INPACT: RTI	Anne H. Outwater
	Rapporteur: Dr. H. Sawe	5. Mercury exposure and related health problems among Artisanal and Small Scale Gold Mining Community in Chunya District	Mamuya SH
10:30 am -	TANZANITE	Parallel Sessions	

11:30 am	HALL	1B	
	Theme: Infectious Diseases Chair: Prof. Said Aboud Rapporteur: Dr. B. Sunguya	6. Do instructional videos on sputum submission result in increased tuberculosis case detection?	Grace Mhalu
		7. Open label Sertraline and High-dose Fluconazole Treatment of HIV-associated Cryptococcal Meningitis in Southeastern Rural Tanzania.	Katende Andre w
		8. Characteristics and geographic distribution of HIV-positive women diagnosed with cervical cancer in Dar es Salaam, Tanzania	Christina Maliche we
		9. Characteristics of Tuberculosis and Associated Co-Morbidities among Elderly and referent patients in Dar es Salaam	Rar R.
		10. Quality Improvement Approaches Improved Delivery of HIV/AIDS Services	Marina Njelekela
10:30 am - 11:30 am	MAWENZI HALL	Parallel Sessions 1C	
	Theme: Reproductive Health Chair: Prof. S. Masawe Rapporteur: Dr. A. Saidi	11. Reaching Men through Vasectomy Services: Successes from Dar es Salaam	Cosmas Alex Kapinga
		12. Availability and distribution of EmONC Services in Tanzania Mainland	Projestine S. Muganyizi
		13. Performances and self-perceived competencies of Enrolled Nurse/ Midwives in Pwani Region, Tanzania	Edith A.M. Tarimo
		14. Prevalence and Factors Associated with Late Antenatal Care Visit Among Pregnant Women in Lushoto, Tanzania	Joyce Protas
		15. Adoption of Interventions for Ending Preventable Maternal Mortality: A Case of Tumbi Ward in Tanzania	Stephen C. Winani
10:30 am - 11:30 am	MERU HALL	Parallel Sessions 1D	
	Theme: Basic Science Research Chair: Prof. A. Pembe Rapporteur: Dr. C. Kisali	16. Effect of Intergrated Nursing Process on the Outcome of Care of Children Admitted with Pneumonia in Dar es Salaam: A Quasi Experimental Study.	Golden M. Masika
		17. A review of health and working conditions in greenhouses in low-and middle-income countries	Vegard M. Hanssen
		18. Anti-hypertensive potentials of tri-terpenoids derived from Myrica cerifera plant extracts in	Ayotunde S. Adeagbo

		vitro and in vivo	
		19. Pre-Formulation Development of Lamivudine 300 Mg and Tenofovir Disoproxil Fumarate (Tdf) 300 Mg Fdc Tablets.	Prosper S. Tibalinda
		20. Pesticidal Bioactivity and influence on quality parameters of Amanita muscaria and Boletus sanatus in Stored Maize Grains.	Nelson E. Masota
11:30 am - 11:30 am	RUBI HALL	Parallel Sessions 1E	
	Theme: Health Policy	21. Organizational Commitment of Health Professionals and Associated Factors in Government Health Facilities of Gurage Zone, South Ethiopia	Gebremariam H. Nima
	Chair: Prof. D. Simba	22. Training and deployment of Medical Doctors: the case of Tanzania post-1990s health sector reforms	Nathanael Shauri Sirili
	Rapporteur: W. Mikomangwa	23. Missing persons: Addressing residential mobility in an urban cohort. The case of the Dar es Salaam Health and Demographic Surveillance site	Germana H. Leyna
		24. Governance Perspectives in Decentralised Maternal Health Care Delivery, Tanzania	Dickson Ally Mkoka
		25. Financing/Insurance rehabilitation services care provision and improve lives of disabled population in Tanzania	Salome J. Saria
11:30 am - 12:00 pm	Welcome Guest of Honor		
	Speeches		
12:00 pm - 12:10 pm		MUHAS Vice Chancellor	
12:10 pm - 12:20 pm		Development Partners - Sida	
12:20 pm - 12:30 pm		MoEVT	
12:30 pm - 12:50 pm		Guest of Honor	

