Muhimbili University of Health and Allied Sciences, Dar es salaam, Tanzania

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Research Bulletin

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2012 Journal articles, Conference Proceedings, Books/Report, Thesis and Dissertations

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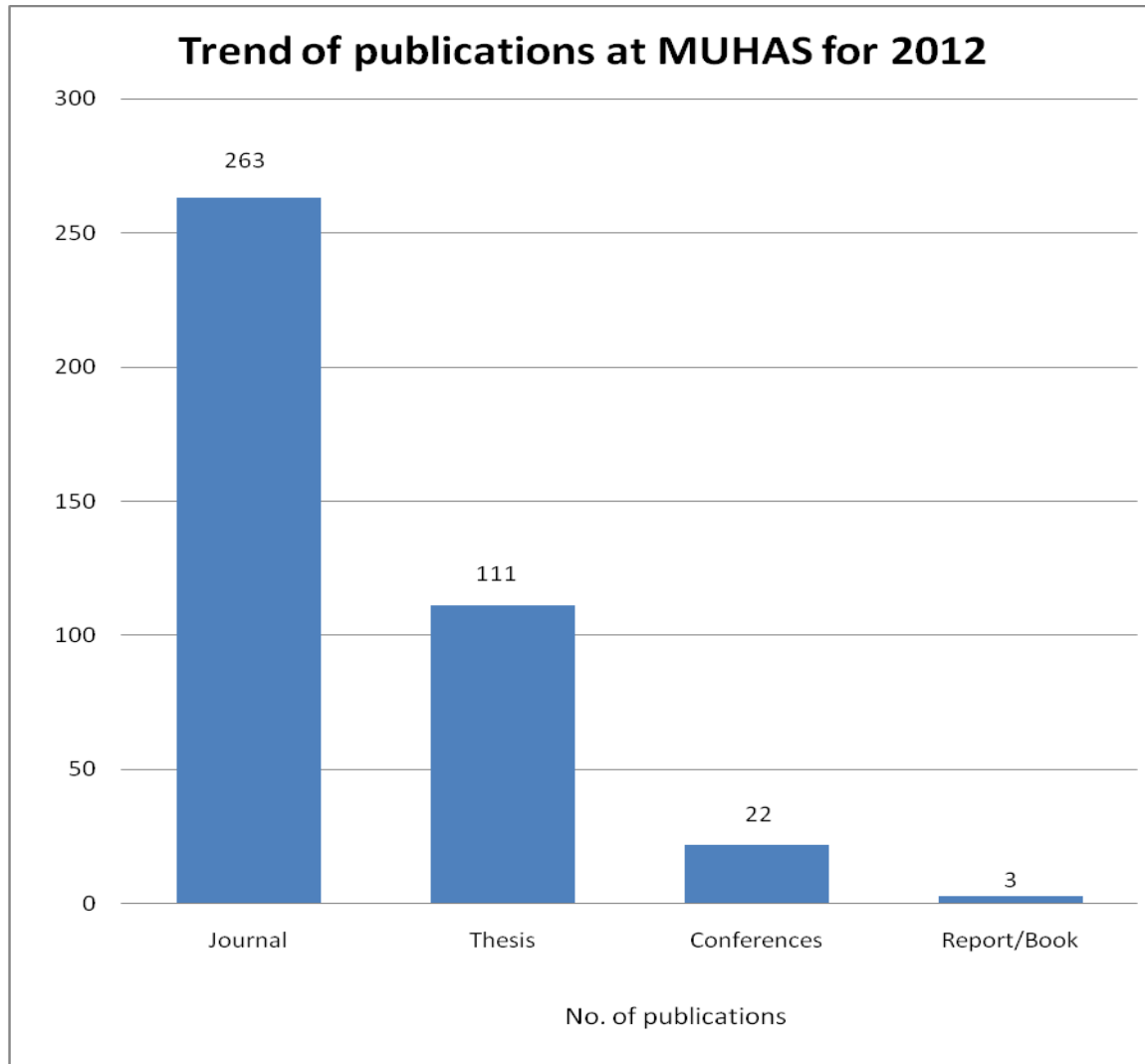
Information to readers

This bulletin is intended to provide information on research by members of Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania. It provides summaries of publications during the proceeding calendar year, including dissertations, thesis, journal articles and conference proceedings.

Members are requested to provide the Editor with summaries of their publications and ongoing research in electronic form for inclusion in the Bulletin. Abstract should be limited to 200 words.

Editorial

The current volume (Volume 15 No.1) contains total of 399 abstracts (263 journal articles,111 Dissertations,22 Conference proceeding and 3 book/research report published in 2012.

Trend of publications at MUHAS for 2012

Category	No. of publications
Journal	263
Thesis	111
Conferences	22
Report/Book	3

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Chapter One: Author names (A – M)

1. **Abbas ZG, Lutale JK, Bakker K, Baker N, Archibald LK.The 'Step by Step' Diabetic Foot Project in Tanzania: A model for improving patient outcomes in less-developed countries(2011)** *International Wound Journal*, **8 (2); 169-175.**

   Foot complications cause substantial morbidity in Tanzania, where 70% of leg amputations occur in diabetic patients. The Step by Step Foot Project was initiated to train healthcare personnel in diabetic foot management, facilitate transfer of knowledge and expertise, and improve patient education. The project comprised a 3-day basic course with an interim period 1-year of for screening, followed by an advanced course and evaluation of activities. Fifteen centres from across Tanzania participated during 2004-2006 and 12 during 2004-2007. Of 11 714 patients screened in 2005, 4335 (37%) had high-risk feet. Of 461 (11%) with ulcers, 45 (9·8%) underwent major amputation. Of 3860 patients screened during 2006-2007, there was a significant increase in the proportion with ulcers and amputations compared with 2005 (P < 0·001), likely a result of enhanced case finding. During 2005-2008, there was a fall in the incidence of foot ulcers in patient referrals to the main tertiary care centre in Dar es Salaam and a parallel fall in amputation among these referrals. In conclusion, the Step by Step Foot Project in Tanzania improved foot ulcer management for persons with diabetes and resulted in permanent, operational foot clinics across the country. This programme is an effective model for improving outcomes in other less-developed countries.

2. **Abbas ZG, Lutale J K, Ilondo MM , Archibald LK. The utility of Gram stains and culture in the management of limb ulcers in persons with diabetes** *International Wound Journal*, **(2012); 9 (6): 677-682.**

   In Tanzania, limited laboratory services often preclude routine identification of microorganisms that cause infections in persons with diabetes. Thus, we carried out this study to determine the utility of a Gram stain alone versus culture in guiding appropriate antimicrobial therapy. During February 2006 to December 2007 (study period), deep tissue biopsies were obtained from persons with diabetes presenting to the Muhimbili National Hospital (MNH) with infected limb ulcers. Specimens were Gram-stained then cultured for bacteria and fungi. Biopsies were obtained from 128 patients. Of 128 cultures, 118 (92%) yielded bacterial or fungal growth; 59 (50%) of these 118 cultures yielded mixed growth (80% included Gram-negative organisms); 38 (32%) and 20 (17%) yielded Gram-negative and Gram-positive organisms alone, respectively. The predictive value positive of a Gram stain for bacterial growth was 93% (110/118); a Gram-positive stain was 75% (15/20) predictive of growth of Gram-positive organisms whereas a Gram-negative stain was 82% (31/38) predictive of growth of Gram-negative organisms. In regions with limited resources, a Gram stain of an ulcer biopsy that is carefully procured is largely predictive of the type of microorganism causing infection. Gram staining of deep tissue biopsies might have a

potential role to play in the management of infected diabetic limb ulcers.

3. **Abbas ZG, Lutale JK, Ilondo MM, & Archibald LK. The utility of Gram stains and culture in the management of limb ulcers in persons with diabetes.** *International wound journal*.**2012;** *9*(**6**): **677-682.**
In Tanzania, limited laboratory services often preclude routine identification of microorganisms that cause infections in persons with diabetes. Thus, we carried out this study to determine the utility of a Gram stain alone versus culture in guiding appropriate antimicrobial therapy. During February 2006 to December 2007 (study period), deep tissue biopsies were obtained from persons with diabetes presenting to the Muhimbili National Hospital (MNH) with infected limb ulcers. Specimens were Gram-stained then cultured for bacteria and fungi. Biopsies were obtained from 128 patients. Of 128 cultures, 118 (92%) yielded bacterial or fungal growth; 59 (50%) of these 118 cultures yielded mixed growth (80% included Gram-negative organisms); 38 (32%) and 20 (17%) yielded Gram-negative and Gram-positive organisms alone, respectively. The predictive value positive of a Gram stain for bacterial growth was 93% (110/118); a Gram-positive stain was 75% (15/20) predictive of growth of Gram-positive organisms whereas a Gram-negative stain was 82% (31/38) predictive of growth of Gram-negative organisms. In regions with limited resources, a Gram stain of an ulcer biopsy that is carefully procured is largely predictive of the type of microorganism causing infection. Gram staining of deep tissue biopsies might have a potential role to play in the management of infected diabetic limb ulcers.

4. **Abbiendi G, Ainsley C, Åkesson PF, Alexander G, Anagnostou G, Anderson KJ, Asai S, Axen D, Bailey I, Barberio E, Barillari T, Barlow RJ, Batley RJ, Bechtle P, Behnke T, Bell KW, Bell PJ, Bella G, Bellerive A, Benelli G, Bethke S, Biebel O , Boeriu O, Bock P, Boutemeur M, Braibant S, Brown RM, Burckhart HJ, Campana S, Capiluppi P, Carnegie RK, Carter AA, Carter JR, Chang CY, Charlton DG, Ciocca C, Csilling A, Cuffiani M, Dado S, Dallavalle M, De Roeck A, De Wolf EA, Desch K, Dienes B, Dubbert J, Duchovni E, Duckeck G, Duerdoth IP, Etzion E, Fabbri F, Ferrari P, Fiedler F, Fleck I, Ford M, Frey A, Gagnon P, Gary JW, Geich-Gimbel C, Giacomelli G, Giacomelli P, Giunta M, Goldberg J, Gross E, Grunhaus J, Gruwé M, Gupta A, Hajdu C, Hamann M, Hanson GG, Harel A, Hauschild M, Hawkes CM, Hawkings R, Herten G, Heuer RD, Hill JC, Hoffman K, Horváth D, Igo-Kemenes P, Ishii K, Jeremie H, Jovanovic P, Junk TR, Kanzaki J, Karlen D, Kawagoe K, Kawamoto T, Keeler RK, Kellogg RG, Kennedy BW, Kluth S, Kobayashi T, Kobel M, Komamiya S, Krämer T, Krasznahorkay Jr. A, Krieger P, von Krogh J, Kuhl T, Kupper M, Lafferty GD, Landsman H, Lanske D, Lellouch D, Letts J, Levinson L, Lillich J, Lloyd S, Loebinger FK, Lu J, Ludwig A, Ludwig J, Mader W, Marcellini S, Marchant TE, Martin AJ, Mashimo T, Mättig P, McKenna J, McPherson RA, Meijers F, Menges W, Merritt FS, Mes H, Meyer N, Michelini A, Mihara S, Mikenberg G, Miller DJ, Mohr W, Mori T, Mutter A, Nagai K, Nakamura I. Search for charged Higgs bosons in e$^+$e$^-$ collisions at $s\sqrt{}$=189--209 GeV.** *The European Physical Journal C*.**2012;** *72*(**7**): **1-22.**

A search is made for charged Higgs bosons predicted by Two-Higgs-Doublet extensions of

the Standard Model (2HDM) using electron-positron collision data collected by the OPAL experiment at $s\sqrt{}=189$--209 GeV , corresponding to an integrated luminosity of approximately 600 pb^{-1}. Charged Higgs bosons are assumed to be pair-produced and to decay into qq$^-$, τv_τ or AW$^\pm$. No signal is observed. Model-independent limits on the charged Higgs-boson production cross section are derived by combining these results with previous searches at lower energies. Under the assumption BR(H$\pm\to\tau v\tau$)+BR(H$\pm\to$qq$^-$)=1 , motivated by general 2HDM type II models, excluded areas on the [mH$\pm$,BR(H$\pm\to\tau v\tau$)] plane are presented and charged Higgs bosons are excluded up to a mass of 76.3 GeV at 95 % confidence level, independent of the branching ratio BR(H$^\pm\to\tau v_\tau$). A scan of the 2HDM type I model parameter space is performed and limits on the Higgs-boson masses mH$\pm$ and m_A are presented for different choices of tanβ.

5. **Aboelkhair H, Ibrahim T, & Saad A. Gamma activity of stream sediment feldspars as ceramic raw materials and their environmental impact.** *Radiation protection dosimetry*. **2012** *151*(**1**): **175-182.**

In situ gamma spectrometric measurements have been performed to characterise the natural radiation that emitted from the stream sediment feldspars in Wadi El Missikat and Wadi Homret El Gergab, Eastern Desert, Egypt. The measurements of potassium (K, %), equivalent uranium (eU, ppm) and equivalent thorium (eTh, ppm) were converted into specific activities and equivalent dose rate. The average specific activities were 1402 Bq kg^{-1} for K, 113 Bq kg^{-1} for eU and 108 Bq kg^{-1} for eTh in Wadi El Missikat, while they were 1240, 104 and 185 Bq kg^{-1} in Wadi Homret El Gergab. The calculated outdoor average effective dose rates was 1.1 mSv y^{-1} in wadi El Missikat and 1.3 mSv y^{-1} in Wadi Homret El Gergab. The terrestrial-specific activities and effective dose rate levels of the natural radioactivity in the two areas lie within the international recommended limits for occupational feldspar quarry workers. On the other hand, these results indicated that irradiation is higher than the allowable level for members of the public. Therefore, quarrying the feldspar sediments from these locations as ceramic raw materials may yield an undesired impact on the environment, especially through the indoor applications.

6. **Abouheif MA, Al-Saidy MY, Al-Mufarrej SI, Makkawi A, Ibrahim HA, & Aljumaah RS. Effect of physical form of diet and frequency of feeding on digesta retention time and digestion in Najdi lambs. J. Anim. Vet. Adv. 2012; 11: 1774-1779.**

Twenty four Najdi ram lambs, weighing an average of 42.0+0.6 kg were utilized in this experiment to evaluate the effects of various alfalfa hay particle lengths in the diets and frequency of feeding on nutrients digestibility, ruminal retention time, total mean retention time and transit time. Lambs were randomly placed in a 3x2 factorial arrangement of three dietary treatments: 9.5 and 14 mm diets where alfalfa hay was processed to 9.5 and 14 mm particle lengths, respectively mixed with 3 parts of concentrate and pelleted as total mixed ration and long hay diet where one part of loose alfalfa hay (17.8±2.4 cm) was offered in combination with 3 parts of only-concentrate pellet and two feeding frequencies: once daily feeding at 0800 h and twice daily feeding in two equal portions at 0800 and 1500 h. All dietary treatments were homogeneous in their ingredient composition. Altering the particle

length of alfalfa hay in diets did not affect the digestibility of DM or CP whereas digestibilities of ADF and NDF and ruminal retention time were 4.2 and 5.3% units higher ($p<0.05$) and 6.3 h longer ($p<0.05$), respectively for the long hay diet versus the 9.5 mm pelleted diet. The total mean retention time for the long hay diet was longer ($p<0.05$) at 63.1 h compared with the 9.5 and 14 mm diets. Lambs fed once a day had higher ($p<0.05$) NDF digestibility and 4.9 and 3.8 h longer ($p<0.05$) ruminal and total mean retention times, respectively than lambs fed twice daily. On the other hand, neither particle length of the alfalfa hay nor frequency of feeding had affected ($p>0.05$) the lower tract retention time and transit time.