12:50 pm - 12:55 pm		Vote of thanks - DVC PFA	
12:55 pm - 13:00 pm	Group Photos (all)		
13:00 pm - 14:00 pm	Lunch Break		
14:00 pm - 15:00 pm	KISENGA HALL Chair: Prof. S. Kaaya Rapporteur: F. Ramadhani	Keynote presentation - 2: <i>“Confronting Substance abuse in Tanzania” (Dr. J. Mbwambo and Dr. P. Kaduri)</i>	
15:00 pm - 15:30 pm	Exhibition Space	Poster Presentations Poster No (1 - 9)	
		1. Population Prevalence of Sickle Cell Trait and its demographic and clinical characteristics in Tanzania	Mariam Y. Ngaeje
		2. Addressing Community Violence through Training: Rukajuu Beekeeping Pilot Intervention in Dar Es Salaam , Tanzania	Anne H. Outwater
		3. Assessment of Uterotonic Activity of Crude Extracts of Pyrenacantha Kaurabassana (Icacinaeae) Root Tuber Using Uterine Muscles from Albino Mice.	Tumaini Makole
		4. Preparedness among Nurses on Reporting Adverse Drug Reaction in Public and Private Hospitals in Ilala District, Dar Es Salaam.	Romantiezer Robert
		5. Assessment of the Quality and Safety of Detergent Powders Circulating in Kinondoni District, Dar es Salaam.	Grace Faustine
		6. Thin Layer Chromatographic screening for Diethylene Glycol in Toothpaste Brands Available in the Dar es Salaam Market.	Oswin Sanga
		7. Bioactivity of crude extracts of Ascomycetes isolated from Tanzanian traditionally fermented milk, Mtindi	Jane S. Mlimbila
		8. Less than 3 doses of the HPV vaccine review of efficacy against virological and disease end	Mamsau Ngoma

		points	
		9. Awareness of Diabetic Eye Diseases Among the Diabetic Patients Attending the Diabetic Clinic at Muhimbili National Hospital	Angelo Peterson
15:30 pm - 16:30 pm	MAIN HALL	Parallel Sessions 2A	
	Theme: Reproductive Health	26. Pastoralism and Antenatal care service utilization in Dubti district; Afar, Ethiopia, 2015; cross-sectional study.	Nejimu B. Zepro
	Chair: Dr. K. Manji	27. Utilization and quality of Emergency Obstetric and New born Care Services in Tanzania Mainland	Projestine Muganyizi
	Rapporteur: Dr. A. Asenga	28. Vitamin D Status and Associated Factors In Neonates At Muhimbili National Hospital, Dar Es Salaam, Tanzania	Khadija M. Bhimji
		29. Factors associated with history of facility-based delivery among HIV-positive and HIV-negative pregnant women in Tanzania	Gretchen Antelman
		30. Community health worker supervision, communication with health providers, feeling appreciated, and satisfaction levels are associated with levels of work output in Tabora, Tanzania	Gretchen Antelman
		31. Scaling up of caesarean section deliveries in rural Tanzania; The ups and downs of Assistant Medical Officers	Nathanael Shauri Sirili
15:30 pm - 16:30 pm	TANZANITE HALL	Parallel Sessions 2B	
	Theme: NCD	32. Changes in the pattern of Kaposi's sarcoma at Ocean Road Cancer Institute in Tanzania (2006-2011)	Christina Maliche we
	Chair: Prof. G. Kwesigabo	33. Treatment of Burkitt lymphoma in equatorial Africa using a simple three-drug combination followed by a salvage regimen for patients with persistent or recurrent disease	Twalib Ngoma
	Rapporteur: Dr. A. Tungu	34. Evaluation of cervical visual inspection screening in Dar es Salaam, Tanzania.	Mamsau Ngoma
		35. Paediatric Hodgkin Lymphoma in Tanzania: Presentation and Response to Treatment	Nazima J. Dharsee