7. Adams LV, Kreiswirth BN, Arbeit RD, Soini H, Mtei L, Matee M, Bakari M, Lahey T, Wieland-Alter W, Shashkina E, Kurepina N, Driscoll JR, Pallangyo K, Horsburgh CR, & Von Reyn, C. F. Molecular epidemiology of HIV-associated tuberculosis in Dar es Salaam, Tanzania: strain predominance, clustering, and polyclonal disease. *Journal of clinical microbiology*.**2012;** *50***(8): 2645-2650.**

Molecular typing of Mycobacterium tuberculosis can be used to elucidate the epidemiology of tuberculosis, including the rates of clustering, the frequency of polyclonal disease, and the distribution of genotypic families. We performed IS*6110* typing and spoligotyping on M. tuberculosis strains isolated from HIV-infected subjects at baseline or during follow-up in the DarDar Trial in Tanzania and on selected community isolates. Clustering occurred in 203 (74%) of 275 subjects: 124 (80%) of 155 HIV-infected subjects with baseline isolates, 56 (69%) of 81 HIV-infected subjects with endpoint isolates, and 23 (59%) of 39 community controls. Overall, 113 (41%) subjects had an isolate representing the East Indian "GD" family. The rate of clustering was similar among vaccine and placebo recipients and among subjects with or without cellular immune responses to mycobacterial antigens. Polyclonal disease was detected in 6 (43%) of 14 patients with multiple specimens typed. Most cases of HIV-associated tuberculosis among subjects from this study in Dar es Salaam resulted from recently acquired infection. Polyclonal infection was detected and isolates representing the East Indian GD strain family were the most common.

8. Akhtar MN, Yahya N, Shafie A, Nasir N, Kashif M, & Zaid HM Development of novel electromagnetic antenna for deep target marine CSEM survey. International Conference on Fundamental and Applied Sciences 2012, 12–14 June; Kuala Lumpur, Malaysia. AIP Conference Proceedings. 2012;1482(1): 157-163.

Marine controlled source electromagnetic method (MCSEM) is a new and versatile method for hydrocarbon detection. Deep sea hydrocarbon reservoir exploration is still challenging and expensive. Due to unreliability for the detection of DHIs using seismic data, new methods have been investigated. Sea bed logging (SBL) is a new technique for the detection of deep target hydrocarbon and has potential to reduce the risks of DHIs (direct hydrocarbon indicators) in deep sea environment. The magnitude of EM waves is very important for the detection of deep target hydrocarbon reservoir below 4000m from the sea floor.

Nanotechnology has been introduced very effective and shows promising results in many research fields. Ferrite magnetic materials play an important role in many applications due to its versatile magnetic properties. The aluminum based EM antenna is developed and NiZn, YIG ferrite as magnetic feeders are used to increase the field strength from EM antenna. FESEM images show that grain size increases with the increase of sintering temperature and ranges from 30 to 60nm for Ni0.8Zn0.2Fe2O4 where as grain size increases from 45 to 110nm for Y3Fe5O12 samples. Due to better magnetic properties, samples (Ni0.8Zn0.2Fe2O4-PVDF) sintered at 950°C and (Y3Fe5O12-PVDF) sintered at 1350°C were used as magnetic feeders for the EM antenna. It was investigated that magnitude of EM waves from the novel EM antenna with (Ni0.8Zn0.2Fe2O4-PVDF) sintered at 950°C and Y3Fe5O12-PVDF) sintered at 1150°C increases up to 143% and 220% respectively in the lab scale environment. Modeling results by using CST software shows that new EM antenna with magnetic feeders has an ability to increase the D, E, B and H field components. This novel EM antenna with magnetic feeders may be used for the deep target hydrocarbon detection due to enhanced field strength. This new EM transmitter based on nanotechnology may open new horizons for oil and gas industry for deep target hydrocarbon reservoir.

9. **Ali R. Acceptability and safety of postpartum intrauterine contraceptive device among parturients at muhimbili national hospital, Tanzania. Master of Medicine in Obstetrics and Gynecology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam* **.Background**:
In Tanzania the general use of modern methods of contraception is twenty seven percent with less than two percent of the women adopting the IUCD as a method of contraception. The modern IUCD is a highly effective, safe, private, long-acting, coitus independent and rapidly reversible method of contraception with few side effects. Intrauterine contraception is the most cost-effective method of contraception today. The postpartum insertion of an IUCD provides a convenient opportunity for the woman to receive IUCD services. This is particularly important for women who have limited access to medical care. The postpartum period is potentially an ideal time to begin contraception as women are more strongly motivated to do so at this time, which also has the advantage of being convenient for both patients and health-care providers. **Objectives**: To assess acceptability and safety of immediate Postpartum Intrauterine Contraceptive Device (PPIUCD) among parturients at Muhimbili National Hospital (MNH). **Methodology:** A prospective interventional analytical study was conducted from 1st August to 31st December 2011.Contraceptive counseling was given to 369 eligible parturients after delivery during their postpartum hospitalization. A pretested structured questionnaire was administered to all participants. Women who accepted the PPIUCD during their postpartum care were inserted with the device before discharge (within 48 hours). These women were followed up at 4 weeks for complications. The acceptance rate of PPIUCD and the percentage of actual insertions were recorded. The reasons for both acceptance and decline were also recorded. **Results:** Of the 369 women counseled, a total of 102 (27.6%) were inserted with PPIUCD. Parturients who had a short duration from their last child birth (less than 2 years) were significantly associated with greater acceptance of the PPIUCD ($p \leq 0.05$). Parturients who had previously used the interval IUCD were significantly associated with greater acceptance of PPIUCD ($p = 0.005$). Preference to other methods of contraception mainly short acting methods, and the need to

discuss with their partners were the most common reasons for declining use of PPIUCD. More than half (55%) of the women whom PPIUCD was inserted did so due to its long term effect. Immediate PPIUCD was demonstrably safe due to its low rates of complications. The common complications at four weeks interval were expulsion (6.4%) and lost strings (5.3%).

10. **Alphonce I. A comparison of pharmacokinetics of two tablet formulations containing artemether / lumefantrine – quality criteria for malaria treatment assurance. Master of Science in Clinical Pharmacology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.***Background:** Treatment of non-severe malaria remains a challenge to endemic areas including Tanzania. Since November 2006, Coartem® an artemisinin based combination therapy (ACT) containing artemether-lumefantrine (ALu), replaced sulphadoxine/pyrimethamine (SP) as first line drug for treatment of uncomplicated malaria in Tanzania because of emergence and spread of SP resistance to *Plasmodium falciparum*. Currently a number of generic artemether-lumefantrine drugs are available in resource limited settings such as Tanzania and yet few pharmacokinetics (PK) and bioequivalence (BE) data in these populations are available. Considering the liability to substandard manufacturing, there is a need to assess quality of generic ALu tablet formulations. **Objective:** We assessed the quality of the most prevalent generic artemether-lumefantrine tablet formulation available in the Tanzanian market using clinical study for bioequivalence. **Methodology:** Survey of available generics of artemether-lumefantrine tablet formulations was carried out in retail pharmacies in Dar es Salaam in which the most widely available generic was sampled (Artefan® from India) for quality assessment. The randomized, 2-treatment cross over study was conducted in 18 healthy Tanzanian male volunteers. Each volunteer received Artefan® (test) and Coartem® (reference) formulation under fed condition separated by 42 days of drug-free washout period. Serial blood samples were obtained over 168 hours after oral administration of each treatment. Quantitation of lumefantrine plasma levels was done using HPLC with UV detection. Formulation lumefantrine bioequivalence was assessed in accordance with the US Food and Drug Authority (FDA) bioequivalence criteria. **Results:** All eighteen enrolled volunteers completed the study and both test and reference drug formulations were well tolerated. The mean ± SD for lumefantrine primary PK parameters for bioequivalence C_{max}, T_{max}, AUC_{0-t} and $AUC_{0-\infty}$ under fed condition for artefan®: coartem® were (4206.93±2942.48: 4438.81±2548.43), (6.11±2.70: 6.22±2.16), (123758.90±83527.51: 135430.70±86814.81) and (138189.70±94959.77: 149530.20±95109.42) respectively. Ratios for geometric means of bioequivalence parameters for lumefantrine C_{max}, AUC_{0-t}, and $AUC_{0-\infty}$ of artefan® to coartem® and 90% confidence interval limits were 84.01% (49.44% - 142.76%), 84.49% (52.70% - 136.81%) and 84.26% (52.46% - 135.35%) respectively. The geometric mean ratios (artefan® to coartem®) for lumefantrine C_{max}, AUC_{0-t} and $AUC_{0-\infty}$ were all within FDA recommended bioequivalence limits of 80% – 125%, but 90% confidence intervals were outside FDA recommended limits of 80% - 125%. **Conclusions:** Although the ratios of AUCs and C_{max} were within the acceptable FDA range, bioequivalence between artefan® and coartem® tablet formulations was not demonstrated due to failure to comply with the FDA 90% confidence interval criteria. However based on the observed total drug exposure (AUCs) in comparison to other studies carried elsewhere, artefan® is likely to produce a similar therapeutic response as Coartem®.

11. **Ambikile JS, & Outwater A.Challenges of caring for children with mental disorders: Experiences and views of caregivers attending the outpatient clinic at Muhimbili National Hospital, Dar es Salaam-Tanzania.** *Child and adolescent psychiatry and mental health***,2012;** *6*(1): 1-11.

Background: It is estimated that world-wide up to 20 % of children suffer from debilitating mental illness. Mental disorders that pose a significant concern include learning disorders, hyperkinetic disorders (ADHD), depression, psychosis, pervasive development disorders, attachment disorders, anxiety disorders, conduct disorder, substance abuse and eating disorders. Living with such children can be very stressful for caregivers in the family. Therefore, determination of challenges of living with these children is important in the process of finding ways to help or support caregivers to provide proper care for their children. The purpose of this study was to explore the psychological and emotional, social, and economic challenges that parents or guardians experience when caring for mentally ill children and what they do to address or deal with them. **Methodology:** A qualitative study design using in-depth interviews and focus group discussions was applied. The study was conducted at the psychiatric unit of Muhimbili National Hospital in Tanzania. Two focus groups discussions (FGDs) and 8 in-depth interviews were conducted with caregivers who attended the psychiatric clinic with their children. Data analysis was done using content analysis. **Results**: The study revealed psychological and emotional, social, and economic challenges caregivers endure while living with mentally ill children. Psychological and emotional challenges included being stressed by caring tasks and having worries about the present and future life of their children. They had feelings of sadness, and inner pain or bitterness due to the disturbing behaviour of the children. They also experienced some communication problemswith their children due to their inability to talk. Social challenges were inadequate social services for their children, stigma, burden of caring task, lack of public awareness of mental illness, lack of social support, and problems with social life. The economic challenges were poverty, child care interfering with various income generating activities in the family, and extra expenses associated with the child's illness. **Conclusion:** Caregivers of mentally ill children experience various psychological and emotional, social, and economic challenges. Professional assistance, public awareness of mental illnesses in children, social support by the government, private sector, and non-governmental organizations (NGOs) are important in addressing these challenges.

12. **Babri O, Malik S, Ibrahim T, & Ahmed Z. Voice controlled motorized wheelchair with real time obstacle avoidance . 2012.**

A voice controlled motorized wheelchair with real time obstacle avoidance is designed and implemented. It enables a disabled person to move around independently, using a joystick and a voice recognition application whichm is interfaced with motors. The prototype of the wheelchair is built using a micro-controller, chosen for its low cost, in addition to its versatility and performance in mathematical operations and communication with other electronic devices. A camera is mounted on the chair for real time obstacle avoidance. The system has been designed and implemented in a costeffective way so that if our project is

commercialized the needy users in developing countries will benefit from it.

13. **Baker U, Tomson G, Somé M, Kouyaté B, Williams J, Mpembeni R & Eriksen J. How to know what you need to do': a cross-country comparison of maternal health guidelines in Burkina Faso, Ghana and Tanzania.** *Implement Sci*.**2012;** *7*(**1): 31.**

Background: Initiatives to raise the quality of care provided to mothers need to be given priority in Sub Saharan Africa (SSA). The promotion of clinical practice guidelines (CPGs) is a common strategy, but their implementation is often challenging, limiting their potential impact. Through a cross-country perspective, this study explored CPGs for maternal health in Burkina Faso, Ghana, and Tanzania. The objectives were to compare factors related to CPG use including their content compared with World Health Organization (WHO) guidelines, their format, and their development processes. Perceptions of their availability and use in practice were also explored. The overall purpose was to further the understanding of how to increase CPGs' potential to improve quality of care for mothers in SSA. **Methods**: The study was a multiple case study design consisting of cross-country comparisons using document review and key informant interviews. A conceptual framework to aid analysis and discussion of results was developed, including selected domains related to guidelines' implementability and use by health workers in practice in terms of usability, applicability, and adaptability. **Results:** The study revealed few significant differences in content between the national guidelines for maternal health and WHO recommendations. There were, however, marked variations in the format of CPGs between the three countries. Apart from the Ghanaian and one of the Tanzanian CPGs, the levels of both usability and applicability were assessed as low or medium. In all three countries, the use of CPGs by health workers in practice was perceived to be limited**. Conclusion**: Our cross-country study suggests that it is not poor quality of content or lack of evidence base that constitute the major barrier for CPGs to positively impact on quality improvement in maternal care in SSA. It rather emphasises the need to prioritise the format of guidelines to increase their usability and applicability and to consider these attributes together with implementation strategies as integral to their development processes.

14. **Baraka B**. **Chest radiographic patterns among hiv positive and hiv negative adults with pulmonary tuberculosis at mwananyamala hospital tb clinic. Master of Medicine (Radiology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Tuberculosis is important global health problem. About one-third of the world's population and 30% of HIV positive patients are infected with *Mycobacterium tuberculosis.* TB patients infected with HIV have radiographic patterns of both primary and post primary pulmonary tuberculosis. **Objectives**: This study aimed to determine differences in chest radiographic patterns among HIV positive and HIV negative adults. **Methodology**: Patients newly diagnosed with smear positive PTB were randomly selected, HIV tested and chest radiographic patterns were extracted from re-evaluation of original chest radiographs and their radiologic reports. **Results**: A total of 170 patients were included among them 100 were males and 70 were females. Fifty four patients (31.8%) were HIV/PTB co-infected.