		36. Colorectal Cancer Pathology at Muhimbili National Hospital , Dar es salaam, Tanzania	Garvais Ntakirutiana
15:30 pm - 16:30 pm	MAWENZI HALL Theme: Infectious Diseases Chair: Prof. M. Moshi Rapporteur: Dr. M. Majigo	Parallel Sessions 2C	
		37. Human papillomavirus prevalence and type distribution in 3603 HIV-positive and HIV-Negative Women in the General Population of Tanzania: The PROTECT study	Christina Maliche we
		38. Submicroscopic Plasmodium falciparum parasitemia following artemether-lumefantrine treatment and its associated factors in endemic rural Tanzania.	Richard O. Mwaiswelo
		39. Effects of twelve rounds Mass Drug Administration with Albendazole and Ivermectin on Lymphatic Filariasis transmission in Rufiji District, Tanzania	Clarer Jones
		40. Developing and internally validating a risk prediction model for pediatric severe malarial anemia in a Tanzanian region of perennial malaria transmission	Edward R. Kabyemela
		41. Epidemiological status of bancroftian filariasis in the endemic communities during the era of elimination in North Eastern Tanzania	Happyness J. Mshana
15:30 pm - 16:30 pm	MERU HALL Theme: ICT Chair: Dr. J. Masalu Rapporteur: R. Mwakalukwa	Parallel Sessions 2D	
		42. Closing the Cancer Divide through Ubuntu: Information and Communication Technology powered models for global radiation oncology	Twalib Ngoma
		43. Evaluating the Role of Perceived Usefulness in User Adoption of Mobile Immunization-Notification System	Jackson Abandu
		44. Assessing Usefulness of HMIS in Strengthening Data Use: RTP Experiences	Melkior Assenga
		45. Profile: The Dar Es Salaam Health and Demographic Surveillance System (Dar es Salaam Cohort Study DUCS)	Germana H. Leyna
		46. Establishment of Bioinformatics Community of Practice in Tanzania	Joseph Matiko

15:30 pm - 16:30 pm	RUBI HALL	Parallel Sessions 2E	
	Theme: Oral Health	47. Platelets Levels before and after Surgical Intervention in Patients with Oral and Maxillofacial Tumors at MNH, Tanzania	Singh Sohal
	Chair: Prof. F. Kahabuka	48. Most commonly used behaviour management techniques and factors influencing their choice among Tanzanian dental practitioners	Sarah A. Al-Bait
	Rapporteur: Dr. K. Kasusu	49. Antenatal health providers' awareness of effects of periodontal diseases on pregnancy outcomes in South-East Malawi.	Don Chiwaya
		50. Knowledge, Attitude and Practices of Primary School Teachers Towards Oral Health in Mzuzu City, Malawi	Nathan Lungu
		51. Oral Health Status of Children with Malignancies at Muhimbili National Hospital	Ruhi Kashmiri
16:30 pm - 17:00 pm		Evening Cofee Break and Poster Viewing	
16:40 pm - Onward		Conference Networking	
Friday, JUNE 24, 2016 (day 2)			
8:00 am - 8:30 am		Registration and Poster Viewing	
Scientific Sessions			
8:30 am - 09:30 am	KISENGA HALL	Keynote presentation - 3: <i>"Cancer in Tanzania: Challenges and Opportunities"</i> (Prof. T. Ngoma)	
	Chair: Dr. D. Mloka		
	Rapporteur: Dr. I. Kida		
09:30 am - 10:30 am	KISENGA HALL	Parallel Sessions 3A	
	Theme: NCD	52. Ultrasound findings and 72-hour outcomes of adult trauma patients who undergo FAST at Muhimbili National Hospital Emergency Department (MNH EMD), Tanzania	Irene B. Kulola