Females were significantly more HIV/PTB co-infected than males (51.4% vs 18.0%, p-value= 0.000). HIV/PTB co-infected patients compared to PTB only patients had significantly lesser cavities (44.4% vs 61.2%, p = 0.040), lesser alveolar consolidation (64.9% vs 81.7%, p = 0.04), HIV/PTB co-infected patients had more left and bilateral lung nodules 85.2% vs 60.9% (p = 0.023) and 70.4% vs 37.5% (p = 0.004) respectively, more miliary nodules (44.4% vs 15.6%, p = 0.003), more left upper, mid and lower zone nodules 59.3% vs 34.4% (p = 0.028), 77.8% vs 54.7% (p-value = 0.039) and 66.7% vs 34.4% (p = 0.005) respectively. HIV/PTB co-infected patients with CD4 > 200µmol/l had more right mid zone consolidation (40,0% vs 4,5%, p = 0.007). No chest radiographic pattern which was highly associated with severe immunosuppression. **Conclusion**: Prevalence of HIV among PTB patients is still high (31.8%). Most patients with smear positive pulmonary tuberculosis have abnormal chest radiographs. Pulmonary cavities and alveolar consolidation are highly associated with negative HIV status. HIV positive patient with smear positive PTB were more likely to have left or bilateral pulmonary nodules, milliary nodules and left upper, mid and lower zone nodules. Right mid zone consolidation in HIV patients was associated with CD4 counts > 200µmol/l. No radiographic pattern was highly associated with severe immunosuppression. **Recommendations**: It is recommended that all HIV positive patients with pulmonary radiographic lesions to have sputum smear screening. Patients with pulmonary nodules should be evaluated for pulmonary tuberculosis and HIV. There is a need of more studies focusing on radiographic patterns among HIV positive and HIV negative patients using large community based sample.

15. **Bastien S , Mason-Jones AJ, De Koker P, Mmbaga EJ, Ross DA, Mathews C. Herpes simplex virus type 2 infection as a biomarker for sexual debut among young people in sub-Saharan Africa: A literature review** *International Journal of STD and AIDS*, **(2012);23 (11): 761-766.**

Biological markers are needed in order to provide objective measures to validate self-reported sexual behaviour and interpret prevention trial data. In this review, we evaluated herpes simplex type 2 virus (HSV-2), one of the most prevalent sexually transmitted infections in sub-Saharan Africa as a biological marker of sexual debut. Based on our findings, we do not recommend using HSV-2 as a biomarker for sexual debut due to its low transmission probabilities and the fact that HSV-2 prevalence is not 100% among potential sexual partners. We recommend that the validation of alternative biological measures should be prioritized, and included in future studies and trials of interventions to reduce sexual health risk.

16. **Bauer A, Podola L, Haule A, Sudi L, Nilsson C, Mann P, Missanga M, Kaluwa B, Maboko L, Lueer , Mwakatima M, Aboud S, Bakari M, Currier J, Robb M, Joseph S, McCormack S, Lyamuya E, Wahren B, Sandström E, Biberfeld G, Hoelscher M, Kroidl A, & Geldmacher C. (2012). Preferential targeting of conserved Gag regions after vaccination with a heterologous DNA prime Modified Vaccinia Ankara boost HIV vaccine regime.** *Retrovirology*.**2012;** *9*(**2):P330.**

Background: Genetic diversity is a major challenge in the design of vaccines against

variable viruses, including HIV. Engineering vaccines to induce immune responses that preferentially target conserved antigenic regions could thus contribute to improved HIV vaccines. **Methods:** During the Tanzania Mozambique HIV Vaccine trial (TaMoVac 01) phase 2a HIV vaccine trial, HIV negative Tanzanian volunteers received 3x 0.6 or 1mg intradermal injections with a multiclade, multigene DNA vaccine that included 2 plasmids encoding for clade B Gag-p37 (p17 & p24) and a recombinant Gag-p37 (clade B p17 & clade A p24). DNA vaccine recipients were boosted with Modified Vaccinia Ankara (MVA)-CMDR expressing clade A Gag that additionally covered the Gag-p15 region. Vaccineinduced T cell responses were characterized using IFNgamma ELISpot in 45 participants after stimulation of fresh PBMC with 9 peptide pools subdividing Gag into 9 distinct antigenic regions. Data were analyzed using the Mann-Whitney test and linear regression analysis. **Results:** Antigenic regions p17 and p24 included in the DNA prime and the MVA boost were recognized with higher median magnitude than antigenic regions within p15, which was only covered by the MVA boost (p<0.0001). Antigenic regions within p24 (clade A&B prime and clade A boost) were better recognized than those within p17 (clade B prime and clade A boost; p<0.0001). We then determined the sequence homology between the MVA and the DNA Gag vaccine immunogens for each of the peptide pools. The sequence homology ranged between 91% and 0% (for p15) of total amino acids within a given peptide pool and there was a linear correlation between the sequence homology and the response rate (p=0.04, r2=0.47). **Conclusion:** These preliminary results support the hypothesis that heterologous prime-boost vaccine regimens preferentially induce immune responses targeting regions that are conserved between the priming and boosting vaccines.

17. **Bays K, Iida T, Abe K, Hayato Y, Iyogi K, Kameda J, & Albert J. Supernova relic neutrino search at super-Kamiokande.** *Physical Review D*.**2012; *85*(5): 052007.**

A new Super-Kamiokande search for supernova relic neutrinos was conducted using 2853 live days of data. Sensitivity is now greatly improved compared to the 2003 Super-Kamiokande result, which placed a flux limit near many theoretical predictions. This more detailed analysis includes a variety of improvements such as increased efficiency, a lower energy threshold, and an expanded data set. New combined upper limits on supernova relic neutrino flux are between 2.8 and 3.1v^-e cm−2 s−1>16 MeV total positron energy (17.3 MeV Ev).

18. **Becquet R, Marston M, Dabis F , Moulton LH, Gray G, Coovadia HM, Essex M, Ekouevi DK, Jackson D , Coutsoudis A , Kilewo C , Leroy V, Wiktor SZ , Nduati R, Msellati P, Zaba B, Ghys PD, Newell ML. Children who acquire hiv infection perinatally are at higher risk of early death than those acquiring infection through breastmilk: A meta-analysis** *PLoS ONE*, **(2012); 7 (2): art. no. e28510.**

Background: Assumptions about survival of HIV-infected children in Africa without antiretroviral therapy need to be updated to inform ongoing UNAIDS modelling of paediatric HIV epidemics among children. Improved estimates of infant survival by timing of HIV-infection (perinatally or postnatally) are thus needed. Methodology/Principal Findings: A pooled analysis was conducted of individual data of all available intervention cohorts and

randomized trials on prevention of HIV mother-to-child transmission in Africa. Studies were right-censored at the time of infant antiretroviral initiation. Overall mortality rate per 1000 child-years of follow-up was calculated by selected maternal and infant characteristics. The Kaplan-Meier method was used to estimate survival curves by child's HIV infection status and timing of HIV infection. Individual data from 12 studies were pooled, with 12,112 children of HIV-infected women. Mortality rates per 1,000 child-years follow-up were 39.3 and 381.6 for HIV-uninfected and infected children respectively. One year after acquisition of HIV infection, an estimated 26% postnatally and 52% perinatally infected children would have died; and 4% uninfected children by age 1 year. Mortality was independently associated with maternal death (adjusted hazard ratio 2.2, 95%CI 1.6-3.0), maternal CD4&350 cells/ml (1.4, 1.1-1.7), postnatal (3.1, 2.1-4.1) or peri-partum HIV-infection (12.4, 10.1-15.3). Conclusions/Results: These results update previous work and inform future UNAIDS modelling by providing survival estimates for HIV-infected untreated African children by timing of infection. We highlight the urgent need for the prevention of peri-partum and postnatal transmission and timely assessment of HIV infection in infants to initiate antiretroviral care and support for HIV-infected children.

19. **Bratland E, Magitta NF, Bøe Wolff AS, Ekern T, Knappskog PM. Kämpe O, Haavik J, Husebye ES. Autoantibodies against aromatic amino acid hydroxylases in patients with autoimmune polyendocrine syndrome type 1 target multiple antigenic determinants and reveal regulatory regions crucial for enzymatic activity*Immunobiology*. (2012).**

Patients with autoimmune polyendocrine syndrome type 1 (APS-1) frequently have autoantibodies directed against the aromatic amino acid hydroxylases tryptophan hydroxylase (TPH) and tyrosine hydroxylase (TH). We aimed to characterize these autoantibodies with regard to their antigenic determinants, their influence on enzymatic activity and their clinical associations. In particular, we wanted to compare autoantibodies against the two different isoforms of TPH, which display different tissue distribution. Using sera from 48 Scandinavian APS-1 patients we identified 36 patients (75%) with antibodies against one or more of these three enzymes. Antibodies against TPH1, but not TPH2, were associated with malabsorption in the whole Scandinavian cohort, while TH antibodies were associated with dental enamel hypoplasia in Norwegian patients. Subsequent experiments with selected patient sera indicated that while the C-terminal domain was the immunodominant part of TPH1, the epitopes of TPH2 and TH were mainly located in the N-terminal regulatory domains. We also identified a TPH1 specific epitope involved in antibody mediated inhibition of enzyme activity, a finding that provides new insight into the enzymatic mechanisms of the aromatic amino acid hydroxylases and knowledge about structural determinants of enzyme autoantigens. In conclusion, TPH1, TPH2 and TH all have unique antigenic properties in spite of their structural similarity.

20. **Bulula N. Assessment of knowledge of histamine fish poisoning among health care personnel and fish consumers in dar es salaam region. Master of Hospital and Clinical Pharmacy Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam***
21. **Bunalema L, Kirimuhuzya C. Tabuti JRS, Waako P, Magadula JJ, Otieno N, Orodho**

JA, Okemo P. The efficacy of the crude root bark extracts of Erythrina abyssinica on rifampicin resistant mycobacterium tuberculosis *African Health Sciences*, (2012); 11 (4): 587-593.

Introduction: Tuberculosis (TB) is one of the leading causes of morbidity and mortality with a global mortality rate at two million deaths per year while one third of the world's population is infected with the TB bacillus. Ojective: To determine the efficacy of the crude extracts of Erythrina abyssinica root bark on rifampicin-resistant TB. Methods: Crude extracts of root bark of Erythrina abyssinica, were screened against three strains of Mycobacterium tuberculosis including rifampicin-resistant TMC-331. Susceptibility tests used the disc diffusion method and were done on solid Middle brook 7H10, while the Minimum Inhibitory concentration (MICs) and minimum bactericidal concentration (MBCs) were determined by the Microtitre plate method using Middle brook 7H9 broth. Results: The total crude methanol extract showed activity against all the three strains of mycobacterium used, at 50mg/ml and diameters of zones of inhibition of up to 26 mm. Erythrina abyssinica total crude methanol extract showed the highest activity on the pan sensitive strain H37Rv (0.39±0.0 mg/ml) and the rifampicin resistant strain (TMC-331) (2.35±1.11 mg/ml) and was also active on Mycobacterium avium (0.39±0.mg/ml. The values for isoniazid were 0.25μg/ml and 9.38μg/ml for H37Rv and TMC-331 respectively, while for rifampicin the MIC value was 0.25μg/ml for H37Rv but it was not active on TMC-331. Acute toxicity test gave an LD50 of 776.2mg/kg body weight while the phytochemical analysis showed the presence of alkaloids, tannins and flavones. Conclusion: The conclusion from the study was that Erythrina abbyssinica has antimycobacterial activity and reasonable safety that merits further research.

22. **Burton KJ, Rogathe J, Whittaker R, Mankad K, Hunter E, Burton MJ, Todd J , Neville BGR, Walker R, Newton CRJC. Epilepsy in Tanzanian children: Association with perinatal events and other risk factors** *Epilepsia*, (2012); 53 (4): 752-760.

Purpose: To define the prevalence and risk factors for epilepsy in children in a rural district of Tanzania by conducting a community-based case - control study. Methods: Children aged 6-14 years with active epilepsy (at least two unprovoked seizures in the last 5 years) were identified in a cross-sectional survey in Tanzania. Cases were compared with age-matched controls. Key Findings: Overall 112 children with epilepsy (CWE) were identified; the unadjusted prevalence of epilepsy was 2.91 per 1,000 (95% confidence interval [95% CI] 2.4-3.5). The main seizure types were focal motor with secondary generalization in 73 (65.2%) of 112 and generalized convulsive seizures in 19 (16.9%) of 112. Adverse perinatal events were present in 16 (14%) of 112 cases but in no controls. In multivariate analysis, epilepsy was associated with number of parents who were resident at home (odds ratio [OR] 6.2 for none vs. both resident, 95% CI 1.5-25.5), history of adverse perinatal events (OR 14.9, 95% CI 1.4-151.3), family history of afebrile seizures (OR 5.7, 95% CI 1.0-27.5), and poor scholastic attainment (OR 8.6, 95% CI 4.0-18.4). Electroencephalography (EEG) and computed tomography (CT) scans were abnormal in 44 (44%) of 101 and 26 (29%) of 90 cases, respectively. Overall, 98 (88%) of 112 cases had focal features on assessment. Significance: In this study from sub-Saharan Africa, CWE predominantly had focal features

that support the suggestion that most epilepsy in this region has a symptomatic etiology. Adverse perinatal events were strongly associated with epilepsy. Genetic and social factors may also be important. Epilepsy may be preventable in a significant proportion of children with better antenatal and perinatal care. **Burton K, Rogathe J , Whittaker RG, Mankad K, Hunter E, Burton MJ, Todd J, Neville BGR, Walker R, Newton CRJC. Co-morbidity of epilepsy in Tanzanian children: A community-based case-control study** *Seizure*, **(2012); 21 (3): 169-174.**

Purpose: To define the prevalence and associations of co-morbidity and school attendance in older children with epilepsy (CWE) from a rural district of Tanzania by conducting a community-based case-control study. Methods: Children aged 6-14 years old with active epilepsy (at least two unprovoked seizures in the last five years) were identified in a cross-sectional survey in Tanzania. Co-morbidities were assessed and cases were compared with age-matched controls. Results: Co-morbidity was very common amongst cases (95/112, 85%), with 62/112 (55%) having multiple co-morbidities. Co-morbidities consisted of cognitive impairment (72/112, 64%), behaviour disorder 68/112 (61%), motor difficulties 29/112 (26%), burns and other previous injuries (29/112, 26%). These complications were significantly more common in cases than in controls (odds ratio 14.8, 95%CI 7.6-28.6, p < 0.001). Co-morbidity in CWE was associated with structural cause, abnormal electroencephalogram and early onset seizures. Cognitive impairment was very common in CWE (64%) and was not associated with Phenobarbital use but was associated with motor difficulties, early onset and recurrent seizures. Poor school attendance was found in 56/112 (50%) of CWE, but not in the controls: it was associated with the presence of multiple co-morbidities, especially with motor difficulties in CWE. Conclusion: Children with epilepsy in a rural area of sub-Saharan Africa had a high level of co-morbidity. Cognitive impairment and poor school attendance were very common. These associated difficulties in CWE in the region need to be addressed to reduce the negative impact of epilepsy on these children.