	<p>Chair: Dr. P. Chillo</p> <p>Rapporteur: Mathias Eulambius</p>	53. Referral Patterns of Patients arriving to Muhimbili National Hospital Emergency Medicine Department	Juma Mfinanga
		54. Fractional Exhaled Nitric Oxide among Cement Factory Workers: A Cross Sectional Study	Alexander M. Tungu
		55. Barriers to Blood Transfusion in Anaemic Children Under 5yrs in The Emergency Department at Muhimbili National Hospital, Dar Es Salaam, Tanzania	Catherine R. Shari
		56. Role of Emergency Triage Vital Signs in Predicting Outcome of Traumatic Brain Injured Patients at MNH and MOI	Samwel E. Kisakeni
09:30 am - 10:30 am	<p>TANZANITE HALL</p> <p>Theme: Reproductive Health</p> <p>Chair: Dr. Edith Tarimo</p> <p>Rapporteur: Dr. Kija</p>	Parallel Sessions 3B	
		57. Rubella specific IgG and IgM antibody prevalence in infants before and after combined measles and rubella vaccination in Dar es Salaam	Mariam H. Ibrahim
		58. The Role of Health Insurance Scheme, Enhancing The Use of Family Planning Services in Tanzania.	Baraka Jitihada
		59. Management of Gestational Trophoblastic Diseases at Muhimbili National Hospital Dar Es Salaam Tanzania.	Amon S. Selufu
		60. Impact of Facility Delivery Load on The Practice of Active Management of Third Stage Of Labor in Dar Es Salaam	Hilda J. Kanama
		61. Risk Factors Associated with Preterm Birth at Muhimbili National Hospital, Dar Es Salaam, Tanzania: Unmatched Hospital-Based Case-Control Study	Mujuni R.Njunwa
		62. Social Behavioural Factors Affecting Home Deliveries among Pregnant Wome in the Mkuranga District of Tanzania	Riziki Ponsiano
09:30 am - 10:30 am	MAWENZI HALL	Parallel Sessions 3C	

	Theme: Infectious Diseases	63. Implementing CRAG screening in HIV patients initiating ART in rural HIV clinics with no CD4 testing services in Tanzania.	Gladys C. Mbwanji
	Chair: Dr. J. Lwakatare	64. Utilization of VCT among High Risk Populations: The Case of Bar Workers in Kinondoni District	Dominica E. Lyamuya
	Rapporteur: Dr. F. Dida	65. Immune Reconstitution Inflammatory Syndrome Associated with Dermatophytoses in Two HIV-1 Positive Patients in Rural Tanzania	Herry R. Mapesi
		66. Uptake of Option B+ Guidelines in a Rural Tanzanian with Integrated Health Services	Lameck B Luwanda1
		67. Screening for Phytochemicals and Antimicrobial Potency of Root Tuber Crude Extracts of <i>Pyrenacantha kaurabassana</i> Bail.	Godfrey Agrey
09:30 am - 10:30 am	MERU HALL	Parallel Sessions 3D	
	Theme: Gender & Health Educ.	68. Prevention of Mother to Child Transmission of HIV in Tanzania: How well are organizational guidelines and practices gender mainstreamed?	Tumaini Nyamhanga
	Chair: Prof. D. Urassa	69. Evaluation of a training program for health care workers to improve the quality of care for rape survivors: a quasi-experimental design study in Morogoro, Tanzania	Muzdalifat Abeid
	Rapporteur: G. Bwire	70. Gender Disparity in The Utilization of Modern Health Care Services Among South-Western Nigrieria Rural Dwellers	Alowolodu O. Olawumi
		71. Experience-based Views on Effective Biomedical Science Education (EBSE) to Health Professionals	Ayotunde S. Adeagbo
		72. Health Professional Education and Skills Development-eLearning	Salome J. Saria
10:30 am - 11:00 am		Coffee Break and Poster Viewing	
11:00 am - 12:00 pm		Parallel Sessions 4A	
11:10 am - 12:10 pm	KISENGA HALL	73. Increased Activated Memory Phenotypes of T And B Lymphocytes in Children With Sickel Cell Anaemia	Emmanuel Balandya