23. **Campbell MC, Ranciaro A, Froment A, Hirbo J, Omar S, Bodo JM, Nyambo T, Lema G, Zinshteyn D, Drayna D, Breslin PAS , Tishkoff SA. Evolution of functionally diverse alleles associated with PTC bitter taste sensitivity in Africa** *Molecular Biology and Evolution*, **(2012); 29 (4): 1141-1153.**

Although human bitter taste perception is hypothesized to be a dietary adaptation, little is known about genetic signatures of selection and patterns of bitter taste perception variability in ethnically diverse populations with different diets, particularly from Africa. To better understand the genetic basis and evolutionary history of bitter taste sensitivity, we sequenced a 2,975 bp region encompassing TAS2R38, a bitter taste receptor gene, in 611 Africans from 57 populations in West Central and East Africa with diverse subsistence patterns, as well as in a comparative sample of 132 non-Africans. We also examined the association between genetic variability at this locus and threshold levels of phenylthiocarbamide (PTC) bitterness in 463 Africans from the above populations to determine how variation influences bitter taste perception. Here, we report striking patterns of variation at TAS2R38, including a significant excess of novel rare nonsynonymous polymorphisms that recently arose only in Africa, high frequencies of haplotypes in Africa associated with intermediate bitter taste sensitivity, a

remarkably similar frequency of common haplotypes across genetically and culturally distinct Africans, and an ancient coalescence time of common variation in global populations. Additionally, several of the rare nonsynonymous substitutions significantly modified levels of PTC bitter taste sensitivity in diverse Africans. While ancient balancing selection likely maintained common haplotype variation across global populations, we suggest that recent selection pressures may have also resulted in the unusually high level of rare nonsynonymous variants in Africa, implying a complex model of selection at the TAS2R38 locus in African populations. Furthermore, the distribution of common haplotypes in Africa is not correlated with diet, raising the possibility that common variation may be under selection due to their role in nondietary biological processes. In addition, our data indicate that novel rare mutations contribute to the phenotypic variance of PTC sensitivity, illustrating the influence of rare variation on a common trait, as well as the relatively recent evolution of functionally diverse alleles at this locus.

24. **Cavanagh P, Attinger C, Abbas Z, Bal A, Rojas N, Xu Z.-R. Cost of treating diabetic foot ulcers in five different countries.** *Diabetes/Metabolism Research and Reviews*, **(2012);28 (SUPPL. 1): 107-111.**

Most estimates in the literature for the economic cost of treating a diabetic foot ulcer (DFU) are from industrialized countries. There is also marked heterogeneity between the complexity of cases considered in the different studies. The goal of the present article was to estimate treatment costs and costs to patients in five different countries (Chile, China, India, Tanzania, and the United States) for two hypothetical, but well-defined, DFUs at the extreme ends of the complexity spectrum. A co-author, who is a treating physician in the relevant country, was asked to choose treatment plans that represented the typical application of local resources to the DFU. The outcomes were pre-defined as complete healing in case 1 and trans-tibial amputation in case 2, but the time course of treatment was determined by each investigator in a manner that would be typical for their clinic. The costs, in local currencies, for each course of treatment were estimated with the assistance of local hospital administrators. Typical reimbursement scenarios in each country were used to estimate the cost burden to the patient, which was then expressed as a percentage of the annual per capita purchasing power parity-adjusted gross domestic product. There were marked differences in the treatment plans between countries based on the availability of resources and the realities of local conditions. The costs of treatment for case 1 ranged from Int$102 to Int$3959 in Tanzania and in the United States, respectively. The cost for case 2 ranged from Int$3060 to Int$188645 in Tanzania and in the United States, respectively. The cost burden to the patient varied from the equivalent of 6days of average income in the United States for case 1 to 5.7years of average annual income for case 2 in India. Although these findings do not take cost-effectiveness into account, they highlight the dramatic economic burden of a DFU for patients in some countries.

25. **Chalya PL , Mabula JB, Giiti G, Chandika AB, Dass RM, McHembe MD, Gilyoma JM. Splenic injuries at Bugando Medical Centre in northwestern Tanzania: A tertiary hospital experience** *BMC Research Notes*, **(2012); 5, art. no. 59 .**

Background: Splenic injuries constitute a continuing diagnostic and therapeutic challenge to the trauma or general surgeons practicing in developing countries where sophisticated imaging facilities are either not available or exorbitantly expensive. The purpose of this review was to describe our own experience in the management of the splenic injuries outlining the aetiological spectrum, injury characteristics and treatment outcome of splenic injuries in our local environment and to identify predictors of outcome among these patients. Methods. A prospective descriptive study of splenic injury patients was carried out at Bugando Medical Centre in Northwestern Tanzania between March 2009 and February 2011. Statistical data analysis was done using SPSS software version 17.0. Results: A total of 118 patients were studied. The male to female ratio was 6.4:1. Their ages ranged from 8 to 74 years with a median age of 22 years. The modal age group was 21-30 years. The majority of patients (89.8%) had blunt trauma and road traffic accidents (63.6%) were the most frequent cause of injuries. Most patients sustained grade III (39.0%) and IV (38.1%) splenic injuries. Majority of patients (86.4%) were treated operatively with splenectomy (97.1%) being the most frequently performed procedure. Postoperative complications were recorded in 30.5% of cases. The overall length of hospital stay (LOS) ranged from 1 day to 120 days with a median of 18 days. Mortality rate was 19.5%. Patients who had severe trauma (Kampala Trauma Score II 6) and those with associated injuries stayed longer in the hospital (P < 0.001), whereas age of the patient, associated injuries, trauma scores (KTS II), grade of splenic injuries, admission systolic blood pressure 90 mmHg, estimated blood loss > 2000 mls, HIV infection with CD4 200 cells/l and presence of postoperative complications were significantly associated with mortality (P < 0.001). Conclusion: Trauma resulting from road traffic accidents (RTAs) remains the most common cause of splenic injuries in our setting. Most of the splenic injuries were Grade III & IV and splenectomy was performed in majority of the cases. Non-operative management can be adopted in patients with blunt isolated and low grade splenic injuries but operative management is still indispensable in this part of Tanzania. Urgent preventive measures targeting at reducing the occurrence of RTAs is necessary to reduce the incidence of splenic injuries in our centre.

26. **Chalya PL, Mabula JB, Koy M, Kataraihya JB, Jaka H, Mshana SE, Mirambo M , Mchembe MD, Giiti G, Gilyoma JM. Typhoid intestinal perforations at a University teaching hospital in Northwestern Tanzania: A surgical experience of 104 cases in a resource-limited setting.** *World Journal of Emergency Surgery*, (2012); 7 (1): art. no 4 .

Background: Typhoid intestinal perforation is still prevalent in many developing countries. Despite the advances in the management, the outcome in these patients in resource limited countries is still very poor. This study was to review our experiences on the surgical management of typhoid intestinal perforation and to determine the prognostic factors for mortality in our local setting.Methods: This was a combined retrospective and prospective study of patients who were operated for typhoid intestinal perforation at Bugando Medical Centre between August 2006 and September 2011. Data collected were analyzed using SPSS computer software version 15.Results: A total of 104 patients were studied representing 8.7% of typhoid fever cases. Males were affected twice more than the females (2.6:1). Their ages ranged from 8 to 76 years with a median age of 18.5 years. The peak age incidence was in the 11-20 years age group. Fever and abdominal pain were the most common presenting

symptoms and majority of the patients (80.8%) perforated between within 14 days of illness. Chest and abdominal radiographs revealed pneumoperitonium in 74.7% of cases. Ultrasound showed free peritoneal collection in 85.7% of cases. Nine (10.2%) patients were HIV positive with a median CD4+ count of 261 cells/μl. The perforation-surgery interval was more than 72 hours in 90(86.5%) patients. The majority of patients (84.6%) had single perforations and ileum was the most common part of the bowel affected occurring in 86.2% of cases. Simple closure of the perforations was the most commonly performed procedure accounting for 78.8% of cases. Postoperative complication rate was 39.4% and surgical site infection was the most frequent complication in 55.5% of cases. Mortality rate was 23.1% and it was statistically significantly associated with delayed presentation, inadequate antibiotic treatment prior to admission, shock on admission, HIV positivity, low CD4 count (< 200 cells/μl), high ASA classes (III-V), delayed operation, multiple perforations, severe peritoneal contamination and presence of postoperative complications (P < 0.001). The median overall length of hospital stay was 28 days.Conclusion: Typhoid intestinal perforation is still endemic in our setting and carries high morbidity and mortality. This study has attempted to determine the factors that statistically influence mortality in typhoid perforation in our environment. Appropriate measures focusing at these factors are vital in order to deliver optimal care for these patients in this region.

27. **Chalya PL, Mabula JB, Ngayomela IH, Mbelenge N, Dass RM, Mchembe M, Ngallaba SE, Gilyoma JM. Geriatric injuries among patients attending a regional hospital in shinyanga Tanzania.*Tanzania Journal of Health Research*, (2012); 14 (1) .**

Geriatric injuries pose a major challenge to surgeons and general practitioners in developing countries. The objective of this study was to determine the prevalence, injury characteristics and outcomes of geriatric injury among patients at Shinyanga Regional Hospital in Tanzania. Data was collected using a pre-tested, coded questionnaire and analyzed using SPSS computer system. A total of 94 geriatric trauma patients constituting 22.7% of all trauma admissions were studied. The male to female ratio was 1.4:1. Their mean age was 68.5 years (ranged 60-98 years). Premorbid illness was reported in 38.3% of patients. Most injuries were intentional in fifty-three (56.4%) patients. Assaults, falls and road traffic crashes were the mechanism of injuries in 52.1%, 19.1% and 11.7% of cases, respectively. The majority of cases of assault were females accounting for 64.6%. The majority of injuries (81.9%) occurred at home. Pre-hospital care was recorded in 5.3% of cases. The musculoskeletal (72.3%) and head (66.0%) regions were commonly affected. Soft tissue injuries (wounds) (89.4%) and fractures (52.2%) were the most common type of injuries. The majority of patients (90.4%) underwent surgical treatment of which wound debridement was the most common procedure performed in 91.8% of cases. Complication rate was 39.4%. The mean length of hospital stay was 28.6 days (ranged 1 - 124 days). The length of hospital stay was significantly longer in patients with co-morbidities, long bone fractures and those with complications (P<0.05). Mortality rate was 14.9% and it was significantly related to advanced age, presence of pre-morbid illness, high injury severity score, severe head injuries and the need for ventilatory support (P< 0.05). In conclusion, traumatic injuries in elderly constitute a major but preventable public health problem in Shinyanga region and contribute significantly to high morbidity and mortality. Urgent preventive measures focusing at the

root causes of the injuries and early appropriate treatment is highly needed to reduce the occurrence, morbidity and mortality associated with these injuries.

28. **Chalya PL, Mabula JB, Rambau P, Mchembe MD, Kahima KJ, Chandika AB, Giiti G, Masalu N, Ssentongo R, Gilyoma JM. Marjolin's ulcers at a university teaching hospital in Northwestern Tanzania: A retrospective review of 56 cases** *World Journal of Surgical Oncology*, **(2012); 10 art. no. 38.**

Background: Marjolin's ulcer is a rare but highly aggressive squamous cell cancer that is most often associated with chronic burn wounds. Although many individual case reports exist, no comprehensive evaluation of Marjolin's ulcer patients has been conducted in our setting. This study was conducted to describe the clinicopathological presentation and treatment outcome of this condition in our local setting and to identify predictors of outcome.Methods: This was a retrospective study of histologically confirmed cases of Marjolin's ulcer seen at Bugando Medical Centre over a period of 10-years between January 2001 and December 2010. Data were retrieved from patients' files and analyzed using SPSS computer software version 15.0. **Results**: A total of 56 patients were studied. Male to female ratio was 2.1:1. Burn scars (89.3%) were the most common causative lesions of Marjolin's ulcer. The mean latent period between original injury and diagnosis of Marjolin's ulcer was 11.34 ± 6.14 years. Only 12.0% of the reported cases were grafted at the time of injury (P < 0.00). Most patients (48.2%) presented between one and five years of onset of illness. The lower limb (42.9%) was the most frequent site for Marjolin's ulcers. The median tumor size at presentation was 8 cm and the vast majority of patients (85.7%) presented with large tumors of ≥ 5 cm in diameter. Lymph node metastasis at the time of diagnosis was recorded in 32.1% of cases and distant metastasis accounted for 26.9% of cases. Squamous cell carcinoma (91.1%) was the most common histopathological type. Wide local excision was the most common surgical procedure performed in 80.8% of cases. Post-operative complication rate was 32.1% of which surgical site infection was the most common complication in 38.9% of patients. Local recurrence was noted in 33.3% of cases who were treated surgically. The mean length of hospital stay for in-patients was 7.9 ± 2.3 days. Mortality rate was 7.1%. According to multivariate logistic regression analysis, stage and grade of the tumor and presence of local recurrence were the main predictors of death (P < 0.001).**Conclusion:** Marjolin's ulcers are not rare in our environment and commonly occur in burn scars that were not skin grafted and were left to heal secondarily. A high index of suspicion is required in the management of chronic non-healing ulcers and all suspected lesions should be biopsed. Early recognition and aggressive treatment of Marjolin's ulcers and close follow-up are urgently needed to improve outcomes in our environment.

29. **Changamire FT, Mwiru RS, Peterson KE, Msamanga GI, Spiegelman D, Petraro P, Urassa W, Fawzi WW. Effect of multivitamin supplements on weight gain during pregnancy among HIV-negative women in Tanzania** *Maternal and Child Nutrition*, **(2012).**

Multivitamin supplementation has been shown to reduce the risk of low birthweight. This effect could be mediated through gestational weight gain. However, the effect of

multivitamin supplementation on weight gain during pregnancy has not been fully studied. The objective of this study was to examine the effects of multivitamins on pregnancy weight gain. We enrolled 8468 HIV-negative women from Dar es Salaam, Tanzania, in a randomised, placebo-controlled trial of multivitamins on birth outcomes. Women were randomly assigned to receive either a daily oral dose of multivitamin tablets or a placebo and were weighed every 4weeks from enrolment until the last visit before delivery. Intent-to-treat analyses were carried out to examine the effects of multivitamins on pregnancy weight gain. Multivariate linear and binomial regression models with the log-link function were used to examine the association of weight gain during pregnancy to birthweight. The overall total weight gain was 253g (SE: 69, P: 0.0003) more, while the overall 4weekly weight gain was 59g greater (SE: 18, P: 0.005) among women who received multivitamins compared to placebo. Women in the lowest quartile of gestational weight gain had babies with an average birthweight of 3030g (SD: 524), while women in the highest quartile had babies weighing 3246g (SD: 486), on average. Prenatal multivitamin supplements increased gestational weight gain, which was a significant predictor of birthweight.

30. **Chantry CJ , Young SL , Rennie W, Ngonyani M, Mashio C, Israel-Ballard K, Peerson, J, Nyambo M, Matee M, Ash D, Dewey K, Koniz-Booher P. Feasibility of using flash-heated breastmilk as an infant feeding option for HIV-exposed, uninfected infants after 6 months of age in urban Tanzania** *Journal of Acquired Immune Deficiency Syndromes*, **(2012); 60 (1): 43-50.**

Objective: Heat-treating expressed breastmilk is recommended as an interim feeding strategy for HIV-exposed infants in resource-poor countries, but data on its feasibility are minimal. Flash-heating (FH) is a simple in-home technique for heating breastmilk that inactivates HIV although preserving its nutritional and anti-infective properties. Our primary objective was to determine, among HIV-infected mothers, the feasibility and protocol adherence of FH expressed breastmilk after 6 months of exclusive breastfeeding. Design: Prospective longitudinal. Participants: One hundred one HIV-infected breastfeeding mothers. Setting: Dar es Salaam, Tanzania. Intervention: Peer counselors provided in-home counseling and support on infant feeding from 2 to 9 months postpartum. Mothers were encouraged to exclusively breastfeed for 6 months followed by FH expressed breastmilk if her infant was HIV negative. Clinic-based staff measured infant growth and morbidity monthly, and mothers kept daily logs of infant morbidity. FH behavior was tracked until 9 months postpartum using daily logs, in-home observations, and clinic-based and home-based surveys. Bacterial cultures of unheated and heated milk samples were performed. Results: Thirty-seven of 72 eligible mothers (51.4%) chose to flash-heat. Median (range) frequency of milk expression was 3 (1-6) times daily and duration of method use on-study was 9.7 (0.1-15.6) weeks. Mean (SD) daily milk volume was 322 (201) mL (range 25-1120). No heated and 32 (30.5%) unheated samples contained bacterial pathogens. Conclusions: FH is a simple technology that many HIV-positive women can successfully use after exclusive breastfeeding to continue to provide the benefits of breastmilk while avoiding maternal-to-child transmission associated with nonexclusive breastfeeding. Based on these feasibility data, a clinical trial of the effects of FH breastmilk on infant health outcomes is warranted.

31. **Chillo P, Lwakatare J, Lutale J, Gerdts E. Increased relative wall thickness is a marker of subclinical cardiac target-organ damage in African diabetic patients** *Cardiovascular Journal of Africa*, **(2012); 23 (8): 435-441.**

Objective: To assess the prevalence and covariates of abnormal left ventricular (LV) geometry in diabetic outpatients attending Muhimbili National Hospital in Dar es Salaam, Tanzania. Methods: Echocardiography was performed in 61 type 1 and 123 type 2 diabetes patients. LV hypertrophy was taken as LV mass/height2.7 > 49.2 g/m2.7 in men and > 46.7 g/m2.7 in women. Relative wall thickness (RWT) was calculated as the ratio of LV posterior wall thickness to end-diastolic radius and considered increased if ≥ 0.43. LV geometry was defined from LV mass index and RWT in combination. Results: The most common abnormal LV geometries were concentric remodelling in type 1 (30%) and concentric hypertrophy in type 2 (36.7%) diabetes patients. Overall, increased RWT was present in 58% of the patients. In multivariate analyses, higher RWT was independently associated with hypertension, longer isovolumic relaxation time, lower stress-corrected midwall shortening and circumferential end-systolic stress, both in type 1 (multiple R2 = 0.73) and type 2 diabetes patients (multiple R2 = 0.66), both p < 0.001. These associations were independent of gender, LV hypertrophy or renal dysfunction. Conclusion: Increased RWT is common among diabetic sub- Saharan Africans and is associated with hypertension and LV dysfunction.

32. **Chillo P, Bakari M, & Lwakatare J, Echocardiographic diagnoses in HIV-infected patients presenting with cardiac symptoms at Muhimbili National Hospital in Dar es Salaam, Tanzania: cardiovascular topics.** *Cardiovascular journal of Africa*.**2012;** *23*(2): **90-97.**

Objective: To determine the pattern of echocardiographic diagnoses in HIV-infected patients presenting with cardiac symptoms at Muhimbili National Hospital in Dar es Salaam, Tanzania. *Methods:* Patients known to be HIV positive and with cardiac complaints were prospectively recruited from the Hospital's care and treatment centre as well as from the medical wards. Clinical assessment, laboratory tests and echocardiography were performed. *Results:* A total of 102 patients were recruited from September 2009 to April 2010. The patients' mean age was 42.4 years and 68.6% were women. The most common diagnosis was pericardial effusion present in 41.2% of the patients. The effusion was large in 5.9% and small in 35.3% of the patients. Hypertensive heart disease was diagnosed in 34.3%, while pulmonary hypertension and dilated cardiomyopathy were present in 12.7 and 9.8%, respectively.*Conclusion:* Cardiac abnormalities are common in HIV-infected patients, particularly when they present with symptoms.

33. **Chisenga J, & Chande-Mallya R. Social media and professional networking: a case of information professionals in the SCECSAL region. 2012 . In XXth Standing Conference of Eastern, Cemtral and Southern Africa Library and Information Associations (SCECSAL), Nairobi, Kenya, 4-8 June; [Conference paper]. 2012.**

The purpose of the study was to establish the extent to which library and information professionals in the Standing Conference of Eastern, Central and Southern Africa Library

and Information Associations (SCECSAL) region are using social media applications for professional networking. The findings show that although the professionals are adopting social media applications, its use is more for social networking than professional networking purposes. Among those using the applications for professional networking, Social Networking Services (i.e. Facebook, LinkedIn, Google+ and MySpace) are their first choice applications; with Facebook being the most popular. They study also revealed that most of the professionals had taught themselves how to use social media. The major challenge faced in the use of social media was the lack of time in the effective use of the applications. The paper recommends that to enhance the use of social media for professional networking, social media must be integrated into individual networking activities and that library and information professionals and associations in the region should embrace social media applications.

34. **Chisenga J, & Chande-Mallya R. Social media and professional networking: a case of information professionals in the SCECSAL region.2012.**

The purpose of the study was to establish the extent to which library and information professionals in the Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL) region are using social media applications for professional networking. The findings show that although the professionals are adopting social media applications, its use is more for social networking than professional networking purposes. Among those using the applications for professional networking, Social Networking Services (i.e. Facebook, LinkedIn, Google+ and MySpace) are their first choice applications; with Facebook being the most popular. They study also revealed that most of the professionals had taught themselves how to use social media. The major challenge faced in the use of social media was the lack of time in the effective use of the applications. The paper recommends that to enhance the use of social media for professional networking, social media must be integrated into individual networking activities and that library and information professionals and associations in the region should embrace social media applications.

35. **Christopher R. Microalbuminuria as predictor of early glomerular injury in children and adolescents with sickle cell anaemia at muhimbili national hospital dar es salaam, tanzania 2012. Master of Medicine (Paediatrics and Child Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*
Background: Microalbuminuria (MA) is the earliest marker of various diseases affecting the renal system. Its relevance in children and adolescents with sickle cell anaemia (SCA), who are known to be prone to renal complications, has not been fully explored in our setting. Several studies have shown microalbuminuria to be prevalent among SCA children. It is now used extensively as a sensitive test of preclinical glomerular damage. Microalbuminuria in the early stages of sickle cell nephropathy is a hallmark of future deterioration of renal function. It is important to detect this early with routine surveillance. Intervention at this stage may prevent or at least delay the end stage renal disease. **Objectives**: To determine the prevalence of microalbuminuria and its clinical correlates in children and adolescents with SCA attending sickle cell clinic at Muhimbili National Hospital. **Materials and Methods**:

This was a hospital based descriptive cross-sectional study. Children and adolescents aged 3 – 18 years attending sickle cell clinic were randomly selected. Urine sample of all eligible children and adolescent with SCA was screened for microalbuminuria by special Micral urine taste strips (Cliawaived Microlalbumin 2-1 Combo, USA),with sensitivity and specificity of 96.5% and 98.3 respectively. The resting blood pressure (BP) measurements, haemoglobin level, were obtained and clinical events associated with microalbuminuria were recorded. Data were analyzed using Statistical Package for Social Science (SPSS) version 17 statistical packages. Chi-square test was used for categorical variables, and student *t* test for independent sample means. Binary logistic regression was used to analyze potential effect modifi **Results**: The study group was made up of 120 subjects aged 3 to 18 years (53% females). Microalbuminuria (MA) was found in 29/120 (24%). None of the clinical characteristics (painful crisis, blood transfusion, abnormal pressure) were significantly related with MA. Haemoglobin levels were significantly lower in subjects with MA than in those without MA (5.9±1.2 vs 7.4±1.0g/dL, respectively)p=0.001 . In multivariate logistic regression model of MA both Hb level and age remain in the final model as clinical correlates of MA. Higher Hb level showed a protective effect against MA (Odds ratio=0.55) p=0.001 while subjects with MA were more likely to have older age. (Odds ratio=1.7) p=0.001 **Conclusion and Recommendations:** MA is common among children and adolescents with SCA and directly related to age and inversely related to the haemoglobin levels. Urinary MA measurement is a simple and non-invasive screening biomarker which may be utilized as part of routine health care in children and adolescents with SCA. Screening for microalbuminuria seems prudent after age 6 to 7 years especially in those with severe anaemia. Longitudinal studies are essential to determine the significance of childhood microalbuminuria in the development of renal disease. ers of microalbuminuria.

36. **Clarer J. Prevalence of wuchereria bancrofti antigenemia and associated factors among children of school age born after initiation of mass drug administration with ivermectin and albendazole in rufiji district, Tanzania. Master of Science in Parasitology and Medical Entomology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*

Background: The National Lymphatic Filariasis (LF) Elimination Programme use Ivermectin and Albendazole mass drug administration (MDA) for the control of LF. Screening children of school age has successfully been used for mapping geographical distribution of LF worldwide. The implementation of MDA for LF in Rufiji district started in 2002 and up to 2011, nine rounds had been administered. The prevalence of LF after MDA was not known, thus this study aimed to screen children born during the period of programme implementation in order to assess the transmission status. Objective: This study aimed to determine the prevalence of Wuchereria bancrofti antigenaemia and associated factors among school age children born after the initiation of mass drug administration in Rufiji District. **Methodology:** A descriptive cross sectional study involving heads of household and school age children born during the implementation of the MDA program was carried out in Rufiji district. Blood samples were drawn from 413 standard one pupils. CFA was tested from the blood sample by using ICT cards in order to establish prevalence of W.bancrofti. A total of 270 heads of household were interviewed so as to establish the relationship between coverage, knowledge and prevalence of bancroftian filariasis. **Results** A total of 413 children between the age of 6 and 9 years were tested for CFA, 59 (14.3%)

being positive for Wuchereria bancrofti. Two thirds (66.8%) of the children did not take ivermectin and albendazole during the 2011 MDA. Prevalence of Wuchereria bancrofti was lower in younger children (6.4%) than older ones (40.4%). Prevalence of Wuchereria bancrofti was significantly high (70.8%) in children who did not swallow tablets than in those who swallowed the tablets (29.2%), (P = 0.015). Though the larger majority of households (97.0%) had heard of the disease, only 57.0% knew it was transmitted by mosquitoes, while 56.4% had no adequate knowledge on the disease and proper use of drugs. The study also found out that respondents have different cultural beliefs on the cause of the disease and there was improper drug distribution during MDA. **Conclusion** The prevalence of Wuchereria bancrofti in Rufiji is still high despite the ongoing elimination programme. Poor knowledge on the disease transmission, ix cultural beliefs and improper drug distribution were associated with the sustained high prevalence.

37. **Clark PD, Sui R, Premji Z, Thangadurai V, & Bhella SS. Capture of sulfur dioxide from Claus tail gas using fiber-like alumina-based adsorbents.** *Journal of Sulfur Chemistry*.**2012;** *33*(**2**): **131-142.**

This paper describes the preparation of alumina fibers doped with CaO, MgO and La_2O_3 and reports their use as SO_2 adsorbents. These materials were characterized using electron microscopy, powder X-ray diffraction and infrared analysis and were examined for their ability to capture SO_2 selectively from gas mixtures containing large quantities of H_2O, CO_2 and some O_2 at temperatures in excess of 353 K. Overall, it was found that these adsorbents could remove SO_2 selectively and that they could be regenerated by treatment with an H_2S-containing gas at approximately 600 K. Adsorption capacity was retained over several cycles. Fourier transform infrared analysis showed that SO_2 was adsorbed as free SO_2 and also in a combined form as sulfite and sulfate species. In the regeneration step, the adsorbed sulfur species were reduced to elemental sulfur and H_2S or were desorbed as SO_2. It is proposed that the chemistry described here could be applied to design of a process for capture of all sulfur species typically found in a Claus-based sulfur recovery system.

38. **Claude K, Lydia B, Paul W, John O, Joseph MJ, Nicholas O, & John Aluko , Otieno Nicholas Okemo, P O, P. Efficacy of Cryptolepis sanguinolenta root extract on slow-growing rifampicin resistant Mycobacterium tuberculosis.** *Journal of Medicinal Plants.*

We report here, the results from total crude methanol extract as well as serial ether, chloroform, and methanol extracts of the root of Cryptolepis sanguinolenta (Lindl) Schltr that were screened against three strains of Mycobacterium tuberculosis. The strains used included the pan sensitive H37Rv, the rifampicin-resistant TMC-331 and a wild strain of Mycobacetrium avium (MA) isolated from a Ugandan patient. The disc diffusion method was used for susceptibility tests on solid Middle brook 7H10 while the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined by the microtitre plate method using Middle brook 7H9 broth. We report that the total crude methanol extract showed the highest activity against H37Rv and TM-331 with complete clearance of quadrants at 50 mg/ml and zones of inhibition of 10.0 to 11 mm at 25 mg/ml concentration although it was not effective against M. avium. The corresponding MIC values were 1.17 mg/ml for H37Rv and 1.56 mg/ml for TMC-331. The values for isoniazid were 0.25 and 9.38 µg/ml for H37Rv and TMC-331, respectively, while for rifampicin the MIC value was 0.25 µg/ml for

H37Rv but it was not active on TMC- 331. Acute toxicity test gave an LD50 of 758.5 mg/kg body weight while the phytochemical analysis showed the presence of alkaloids, tannins and flavonoids.

39. **Colman L. Validity of ultrasound in estimating fetal weight in singleton pregnancies at muhimbili national hospital. Masters of (Obstetrics and Gynaecology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Background: Ultrasound to estimate fetal weight is done often in our country as part of investigations of pregnant women. In most of the developed countries and some developing countries, studies have been done to determine the validity of an ultrasound in estimating fetal weight, but no similar studies which have been done in Tanzania. **Objective:** To determine validity of ultrasound in estimating fetal weight in singleton pregnancies at MNH. **Methodology**: A diagnostic study was conducted from 1st June 2011 to 31st December 2011 at Muhimbili National Hospital Dar es salaam. All women who met inclusion criteria with indication for elective delivery were identified. Data on demographic, obstetric, social and medical history, the indication for elective delivery was collected. Ultrasound to estimate fetal weight was done 24 hours before delivery. The actual birth weight of the fetus was measured by using a desktop baby scale weighing machine. The estimated fetal weight by ultrasound was correlated with direct birth weight as gold standard. Data was entered in epi info version 6 and analyzed by using SPSS version 16. **Results:** A total of 800 pregnant women were recruited for the study. All of women consented and underwent an ultrasound estimation of fetal weight 24 hours before delivery. The median age was 30 years (range 25-34years). Most were married or cohabiting (97. 8%). about half of the participants (51.2%) had primary school education. The median actual birth weight was 3040 g (range 1200–5000 g). One hundred and twenty two infants (15.2%) weighed less than 2500 g and 31 (3.9%) weighed more than 4000 g. Good correlation was established between actual birth weight and estimated birth weight(r = 0.892, p<0.001), the sensitivity of ultrasound in detecting birth weight below 2500g was 59.8% and specificity was 99.3%. In the study population in estimating low birth weight, there was positive predictive value of 93.6%, negative predictive value of 93.2% and likelihood ratio of 87. The sensitivity of ultrasound in detecting birth weight more than 4000g was 54.8% and specificity was 97.8%. In this study population there was positi 47.2%, negative predictive value of 98.2% and likelihood ratio of 22 in estimating large birth weight babies. **Conclusion;** In a clinical setting Ultrasound is useful in diagnosing low birth weight babies while its usefulness in detecting large birth babies is questionable. As the sensitivity of ultrasound estimation of fetal weight to detect larger babies is poor, the use of such an objective measurement in the management of suspected macrosomia in singleton pregnancies should complement other clinical diagnostic methods.**Conclusion:** Acceptance of PPIUCD was relatively high probably because of its 'newness' in the community. For these women, the best opportunity to receive information about contraception is during child birth when they are in contact with healthcare providers. It is also important to emphasize and educate women on long term methods of contraception as majority of the women preferred short term methods despite their future pregnancy desires of more than three years. Couple counseling should also be promoted. The government needs to develop strategies to increase public awareness of the PPIUCD through different media sources.