	Theme: Basic Science Research	74. Induction of Active TGF-beta by Helicobacter pylori and its influence in disease progression	Salim S Masoud
	Chair: Dr. Dinah Gasarasi	75. HIV-1 Nef-mediated immune evasion activities toward HLA class II-restricted CD4+ T lymphocytes.	Macdonald R. Mahiti
	Rapporteur: N. Masota	76. IKK β acts as a tumor suppressor in cancer-associated fibroblasts during intestinal tumorigenesis	Charles K. Pallangyo
		77. Identification of two naturally-occurring Vpr sequence polymorphisms associated with clinical parameters in HIV-1 chronic infection	Doreen D.Kamori
11:00 am - 12:00 pm	TANZANITE HALL	Parallel Sessions 4B	
	Theme: NCD	78. Physical activity and cardiovascular risk assessment in third trimester pregnant woman	Paulina Warae
	Chair: Prof. M. Mchembe	79. Severe Anaemia in Sickle Cell Disease; Factors and Outcomes at Muhimbili National Hospital	Furahini T. Chinenere
	Rapporteur: Dr. C. Mhina	80. Silent Epidemic in Tanzania: Hypertension and Factors Influencing Health Promotion, Prevention and Treatment at Primary Care Level, A Systematic Review	Emma F. Basimaki
		81. Environmental Intervention to Promote Active Living in Urban Tanzania: Surveys to Engage the Public in Creating a Conducive Environment.	Fredirick L. Mashili
		82. The Impact of Reduced Dust Exposure on Respiratory Health among Cement Workers: an Ecological Study	Alexander M. Tungu
11:00 am - 12:00 pm	MAWENZI HALL	Parallel Sessions 4C	
	Theme: Traditional Medicine	83. Ethnomedical Survey and Toxicity Evaluation of selected Medicinal Plants from Southern Highlands of Tanzania	Mourice N. Mbunde
	Chair: Prof. O. Ngassapa	84. Anti-cancer activity of selected medicinal	Trizah Koyi Milugo

		plants from Western Kenya	
	Rapporteur: J. Thomas	85. HPTLC Densitometric Screening for the presence of sildenafil in Octopus soup sold in Dar Es Salaam, Tanzania.	Emmanuel Abduel
		86. Investigation of Chemical Composition and Mosquito Repellent Property of Essential Oils from Plants Traditionally Used as Mosquito Repellents in Longido District, Tanzania	Ismail Athuman Almasi
		87. Seasonal Impacts on Chemical Composition and Antifungal Activity of Medicinal Plants <i>Turraea holstii</i> and <i>Clausena anisata</i>	Francis Machumi
11:00 am - 12:00 pm	MERU HALL Theme: Infectious Diseases Chair: Dr. Rodrick Kisenge Rapporteur: Dr. F. Francis	Parallel Sessions 4D	
		88. Mapping of <i>Mycobacterium tuberculosis</i> complex genetic diversity profiles in Tanzania and other African countries	Erasto V. Mbugi
		89. Exclusion from the initiation of DOTS under RNTCP West Bengal, India Kumar Chakrabartty	Arup K. Chakrabartty
		90. Health Considerations on Suitability of Domestic Wastewater for Irrigating Crops, Mafisa, Waste Stabilization Ponds, Morogoro	Anne H. Outwater
		91. Comparative efficacies of bed-nets against <i>Anopheles arabiensis</i> in the field condition and semi field system	Mgeni Mohamed
		92. Tuberculosis Incidence and All-Cause Mortality among HIV-Infected Patients on Isoniazid Preventive Therapy in Dar es Salaam, Tanzania	Grace A. Shayo
12:00 pm - 13:00 pm	MAIN HALL	Parallel Sessions 5A	
		93. Application of Nanotechnology for Enhancing Solubility of Lumefantrine: Evaluation of Polymetric Loaded Nanoparticles and Invitro Properties	Dickson P. Wandu