40. **Conserve D, Sevilla L, Younge S, Mbwambo J, King G. Condom use among HIV-**

positive sexually active adults and partner's HIV status in Dar es Salaam, Tanzania
Journal of Health Care for the Poor and Underserved, (2012); 23 (1): 191-203.

Consistent and proper use of condoms has been found to be effective in preventing HIV transmission and other sexually transmitted diseases. We examined the predictors of condom use and knowledge of partner's HIV status among 731 HIV-positive individuals who had sex in the past six months. Data are from an incoming service form administered to clients who visited the Muhimbili University College of Health Sciences' Voluntary Counseling and Testing (VCT) site in Dar es Salaam, Tanzania between 1997-2008 (N545,071). Sixteen percent reported always using a condom in the past six months. Multivariate logistic regression revealed that age, and knowledge of partner's HIV status were the strongest predictors of consistent condom use. The risk of future HIV infections in this region remains high. Future efforts to prevent new HIV infections should aim to increase condom use, and prevention practices that facilitate HIV-positive individuals to communicate their HIV status with partners.

41. **Coovadia HM, Brown ER, Fowler MG, Chipato T, Moodley D, Manji K, Musoke P, Stranix-Chibanda L, Chetty V, Fawzi W, Nakabiito C, Msweli L, Kisenge R, Guay L, Mwatha A, Lynn DJ, Eshleman SH , Richardson P, George K, Andrew P , Mofenson LM, Zwerski S, Maldonado Y. Efficacy and safety of an extended nevirapine regimen in infant children of breastfeeding mothers with HIV-1 infection for prevention of postnatal HIV-1 transmission (HPTN 046): A randomised, double-blind, placebo-controlled trial** *The Lancet*, (2012); 379 (9812): 221-228.

Background: Nevirapine given once-daily for the first 6, 14, or 28 weeks of life to infants exposed to HIV-1 via breastfeeding reduces transmission through this route compared with single-dose nevirapine at birth or neonatally. We aimed to assess incremental safety and efficacy of extension of such prophylaxis to 6 months. Methods: In our phase 3, randomised, double-blind, placebo-controlled HPTN 046 trial, we assessed the incremental benefit of extension of once-daily infant nevirapine from age 6 weeks to 6 months. We enrolled breastfeeding infants born to mothers with HIV-1 in four African countries within 7 days of birth. Following receipt of nevirapine from birth to 6 weeks, infants without HIV infection were randomly allocated (by use of a computer-generated permuted block algorithm with random block sizes and stratified by site and maternal antiretroviral treatment status) to receive extended nevirapine prophylaxis or placebo until 6 months or until breastfeeding cessation, whichever came first. The primary efficacy endpoint was HIV-1 infection in infants at 6 months and safety endpoints were adverse reactions in both groups. We used Kaplan-Meier analyses to compare differences in the primary outcome between groups. This study is registered with ClinicalTrials.gov, number NCT00074412. Findings: Between June 19, 2008, and March 12, 2010, we randomly allocated 1527 infants (762 nevirapine and 765 placebo); five of whom had HIV-1 infection at randomisation and were excluded from the primary analyses. In Kaplan-Meier analysis, 1·1 (95 CI 0·3-1·8) of infants who received extended nevirapine developed HIV-1 between 6 weeks and 6 months compared with 2·4 (1·3-3·6) of controls (difference 1·3, 95 CI 0-2·6), equating to a 54 reduction in transmission (p=0·049). However, mortality (1·2 for nevirapine vs 1·1 for placebo; p=0·81) and combined

HIV infection and mortality rates (2·3 vs 3·2; p=0·27) did not differ between groups at 6 months. 125 (16) of 758 infants given extended nevirapine and 116 (15) of 761 controls had serious adverse events, but frequency of adverse events, serious adverse events, and deaths did not differ significantly between treatment groups. Interpretation: Nevirapine prophylaxis can safely be used to provide protection from mother-to-child transmission of HIV-1 via breastfeeding for infants up to 6 months of age.

42. **Cox SE, L'Esperance V, Makani J, Soka, D, Prentice AM, Hill CM, & Kirkham FJ. Sickle cell anemia: iron availability and nocturnal oximetry.** *Journal of clinical sleep medicine: JCSM: official publication of the American Academy of Sleep Medicine*,**2012;** *8***(5): 541.**
Study Objective: To test the hypothesis that low iron availability, measured as transferrin saturation, is associated with low nocturnal hemoglobin oxygen saturation (SpO_2) in children with homozygous sickle cell anemia (SCA; hemoglobin SS). **Methods:** This was a cross-sectional study of Tanzanian children with SCA who were not receiving regular blood transfusions. Thirty-two children (16 boys) with SCA (mean age 8.0, range 3.6-15.3 years) underwent motion-resistant nocturnal oximetry (Masimo Radical) and had steady state serum transferrin saturation and hematological indices assessed.**Results:** Higher transferrin saturation, adjusted for age and α-thalassemia deletion, was associated with lower nocturnal mean SpO_2 (p = 0.013, r^2 = 0.41), number of SpO_2 dips/h > 3% from baseline (p = 0.008, r^2 = 0.19) and with min/h with SpO_2 < 90% (p = 0.026 r^2 = 0.16). Transferrin saturation < 16% (indicative of iron deficiency) was associated with a 2.2% higher nocturnal mean SpO_2.**Conclusions:** Contrary to our hypothesis, higher iron availability, assessed by transferrin saturation, is associated with nocturnal chronic and intermittent hemoglobin oxygen desaturation in SCA. Whether these associations are causal and are driven by hypoxia-inducible factor and hepcidin-mediated upregulation of demand for iron warrants further investigation.

43. **Dabydeen DA, Jagannathan JP, Ramaiya N, Krajewski K, Schutz FA, Cho DC, Pedrosa I,& Choueiri TK. Pneumonitis associated with mTOR inhibitors therapy in patients with metastatic renal cell carcinoma: incidence, radiographic findings and correlation with clinical outcome.** *European Journal of Cancer*. **2012;***48***(10):1519-1524.**

Background: Mammalian target of rapamycin (mTOR) inhibitors are approved for use in patients with metastatic renal cell carcinoma (mRCC) and are under investigation in several other malignancies. We assessed the incidence, clinical presentation and computed tomography (CT) findings of pneumonitis associated with mTOR inhibitors in mRCC. Correlation between radiological findings of pneumonitis and clinical outcome was also determined. **Methods:** We retrospectively reviewed the clinical data and serial CT scans from patients with mRCC treated with either temsirolimus or everolimus. Serial chest CT scans were reviewed in consensus, read by two independent radiologists for the presence of pneumonitis, and corresponding clinical data were reviewed for symptoms and clinical outcome. The baseline and follow up CTs were reviewed to assess outcome to therapy. **Results:** The study population consisted of 46 pts, 21 treated with temsirolimus and 25 with everolimus (M:F 2.5:1; median 63 years, range 31–79 years). CT evidence of pneumonitis

was seen in 14/46 pts (30%), at a median of 56 days on mTOR inhibitor treatment (range 31–214 days). Respiratory symptoms at the time of radiographically detected pneumonitis, were observed in 7 pts. Stable disease (SD) by Response Evaluation Criteria in Solid Tumours (RECIST) was achieved in 12/14 pts (86%) who developed radiographic pneumonitis compared to 14/32 (44%) without pneumonitis ($p = 0.01$) The mean change of tumour long axis size for target lesions by RECIST, normalised for 30 days on therapy was –2.9% in the pneumonitis group and +4.3% in the non-pneumonitis group ($p = .002$). **Conclusions:** Preliminary data suggest that pneumonitis may be a marker of stable disease by RECIST and therefore, of therapeutic benefit. Careful patient assessment should be undertaken before the drug is discontinued.

44. **Daud H, Yahya N, Sagayan V, & Talib M. Visualization of Sediment Thickness Variation for Sea Bed Logging using Spline Interpolation.** *International Journal of Mathematical and Computational Sciences.* **6 2012; 6: 186-190**

This paper discusses on the use of Spline Interpolation and Mean Square Error (MSE) as tools to process data acquired from the developed simulator that shall replicate sea bed logging environment. Sea bed logging (SBL) is a new technique that uses marine controlled source electromagnetic (CSEM) sounding technique and is proven to be very successful in detecting and characterizing hydrocarbon reservoirs in deep water area by using resistivity contrasts. It uses very low frequency of 0.1Hz to 10 Hz to obtain greater wavelength. In this work the in house built simulator was used and was provided with predefined parameters and the transmitted frequency was varied for sediment thickness of 1000m to 4000m for environment with and without hydrocarbon. From series of simulations, synthetics data were generated. These data were interpolated using Spline interpolation technique (degree of three) and mean square error (MSE) were calculated between original data and interpolated data. Comparisons were made by studying the trends and relationship between frequency and sediment thickness based on the MSE calculated. It was found that the MSE was on increasing trends in the set up that has the presence of hydrocarbon in the setting than the one without. The MSE was also on decreasing trends as sediment thickness was increased and with higher transmitted frequency.

45. **Dennis LCC, Yahya N, Daud H, & Shafie A. (2012, September). Mathematical model of the seismic electromagnetic signals (SEMS) in non crystalline substances. In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012;(ICFAS2012) (Vol. 1482, No. 1, pp. 512-514): AIP Publishing.**

The mathematical model of seismic electromagnetic waves in non crystalline substances is developed and the solutions are discussed to show the possibility of improving the electromagnetic waves especially the electric field. The shear stress of the medium in fourth order tensor gives the equation of motion. Analytic methods are selected for the solutions written in Hansen vector form. From the simulated SEMS, the frequency of seismic waves has significant effects to the SEMS propagating characteristics. EM waves transform into

SEMS or energized seismic waves. Traveling distance increases once the frequency of the seismic waves increases from 100% to 1000%. SEMS with greater seismic frequency will give seismic alike waves but greater energy is embedded by EM waves and hence further distance the waves travel.

46. **Dong S, Kurtis JD, Pond-Tor S, Kabyemela E, Duffy PE, & Fried M. CXC ligand 9 response to malaria during pregnancy is associated with low-birth-weight deliveries.** *Infection and immunity***.2012;** *80***(9): 3034-3038.**
Placental infection with Plasmodium falciparum is associated with increased levels of proinflammatory cytokines, including tumor necrosis factor alpha (TNF-α) and gamma interferon (IFN-γ), and previous studies have associated increased levels of these cytokines with low birth weight (LBW), especially for malaria-infected primigravidae. To define the contribution of TNF-α and IFN-γ networks to placental-malaria-associated LBW, we measured chemokines induced by TNF-α and IFN-γ and related them to birth weight in a birth cohort of 782 mother-infant pairs residing in an area of P. falciparum holoendemicity in Tanzania. Among primigravidae, levels of CCL2, CXC ligand 9 (CXCL9), and CXCL13 were significantly higher during malaria infection in both the placenta and peripheral blood. Placental CXCL9 and CXCL13 levels were also higher in placental blood from secundigravidae and multigravidae. In multivariate analyses adjusted for known predictors of birth weight, malaria-infected primigravidae with placental CXCL9 levels in the lowest tertile gave birth to babies who weighed 610 g more than babies born to mothers with high CXCL9 levels. CXCL9 expression is induced by IFN-γ, and the strong association between birth weight and placental CXCL9 is consistent with previous observations relating IFN-γ to poor pregnancy outcomes.

47. **Duggan C, Manji K.P , Kupka R , Bosch RJ, Aboud S , Kisenge R, Okuma J , Fawzi WW. Multiple micronutrient supplementation in Tanzanian infants born to HIV-infected mothers: A randomized, double-blind, placebo-controlled clinical trial** *American Journal of Clinical Nutrition***, (2012); 96 (6): 1437-1446.**

Background: Multiple micronutrients (vitamin B complex and vitamins C and E) were effective at reducing infectious disease morbidity, HIV disease progression, and poor pregnancy outcomes in HIV-infected women. Objective: The objective was to evaluate whether direct supplementation of these micronutrients to HIV-exposed infants reduces mortality and morbidity. Design: Infants born to HIV-infected women from Dar es Salaam, Tanzania, were randomly assigned to receive daily oral supplementation of multiple multivitamins (vitamin B complex and vitamins C and E) or placebo from age 6 wk for 24 mo. All-cause mortality, hospitalizations, and unscheduled clinic visits were recorded. Morbidities were recorded during monthly follow-up visits. All mothers received multiple micronutrients throughout the study. Results: A total of 1193 infants were randomly assigned to receive micronutrients and 1194 to receive placebo. There were 138 child deaths in the multivitamin group and 124 deaths in the placebo group (HR: 1.13; 95% CI: 0.88, 1.44; P = 0.33). Hospitalizations (RR: 0.83; 95% CI: 0.62, 1.13; P = 0.23), unscheduled clinic visits (RR: 0.97; 95% CI: 0.85, 1.10; P = 0.59), and maternal reports of diarrhea (RR: 0.97; 0.87, 1.10; P = 0.64) were not significantly different between the 2 groups. Fever (P = 0.02) and

vomiting (P = 0.007) were significantly lower in the multivitamin group. Among 429 children whose mothers received antiretroviral (ARV) therapy, multivitamin use had no effect on mortality but was associated with a significant reduction in hospitalizations (P = 0.035), episodes of fever (P = 0.005), and episodes of fever and cough (P = 0.019). Conclusions: In the setting of maternal micronutrient supplementation, supplementation of HIV-exposed infants with vitamin B and vitamins C and E does not reduce mortality. Studies of nutrition supplementation in ARV-exposed infants may be warranted. This trial was registered at clinicaltrials.gov as NCT00197730.