	Theme: Pharmaceutical care	94. Assessment of Adherence to Storage Conditions of DAKTACORT Cream among Community Pharmacies in Dar es Salaam, Tanzania	John Jeremiah
	Chair: Dr. J. Sempombe	95. Comparative In Vitro Dissolution Studies of Selected Generic Essential Medicines in Tanzania	Nampenda M. Zhirwa
	Rapporteur: N. Masota	96. Assessment of Cold Chain Medicines Conformity with WHO Requirements in Public Health Facilities in Tanzania	Siya Ringo
		97. Development and Optimization Of Oral-Dispersible Paediatric Paracetamol Tablets by Response Surface Methodology	Maganga Bundala Maganga
12:00 pm - 13:00 pm	TANZANITE HALL	Parallel Sessions 5B	
	Theme: NCD	98. Abortion incidence and unintended pregnancies in Tanzania	Projestine Muganyizi
	Chair: Prof. E. Lyamuya	99. A single centre, prospective, observational Hydroxyurea Registry for Sickle Cell Anemia,	Mariam Y. Ngajeje
	Rapporteur: Dr. D. Russa	100. Diosgenin, a novel aldose reductase inhibitor, attenuate the galactosemic cataract on rat	Lixia Ji
		101. Factors Associated with Adverse Outcomes Among Patients Admitted with Upper Gastrointestinal Bleeding	Sibtain M. Moledina
		102. 23 Gauge pars plana vitrectomy for the removal of retained intraocular foreign bodies	Kemal YÜKSEL
12:00 pm - 13:00 pm	MAWENZI HALL	Parallel Sessions 5C	
	Theme: Basic Science Research	103. Analysis of Heavy Metals in TUMBO and PUMU Herbal Medicines Prepared at Institute of Traditional Medicine, MUHAS, Dar es Salaam.	Shaheen Kassam
	Chair: Prof. A. Kamuhabwa	104. Assessment of Health Related Effects and Screening for Chemical Composition of Selected Local Brews available in Rombo District, Tanzania.	Pius D. Kiwango
	Rapporteur: Dr. L. Fundikila	105. Assessment of moisture permeability and closure systems of HDPE plastic bottles used as primary packaging containers for moisture	Raphael Shedafa

		sensitive medicines.	
		106. HPTLC Densitometric Screening for Sildenafil adulterated in Herbal Sexual Dysfunction Medicines available in the Dar Es Salaam Market.	Tryphone Guje ma
		107. Genetic Diversity and Proteinase Activity of Yeasts Isolated from Traditionally Fermented Milk (mtindi) and Industrially Fermented Milk (yoghurt)	Jane S. Mlimbila
12:00 pm - 13:00 pm	MERU HALL Theme: Infectious Disease Chair: Prof. M. Matee Rapporteur: Dr. M. Lyimo	Parallel Sessions 5D 108. Placental Malaria Exposure and Severe Malarial Anemia Risk in African Children 119. Support services may affect pediatric Antiretroviral Therapy (ART) access in Arusha Tanzania 110. Successful implementation of universal initiation of ART for HIV infected children in Tanzania 111. The Child Centered Family Care Clinic, an effective approach to reach the first and the third pediatric 90 112. Drug Resistance Mutations and Genetic Diversity in Adults Treated for HIV Type 1 Infection at Amana Hospital, Dar es Salaam	 Rugabela Kabye mela Charles E. Rwehumbiza Martha Mukaminega Martha Mukaminega Raphael Z. Sangeda
13:00 pm - 14:00 pm	LUNCH BREAK AND POSTER VIEWING		
14:00 pm - 14:30 pm	Exhibition Space	Poster Presentations (Abstract No 10 - 17)	
		10. Assessment of Antitrypanosomal Activity of Carica Papaya Root methanolic Crude Extracts against Trypanosoma brucei brucei.	Sebastian Peter