48. **Erick M. Use of antenatal corticosteroids prior to preterm delivery: the practice at muhimbili national hospital, dar es salaam. Master of Medicine (Obstetrics and Gynaecology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam***.**

Background Foetal lung maturity has been a challenge to obstetricians and pediatricians in managing neonates born prematurely. In preterm babies RDS is the main cause of neonatal death and therefore the solution to the immaturity of foetal lungs is a primary concern**.** Several studies have shown the efficacy of antenatal corticosteroids prophylaxis in reducing RDS and intraventricular haemorrhage in preterm infants hence reducing neonatal death. This life saving therapy is now widely used throughout the world however the coverage of its use and practice in Tanzania which is one of the developing countries is not adequately documented. The present study evaluated the use of antenatal corticosteroids prior to preterm delivery as practiced at MNH. **Methodology** Data was collected by using a questionnaire which was supplemented by maternal and neonatal data from the case notes. The questionnaire contained fifty items grouped into four sections for survey of the mother and neonate. The maternal survey included questions concerning sociodemographic characteristics, obstetric history, antenatal care and items related to the administration of antenatal corticosteroids and to events surrounding the delivery and the health of the newborn. Eligible women were identified from the delivery book which contains the summary of ANC data, delivery data, maternal and neonatal outcome and destination of the mother after delivery and her premature neonate. Data was cleaned and analyzed by SPSS version 17 for windows. Chi-square test was used to find out the significant differences between **Results** The prevalence of antenatal corticosteroids use in preterm deliveries at MNH was 31%. For neonates born between 28 and 34 weeks of gestation 34% of theirs mothers were given dexamethasone of whom 76% received a complete course. About 51% of those with PPROM received dexamethasone of whom 57% received a complete course. Our study found that the use of dexamethasone was associated with a number of factors such as long time of stay in hospital, caesarian section delivery and seniority of the first doctor to attend the patient. Among the socio-demographic factors women with high level of education and those employed were more likely to be administered dexamethasone. **Conclusion** The use of antenatal corticosteroids among the pregnant mothers who had preterm delivery at MNH was low compared to other studies. However the prevalence was high for mothers directly admitted to MNH as compared to those referred from other hospitals for care of anticipated premature neonate. This observation necessitates education to the health workers on use of antenatal corticosteroids in anticipated preterm delivery especially in the peripheral hospitals. variables.

49. Ezeamama AE, Spiegelman, D, Hertzmark, E, Bosch R.J, Manji K.P, Duggan C, Kupka R, Lo MW, Okuma J.O, Kisenge R, Aboud S, Fawzi W.W. HIV infection and the incidence of malaria among HIV-exposed children from Tanzania *Journal of Infectious Diseases*, **(2012) ; 205 (10): 1486-1494.**

Objective: To determine whether human immunodeficiency virus (HIV) infection is associated with increased risk of malaria incidence and recurrence in children. Methods Newborn infants of HIV-infected mothers were enrolled at 6 weeks and followed for 2 years. HIV status was assessed by enzyme-linked immunosorbant assay and confirmed by HIV DNA polymerase chain reaction. Malaria was defined as (1) physician-diagnosed clinical malaria; (2) probable malaria, in which laboratory testing is requested for parasitemia; and (3) blood smear-confirmed malaria. Cox proportional hazards models estimated hazard ratios (HRs) for development of first and second malaria episodes, and generalized estimating equation models estimated malaria rate differences per 100-child-years in relation to time-updated HIV status. Results. Child HIV infection was associated with clinical (HR, 1.34; 95 confidence interval [CI], 1.12-1.61), probable (HR, 1.47; 95 CI, 1.19-1.81), and confirmed (HR, 1.67; 95 CI, 1.18-2.36) malaria episodes. Per 100 child-years, HIV-infected children experienced 88 (95 CI, 65-113), 36 (95 CI, 19-53), and 20 (95 CI, 9-31) more episodes of clinical, probable, and confirmed malaria episodes, respectively, than HIV-uninfected children. Among children with ≥1 malaria episodes, those with HIV infection developed second clinical (HR, 1.28; 95 CI, 1.04-1.57), probable (HR, 1.60; 95 CI, 1.26-2.14), and confirmed (HR, 2.27; 95 CI, 1.06-3.89) malaria sooner than HIV-uninfected children. Conclusions. HIV infection is a risk factor for the development of malaria. Proactive malaria disease prevention and treatment is warranted for all children, particularly those with HIV infection in settings of coendemicity.

50. Ezekiel MJ, Leyna GH, Kakoko DC, & Mmbaga EJ. Attitudes towards and perceptions of reproductive health needs of persons living with HIV/AIDS in rural Kilimanjaro, Tanzania. *Culture, health & sexuality*,**2012;** *14***(10), 1153-1165.**

The introduction of antiretroviral treatment has resulted in the resumption of socially productive and sexually active lives of people living with HIV/AIDS, together with the desire for children. However, factors affecting the reproductive health needs of people living with HIV/AIDS are not well understood. With this in mind, the aim of this paper was to investigate factors associated with these health needs using a qualitative approach. Findings indicate that attitudes and perceptions about reproductive health needs are influenced by fertility beliefs, the central role of family, procreation and the perceived social and clinical consequences of pregnancies among people living with HIV/AIDS. While there was mixed opinion about acceptability of people living with HIV/AIDS, having children, marriage and family were institutions important for partnerships maintenance and procreation. These findings suggest that living with HIV in a community with strong pro-life attitudes is challenging for people living with HIV/AIDS who do not have children. Apart from having to grapple with potential stigma of not having children, people living with HIV/AIDS also face social challenges in realising their reproductive choices. Interventions to address stigma,

societal changes and the integration of reproductive-health education into HIV care and treatment are needed.

51. **Fedrick F & Justin-Temu M. Factors contributing to non-adherence to diabetes treatment among diabetic patients attending clinic in Mwanza city.** *East African journal of public health***.2012;** *9***(3): 90-95.**

Background: Non-adherence to the diabetes ftreatment regimen is possibly the most common reason for poor health outcomes among people with diabetes. The rates of non-adherence to diabetes regimen tasks are highly variable, but have significant consequences on diabetes outcomes and the effectiveness of treatments. **Objective**: The aim of this study was to determine the proportion (magnitude) of non-adherence and its contributing factors among diabetic patients attending clinics in Mwanza city. Specifically the study determined the relationship between non-adherence and various variables which are; alcohol use, knowledge on diabetes, its treatment and complication, travel distance to reach the clinic by patients and medication side effects. **Results**: A total of 272 diabetic patients attending two diabetes clinics in Mwanza city were interviewed. Of the respondents, 118 (43.4%) were males. Their mean age was 51.22 (14.97 standard deviation). Among all respondents, 255 (93.8%) scored High level of knowledge on Diabetes and its treatment as compared with those with low knowledge making it not a significant contributor to non-adherence. Of the 272 patients, 77 (28.3%) reported non-adherent. Alcohol use, medication side effects and distance travelled to reach the clinic were the significant contributors to non-adherence (p = 0.001). **Conclusion**: Factors which were found contributing to non-adherence to diabetes treatment include: alcohol use, medication side effects and few clinics located far from most of patient. For improving adherence, availability of information with patients' perspectives about patients' expectations, needs and experiences in taking medication and about what might help them to become and remain adherent should be maintained.

52. **Field AS, Geddie W, Zarka M, Sayed S, Kalebi A, Wright CA, Banjo A, Desai M & Kaaya E. Assisting cytopathology training in medically under-resourced countries: Defining the problems and establishing solutions.** *Diagnostic cytopathology***.2012;** *40***(3): 273-281.**
Cytology is able to deliver rapid accurate diagnoses with minimal equipment and laboratory infrastructure at minimal cost, and this is especially so for fine needle biopsy (FNB), which is a powerful diagnostic tool in medically resource-poor environments, where histopathology laboratories are small in number and poorly supported financially. The crucial element in the development of cytology services is to train a sufficient number of well trained cytopathologists and cytotechnologists to create a 'critical mass' of personnel who not only provide routine diagnostic services, but also can train an ever expanding number of pathologists, cytotechnologists, and health workers.A review of practical programs to train cytopathologists and cytotechnologists in their own countries will be presented, including a recent series of FNB and cytology tutorials run in sub Saharan Africa. The need for local cytopathology programs and the potential for both local and visiting cytopathologists to provide a faculty will be discussed, as well as a range of possible programs which can bring African pathologists and trainee pathologists to Western institutions for periods of their

training.Ideally, the regional Societies of Cytology, including the recently formed West African Society of Cytology, will establish their own diagnostic protocols, training programs, syllabuses, examinations and accreditation and career pathways for both cytopathologists and cytotechnologists, and organize tutorials where they will invite overseas faculty to contribute.

53. **Finkelstein JL, Mehta S, Duggan C, Manji K.P , Mugusi, FM, Aboud S, Spiegelman D , Msamanga, G.I. , Fawzi, W.W.Maternal vitamin D status and child morbidity, anemia, and growth in human immunodeficiency virus-exposed children in Tanzania** *Pediatric Infectious Disease Journal*, (2012); 31 (2): 171-175.

Background: Vitamin D may help prevent adverse pediatric outcomes, including infectious diseases and growth failure, based on its role in immune and metabolic functions. We examined the association of maternal vitamin D status and pediatric health outcomes in children born to human immunodeficiency virus (HIV)-infected women. **Methods:** Vitamin D status was determined in 884 HIV-infected pregnant women at 12 to 27 weeks of gestation in a trial of vitamin supplementation (not excluding vitamin D) in Tanzania. Information on child morbidities, anemia and hypochromic microcytosis, and anthropometry was recorded through monthly clinic visits. Generalized estimating equations and Cox proportional hazards models were used to assess the relationships of outcomes with maternal vitamin D status. **Results:** A total of 39% of women had low vitamin D levels (<32 ng/mL). Children born to women with low vitamin D status were 1.11 times more likely to report cough during follow-up (relative risk [RR], 1.11; 95% confidence interval [CI], 1.02-1.21). No significant associations were noted for other respiratory symptoms, diarrhea, or anemia outcomes. Low maternal vitamin D status was associated with significantly increased risk of stunting (height-for-age z score, <-2; RR, 1.29; 95% CI, 1.05-1.59) and being underweight (weight-for-age z score, <-2; RR, 1.33; 95% CI, 1.03-1.71). **Conclusions:** Maternal vitamin D status may be important for preventing respiratory infections and ensuring optimal growth in HIV-exposed children.

54. **Finkelstein JL, Mehta S, Duggan C.P, Spiegelman D, Aboud S, Kupka R, Msamanga GI , Fawzi W.W. Predictors of anaemia and iron deficiency in HIV-infected pregnant women in Tanzania: A potential role for vitamin D and parasitic infections.**<i>Public Health Nutrition</i>, (2012); 15 (5): 928-937.

Objective: Anaemia is common during pregnancy, and prenatal Fe supplementation is the standard of care. However, the persistence of anaemia despite Fe supplementation, particularly in HIV infection, suggests that its aetiology may be more complex and warrants further investigation. The present study was conducted to examine predictors of incident haematological outcomes in HIV-infected pregnant women in Tanzania. Design: Prospective cohort study. Cox proportional hazards and binomial regression models were used to identify predictors of incident haematological outcomes: anaemia (Hb < 110 g/l), severe anaemia (Hb < 85 g/l) and hypochromic microcytosis, during the follow-up period. Setting: Antenatal clinics in Dar es Salaam, Tanzania. Subjects: Participants were 904 HIV-infected pregnant women enrolled in a randomized trial of vitamins (1995-1997). Results: Malaria, pathogenic protozoan and hookworm infections at baseline were associated with a two-fold increase in

the risk of anaemia and hypochromic microcytosis during follow-up. Higher baseline erythrocyte sedimentation rate and CD8 T-cell concentrations, and lower Hb concentrations and CD4 T-cell counts, were independent predictors of incident anaemia and Fe deficiency. Low baseline vitamin D (<32 ng/ml) concentrations predicted a 1·4 and 2·3 times greater risk of severe anaemia and hypochromic microcytosis, respectively, during the follow-up period.Conclusions Parasitic infections, vitamin D insufficiency, low CD4 T-cell count and high erythrocyte sedimentation rate were the main predictors of anaemia and Fe deficiency in pregnancy and the postpartum period in this population. A comprehensive approach to prevent and manage anaemia, including micronutrient supplementation and infectious disease control, is warranted in HIV-infected women in resource-limited settings - particularly during the pre- and postpartum periods.

55. **Francis JM, Kakoko D, Tarimo EA, Munseri P, Bakari M, & Sandstrom E. Key considerations in scaling up male circumcision in Tanzania: views of the urban residents in Tanzania.** *Tanzania Journal of Health Research.2012; 14***(1).**
Male circumcision (MC) reduces the risk of sexually transmitted infections (STI) including HIV. The WHO and UNAIDS recommend male circumcision as an additional intervention to prevent HIV infection. Tanzania is embarking on activities to scale up safe male circumcision for HIV prevention and other related health benefits. In line with this, it is crucial to assess views of the population using specific groups. This paper describes perceptions on male circumcision and strategies of enhancing uptake of male circumcision in urban Tanzania using members of the police force. **Methods :**We conducted a cross sectional survey among the police officers (PO) in Dar es Salaam, Tanzania. The PO serves as a source of the clinical trial participants in on-going phase I/II HIV vaccine trials. Three hundred and thirteen (313) PO responded to a self-administered questionnaire that comprised of socio-demographic characteristics, reasons for not circumcising, perceptions regarding circumcision, methods of enhancing male circumcision, communication means and barriers to promote circumcision. This was followed by a physical examination to determine MC status. **Results :**The prevalence of circumcision was 96%. Most (69%) reported to have been circumcised in the hospital. The reported barriers to MC among adults and children were: anticipation of pain, cost, fear to lose body parts, and lack of advice for adult's circumcision. Sensitization of parents who take children to the reproductive and child health services was recommended by most respondents as the appropriate strategy to promote MC. The least recommended strategy was for the women to sensitize men. Use of radio programs and including MC issues in school curricula as means of enhancing community sensitization regarding MC were also highly recommended. Other recommendations include use of public media, seminars at work and issuance of circumcision regulations by health authorities. **Conclusions :** The present study reveals male circumcision was common in a selected urban population. There are various barriers and channels of communication regarding male circumcision. In view of scaling MC in Tanzania, use of radio messages, inclusion of male circumcision in the school curricula and sensitization at the RCH clinics are likely to promote early medical MC.

56. **Francis JM, Kakoko D, Tarimo EA, Munseri P, Bakari M, & Sandstrom E. Key considerations in scaling up male circumcision in Tanzania: views of the urban**

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57. **Fredrick F, Ruggajo P, Maro E E, Iversen BM, & Basu G, Renal manifestations and associated factors among HIV infected children at Muhimbili National Hospital, Dar es Salaam, Tanzania.** *BMC Infectious Diseases*. **2012;** *12*(1): O11.
    Background: Human Immunodeficiency Virus infection is a global challenge and sub-Saharan African countries contribute significantly to this pandemic. Children are vulnerable and acquire the infection mostly from their mothers. Highly Active Anti-retroviral Therapy have led to dramatic changes in the incidence of opportunistic infections with reduction in morbidity and mortality, which has paved way for manifestation of non-infectious complications including renal complications. The aim of this study was to determine prevalence of microalbuminuria, proteinuria and associated factors among Tanzanian children. **Methods:** We recruited 240 HIV infected children attending care and treatment clinic. Microalbuminuria and proteinuria were determined by using dipstick and Microalbumin 2-1 combo test strips on spot urine respectively. Serum Creatinine, white blood cell and CD4 counts were determined. Renal ultrasound examinations were also performed. **Results:** Forty nine children (20.4%) had microalbuminuria and 17 (7.1%) had

proteinuria. Prevalence of proteinuria was significantly higher among children aged 120 months and above (p-value<0.05). Lower CD4 percent (< 25%) was a risk factor for microalbuminuria (p-value<0.01) and proteinuria (p<0.01). Mean CD4 count was significantly lower in children with microalbuminuria (p-value<0.05) and proteinuria (p-value <0.001). Twenty eight (11.7%) children out of 153 had increased cortical echogenicity on ultrasound examination. **Conclusion:**Proteinuria and increased cortical echogenicity were prevalent among HIV infected children who may indicate early onset of renal complications and this call for routine screening for early detection.