14:30 pm - 15:30 pm		11. HPTLC Densitometric screening for Senna Leaves and Sibutramine in Herbal Slimming products available in the Dares Salaam Market.	Beatrice Samwel
		12. Safety of the no-flip technique and spontaneous detachment for ShangRing circumcision	Quentin A wori
		13. Vacuum Assisted Vaginal Delivery: Incidence, Maternal and Fetal Outcomes in Muhimbili National Hospital, Dar Es Salaam, Tanzania.	Stephen S. Mihungo
		14. In Vitro Dissolution Study of Four Selected Albendazole Brand Equivalent Tablets Available in Dar Es Salaam	Ndimbwelu Bukuku
		15. Risk factors for VIA positivity and determinants of screening attendances in Dar es Salaam, Tanzania	Crispin Kahesa
		16. Incidence, recurrence and predictors associated with recurrence of low birth weight in Northern Tanzania	Michael J. Mahande
		17. Assessment of The Quality of Discharge Summary in Pediatrics Wards at Muhimbili National Hospital 2013	Immaculata P.Kessy
	MAIN HALL	Parallel Sessions 6A	
	Theme: NCD Chair: Dr. B. Mtinangi Rapporteur: S. Likindikoki	113. Prevalence of Low Back Pain Among Healthcare Workers: A Case Study of Kibuli Muslim Hospital Uganda	Aremu B. Abdulmujeeb
		114. Downstaging Cancer in Rural Africa	Twalib Ngoma
		115. Most women diagnosed with cervical cancer by a visual screening program in Tanzania completed treatment: Evidence from a retrospective cohort study	Andrew C Gard
		116. Pathology and oncology in Africa: education and training for the future in cancer research, East African Regional Meeting	D. C. Stefan

		117. A Case-Control Study to Evaluate the Etiology of Esophageal Cancer in Tanzania	Beatrice Mushi
14:30 pm - 15:30 pm	TANZANITE HALL Theme: Reproductive Health Chair: Prof. P. Muganyizi Rapporteur: Dr. A. Assenga	Parallel Sessions 6B	
		118. Achieving targets at scale through integration of malaria and HIV programming	Akiza Kamuzora
		119. Seeking health information in rural context: exploring sources of maternal health information in rural Tanzania	Mohmed Kassim
		120. "... Sometimes a laboratory Assistant stand as my assistant surgeon..."; Challenges and experiences by Assistant Medical Officers in performance of caesarean section in rural setting, Tanzania	Nathanael S. Sirili
		121. Determinants of Adverse Neonatal Outcome Among Preterm Neonates Of Severe Pre Eclamptic/ Eclamptic Mothers At MNH	Restuta Kibasa
		122. The Systemic Inflammatory Response Syndrome as Predictor of Mortality among Febrile Children in the Emergency Department	Upendo George
14:30 pm - 15:30 pm	MAWENZI HALL Theme: Oral Health Chair: Prof. D. Ngassapa Rapporteur: Dr. P. Shempemba	Parallel Sessions 6C	
		123. Knowledge, Attitude, Practice, Self Assessment of Oral Health Status Among Antenatal Mothers and their Nurses in Lilongwe, Malawi.	Martha Namwaza Chipanda
		124. High Oral Candida Colonization among HIV infected individuals in Mwanza, Tanzania	Martha F. Mushi
		125. Dental Caries Knowledge Among Nursing Students of Muhimbili University of Health and Allied Sciences (MUHAS)	Stephen A. Mwaisobwa
		126. Diagnostic Challenges in Patient with Multiple Impacted Teeth: A Case Report	Karpal S. Sohal
		127. Periodontal Status/Conditions and Quality of Life in Patients Attending Muhimbili University Dental Clinic, Dar-Es-Salaam, Tanzania	Peter F. Shempeba

		128. Awareness of preventive oral health care among parents/caregivers of preschool children in Dar es salaam Tanzania	Fatema Alimohamed
14:30 pm - 15:30 pm	MERU HALL	Parallel Sessions 6D	
	Theme: ICT	129. Data repository interoperability between MySQL and REDCAP systems in Muhimbili Sickle Cell Cohort	Raphael Z. Sangeda
	Chair: Dr. G. Frumence	130. Use of mHealth to Bridge the Communication Gap in Early Infant Diagnosis in Manyara Region, Tanzania	Edwin Ernest
	Rapporteur: Dr. F. Mashili	131. Web Visibility of Pharmacy Research at Muhimbili University of Health Sciences, Tanzania.	Edda T. Lwoga
		132. The Road Towards the First Sickle Cell Disease Ontology	Furahini T. Chinenere
		133. Deployment of an institutional wide easy to use Tools for research electronic data capture at MUHAS	Raphael Z. Sangeda
15:30 pm - 16:30 pm	KISENGA HALL	Parallel Sessions 7A	
	Theme: Infectious Diseases	134. GeneXpert MTB/Rif assay detects more Mycobacterium tuberculosis on sputum sediments of Pulmonary Tuberculosis suspect cases	Peter M. Mbelele
	Chair: Prof. B. Lembariti	135. Trends of ESBL genotypes in humans, animals and environment, North Western Tanzania: Preliminary insights for action	Jeremiah Seni
	Rapporteur: Dr. E. Ngowi	136. Using the patients' voice in quality improvement of care and treatment programs in Tanzania	Gaspar Joseph Mbita
		137. Predictive value of Systemic Inflammatory Response Syndrome (SIRS) and clinician gestalt on risk of mortality among children under 5 years presenting at the Emergency Department of Muhimbili National Hospital.	Meera R. Nariadhara
		138. Profile and outcome of Patients with Severe Sepsis or Septic Shock presenting to Emergency	Edward Amani

		Department at Muhimbili National Hospital, Dar Es Salaam, Tanzania	
15:30 pm - 16:30 pm	TANZANITE HALL	Parallel Sessions 7B	
	Theme: Health Policy	139. Prevalence of Alcohol and other substances of abuse among injured patients presenting to the emergency department, Muhimbili National Hospital, Dar es Salaam, Tanzania.	Muller M. Mundenga
	Chair: Dr. R. Z. Sangeda	140. Barriers to identification and follow-up of pregnant women by community health workers in Morogoro Region, Tanzania	Gasto Frumence
	Rapporteur: G. Mahiti	141. The potential of task shifting in scaling up services for prevention of mother-to-child transmission of HIV: a time and motion study in Dar es Salaam, Tanzania	Helga Elineema Naburi
		142. Assessing the Laboratory utilization patterns by the clinicians for patients management at Muhimbili National Hospital.	Lilian Barikiel
		143. Profile of existing CHWs in five BRN regions of Tanzania	Nilesh Deshpande
15:30 pm - 16:30 pm	MAWENZI HALL	Parallel Sessions 7C	
	Theme: Health Policy	144. Medical training in Tanzania: Is it time to it together?	Francis F. Furia
	Chair: De. F. Mashili	145. Medical Education and Social Network the Trend, Pearls and Pitfalls	Said Kilindimo
	Rapporteur: Mourice Mbunde	146. Awareness and Perception on Quality marks and the use of the mark in purchasing food items.	Joyline A. Ndans hau
		147. The role of occupational health and safety in climate change mitigation: A Case of agricultural sector	Kaijage H.R
		148. Role of Information Professionals in Enhancing Awareness Creation Towards Obstetric Fistula Treatment in Rural Areas	Onesta C. Rwihura
15:30 pm - 16:30 pm	MERU HALL	Parallel Sessions 7D	

	Theme: Basic Science Research	149. Cord blood anti-PfSEA-1 and protection from severe malaria in infants	Edward R. Kabyemela
	Chair. Dr. Agricola Joackim	150. The Burden and Clinical Characteristics of Patients Admitted at MNH Medical wards with Unknown HIV Infection	Jamila Said
	Rapporteur: Kilonzi Manase	151. Awareness of HIV/AIDS Ocular Manifestations Among People Living with HIV/AIDS Attending HIV Clinic at Muhimbili National Hospital october to November 2015.	Frank Patrick
		152. The changing pattern of ano-rectal cancer, squamous cell carcinoma of the eye, and Hodgkin's lymphoma as non-AIDS-defining cancers, by HIV status, in Tanzania over 11 years (2002-2012): a retrospective case-report study	Clare Meernik
		153. Causes of Admission Among HIV-Infected Patients On Art at Muhimbili National Hospital Medical Wards, Dar Es Salaam.	Benard M. Desderius
16:30 pm - 17:00 pm	MAIN HALL	Closing Ceremony	Minister for Health, Community Development, Gender, Elderly and Children. (MHCDGC)
		Certificates Provision	