58. **Fredrick F. Microalbuminuria, proteinuria and associated factors among hiv infected children attending hiv care and treatment clinic at muhimbili national hospital, dar es salaam, Tanzania. Master of Science (Nephrology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Human immunodeficiency virus (HIV) infection is still a global challenge, and Sub-Sahara African countries including Tanzania contribute a great proportion in this epidemic disease**.** Children are among the most vulnerable group to HIV infection and acquire HIV infections mainly through mother to child transmission, which may occur in utero, intra-partum or through breastfeeding**.** HIV complications are attributed to either opportunistic infections or direct effects of virus to tissues. In the era of Highly Active Anti-retroviral Therapy (HAART), there has been a reduction in the incidence of opportunistic infections with reduction of both morbidity and mortality, which has paved way for manifestation of non-infectious complications including renal complications**.** The most common renal complication of HIV infection is HIV associated nephropathy whose earliest manifestation is microalbuminuria and proteinuria, and children of African descent are at risk of this complication. There is limited information on HIV associated nephropathy in children in Tanzania, although some studies have documented its occurrence in adults. **Objective:** This study determined the prevalence of proteinuria and microalbuminuria and associated factors among HIV infected children attending HIV care and treatment clinic at Muhimbili National Hospital. **Methodology:** This is a cross-sectional hospital based study which was conducted among HIV infected children aged between one year and 14 years. The children were consecutively recruited from paediatric HIV care and treatment clinic between February, 2011 and March, 2011. Standardized questionnaires were used to collect socio-demographic characteristics and clinical presentation of study participants. Spot urine was used to determine microalbuminuria and proteinuria using Microalbumin 2-1 combo test strips and dipsticks respectively. Serum creatinine, blood urea nitrogen, white blood cell count, CD4 count, haemoglobin level and renal ultrasound were performed. **Results:** A total of 240 HIV infected children were recruited into this study. One hundred and seven (44.6%) were female. Mean age of participants was 7.6 ± 3.7 years. Two hundred and nineteen (91.2%) were using anti-retroviral drugs. Forty nine children (20.4%) had microalbuminuria and 17 (7.1%) had proteinuria. Prevalence of proteinuria was noted to be significantly higher among children aged 10 years and above (p<0.05). Children with CD4+ percent < 25% were noted to have higher prevalence of microalbuminuria (p<0.01) and proteinuria (p<0.01) as compared to those with CD4+ above 25%. Children with microalbuminuria had significantly lower mean CD4+ count (937.4 ± 595.3 cell/μL) than those without microalbuminuria (1164.7 ± 664.3 cell/μL), p<0.05, similarly children with proteinuria had significantly lower mean CD4+ count (675.5 ± 352.3 cell/μL) as compared to those without proteinuria (1152 ±

662 cells/µL), p<0.001. Of the 153 children who had renal ultrasound performed 28 (11.7%) had increased cortical echogenicity, however no difference were noted on renal ultrasound findings between children with microalbuminuria/proteinuria and those without. **Conclusion:** Microalbuminuria and proteinuria were prevalent in HIV infected children, and children with low CD4 counts and percent were more likely to have both microalbuminuria and proteinuria. **Recommendation:** HIV infected children should be screened for proteinuria at initial visit and annually thereafter.

59. **Friis A, Åkerlund B, Gyllensten K, Aleman A, Bratt G, Sandström E, & Ernberg I. (2012). Epstein–Barr virus genome load is increased by therapeutic vaccination in HIV-l carriers, and further enhanced in patients with a history of symptomatic primary infection.** *Vaccine***.2012;** *30***(42): 6093-6098.**

Objective: Epstein–Barr virus (EBV) infection is an established risk factor for B-cell lymphomas in Human Immunodeficiency virus (HIV)-1 infected patients. A disturbed EBV-host relationship is seen in patient groups with a high risk for EBV-associated lymphomas. We have analysed this relationship by measuring EBV-DNA in the blood of HIV-1 carriers. **Method:** EBV-DNA load in B-cells was monitored by PCR in non- or insufficiently antiretroviral treated and rgp160-vaccinated HIV-patients. **Results:** Both asymptomatic HIV-infected and AIDS-patients showed a 25–40-fold increase in the number of B cell associated EBV-DNA copies compared to healthy controls. Patients included in a vaccine trial with recombinant HIV gp160 showed a 5-fold increase of EBV load compared to non-immunised patients and a 50-fold increase compared to healthy controls. There was no difference whether they received vaccine or "placebo". Vaccinated patients with a history of symptomatic primary HIV-1 infection (PHI) had a 280-fold increase in median EBV load compared to healthy controls, thus suggesting a synergistic effect between the vaccination and PHI, which hypothetically could affect lymphoma risk. **Conclusions:** We recommend analysis of EBV-load and long term follow up of lymphoma risk in all therapeutic HIV-1 vaccination trials.

60. **Gamaliel J. Utilization of the early infant diagnosis of hiv infection and its associated factors in coast region Tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam***.**
Background: Early infant diagnosis (EID) of HIV infection provides the opportunity for identifying, follow up and testing for HIV-exposed infants. This potentially confers benefit to both HIV-infected, uninfected infants and their families through proper counseling, linkages to comprehensive HIV care, safe infant feeding options and follow up for growth monitoring and development. In Tanzania, despite of availability of EID of HIV infection testing services, many children are left undiagnosed or diagnosed late that resulted to increased childhood HIV related mortalities. **Objectives**: To determine magnitude and factors influencing utilization of EID among HIV-exposed infants as tracer factors to be shared at different levels of policy making to facilitate planning and proper implementation of EID for HIV. **Methodology**: A cross-sectional study was conducted in Kibaha and Bagamoyo districts in Coast region involving all HIV-exposed infants aged between 4 weeks to 18 months born live to HIV-infected mothers. Data were collected through interviewing

mothers/guardians of HEI using a structured questionnaire, CTC cards were used to countercheck linkage to CTC. A checklist was used to collect data specific for health facilities through interview of health care providers and observation. Data were entered into Epidata version 3.1 analysed by Stata software 12.1. Analysis for predictors was done using univariate and multivariate logistic regression where p value of <0.05 was considered as statistically significant. **Results**: A total of 238 parents/guardians of HIV-exposed infants/children from five (5) facilities in Coast region were involved in the study. The HIV testing among HIV-exposed infants within the health care facility was 87%. The prevalence of HIV infection among HIV-exposed infants who were tested by HIV-1 DNA PCR method was 13%. All facilities had availability of commodities for EID of HIV, trained human resources, system of identification of HIV-exposed infants. In univariate analysis, early HIV testing during pregnancy, PMTCT ARV prophylaxis, disclosure of HIV status, enrollment to CTC, frequent attendance to EID services, co-trimoxazole prophylaxis and exclusive breast feeding were found to be significant predictors for testing of HIV-exposed infants. In multivariate analysis, monthly attendance to HIV EID clinic was independent significant predictor (AOR 2100, 95% CI, 3.3 -1314904 p<0.05) for testing of HIV-exposed infants. **Conclusions**: High utilization of EID and decreased prevalence of HIV infection coupled with availability of commodities for identifying and testing, skilled health care providers and PMTCT services coverage with availability of more efficacious drugs were found among Tanzanian HIV-exposed infants. Monthly attendance to HIV EID clinic predicted significantly the testing among HIV-exposed infants however cotrimoxazole prophylaxis was not a predictor for HIV testing among exposed infants. **Recommendations**: The Tanzania government should focus on implementation of global plans for elimination of Mother to child HIV transmission (e-MTCT) through strengthening of the existing system and collaboration with different partners stakeholders to scale up EID services to all levels of health facilities. The Ministry of Health should strengthen the existing health system to ensure uninterrupted supply of PMTCT/EID consumables and proper service delivery. The community should be sensitized on early HIV testing during pregnancy, appropriate PMTCT intervention and early and consistent follow up of mother infant pair for proper HIV intervention.

61. **Genet S, Lema Y, Lutale J. Oxidative Stress Correlates with Complications Among Diabetic Patients Attending a Diabetic Clinic in Muhimbili National Hospital, Dar es Salaam, Tanzania** *Indian Journal of Clinical Biochemistry*, **(2012) ; 1-4.**

In diabetes, persistent hyperglycemia results in increased production of free radicals especially oxygen free radicals, which can cause cell destruction and tissue injury resulting in cell dysfunction. With the premise that oxidative stress is a major cause of diabetic complications, we conducted a controlled laboratory based investigation on level of lipid peroxide levels in the serum of Type 1 and Type 2 diabetic patients attending Muhimbili National Hospital. From our clinical data it was observed that majority of the patients had higher waist to hip ration and body mass index, which suggests that the patients were either overweight or obese. The enrolled diabetic patients had higher lipid peroxide levels than controls and also Type 2 patients had higher lipid peroxide levels than Type 1 patients. Moreover, patients with known complications had higher lipid peroxide levels than patients

without complications. The lipid peroxide levels in the diabetic patients were significantly different from that of the control subjects enrolled in the study. A majority of the diabetic patients had a poorly controlled blood sugar. Our finding hints that despite the fact that diabetic patients in our clinic are on follow up, they are at a risk of developing coronary heart diseases, neuropathy and other secondary diabetic complications.

62. **Giliba RA, Lupala ZJ, Kayombo CJ, Kiungo YM, & Mwendwa P. The role and effectiveness of local institutions in the management of forest biodiversity in New Dabaga-Ulongambi forest reserve, Iringa Region-Tanzania.** *Chinese Journal of Population Resources and Environment*.**2012;** *10*(1): 111-115.

This paper examines the role and effectiveness of local institutions in the management of forest biodiversity in New Dabaga-Ulongambi Forest Reserve, Tanzania. Data were obtained through questionnaires, interviews, focus group discussions, participatory rural appraisal and field observations. The study revealed that the most remarkable local institutions connected to forest biodiversity management include: Village Natural Resources Management Committee (92%), tree nursery group (79.4%), beekeeping groups (61.1%), fish farming (43.3%), livestock rearing group (33.9%). Main activities carried out by local institutions which directly contribute to the sustainability of forest reserve include: forest patrols, fire extinguish, preparation of fire breaks, planting of trees along the forest boundaries, creation of awareness, arresting of forest defaulters, participation in income generation activities. For the purpose of realization that local communities are capable of managing forest biodiversity through their traditional institutions, the policy should provide tangible opportunity for local communities to meet their needs as they manage the forests.

63. **Guwatudde D, Ezeamama AE, Bagenda D, Kyeyune R, Wabwire-Mangen F, Wamani H, Mugusi F, Spiegelman D, Wang M, Manabe YC, Fawzi WW. Multivitamin supplementation in HIV infected adults initiating antiretroviral therapy in Uganda: The protocol for a randomized double blinded placebo controlled efficacy trial** *BMC Infectious Diseases*, (2012); 12, art. no. 304 .

Background: Use of multivitamin supplements during the pre-HAART era has been found to reduce viral load, enhance immune response, and generally improve clinical outcomes among HIV-infected adults. However, immune reconstitution is incomplete and significant mortality and opportunistic infections occur in spite of HAART. There is insufficient research information on whether multivitamin supplementation may be beneficial as adjunct therapy for HIV-infected individuals taking HAART. We propose to evaluate the efficacy of a single recommended daily allowance (RDA) of micronutrients (including vitamins B-complex, C, and E) in slowing disease progression among HIV-infected adults receiving HAART in Uganda.Methods/Design: We are using a randomized, double-blind, placebo-controlled trial study design. Eligible patients are HIV-positive adults aged at least 18 years, and are randomized to receive either a placebo; or multivitamins that include a single RDA of the following vitamins: 1.4 mg B1, 1.4 mg B2, 1.9 mg B6, 2.6 mcg B12, 18 mg niacin, 70 mg C, 10 mg E, and 0.4 mg folic acid. Participants are followed for up to 18 months with evaluations at baseline, 6, 12 and 18 months. The study is primarily powered to examine the

effects on immune reconstitution, weight gain, and quality of life. In addition, we will examine the effects on other secondary outcomes including the risks of development of new or recurrent disease progression event, including all-cause mortality; ARV regimen change from first- to second-line therapy; and other adverse events as indicated by incident peripheral neuropathy, severe anemia, or diarrhea.Discussions: The conduct of this trial provides an opportunity to evaluate the potential benefits of this affordable adjunct therapy (multivitamin supplementation) among HIV-infected adults receiving HAART in a developing country setting.

64. **Haraka F, Mohamed A, Kilonzo G, Shao H. Factors affecting hiv counselling and testing among adults in Muheza district, Tanzania.** *Tanzania Journal of Health Research*, **(2012); 14 (1).**

HIV/AIDS is one of the major public health problems affecting people worldwide. Counselling and testing is a process by which an individual undergoes confidential counselling to enable him/her to make an informed choice about his or her HIV status and to take appropriate actions. The objective of this study was to assess factors affecting HIV counselling and testing (HCT) among adults in Muheza district in north-eastern Tanzania. A total of 394 adults were interviewed using a standardized questionnaire. The majority of the study participants were females (N=213; 54.1%). Most of the respondents were either in or have completed secondary education. Almost two thirds of the study population (262) was not married. Seventy one percent of all participants viewed HCT positively. A significant proportion of married (17.7%) and un-married (16.5%) participants judged HCT as not essential as it would not change the test result. Sixty-eight percent of the respondents did not consider themselves at risk and most of them (71%) were married. Importantly, 26% reported being scared of discrimination. In conclusion our study results demonstrate that only half of the study population had adequate knowledge of HCT. Being married was considered as a 'protective' factor in terms HIV risk which indicates a misconception. These findings underscore the importance of proper HIV counselling and testing in this community so as to bridge the knowledge gap. It further demonstrates the need to address in detail misconceptions during HIV counselling and testing.

65. **Hardwick RJ, Amogne W, Mugusi S, Yimer G, Ngaimisi E, Habtewold A, Minzi O, Makonnen E, Janabi M, Machado LR, Viskaduraki M, Mugusi F, Hollox EJ, Aderaye G, Lindquist L, & Aklillu E. (2012). β-defensin genomic copy number is associated with HIV load and immune reconstitution in sub-saharan Africans.** *Journal of Infectious Diseases*, *206*(7): 1012-1019.**

AIDS, caused by the retrovirus human immunodeficiency virus (HIV), is the leading cause of death of economically active people (age, 15–59 years) in sub-Saharan Africa. The host genetic variability of immune response to HIV and immune reconstitution following initiation of highly active antiretroviral therapy (HAART) is poorly understood. Here we focused on copy number variation of the β-defensin genes, which have been shown to have anti-HIV activity, and are important chemoattractants for Th17 lymphocytes via the chemokine receptor CCR6. We determined β-defensin gene copy number for 1002 Ethiopian

and Tanzanian patients. We show that higher β-defensin copy number variation is associated with increased HIV load prior to HAART ($P = .005$) and poor immune reconstitution following initiation of HAART ($P = .003$). We suggest a model where variable amounts of β-defensin expression by mucosal cells, due to gene copy number variation, alters the efficacy of recruitment of Th17 lymphocytes to the site of infection, altering the dynamics of infection.

66. **Harris J. Assessing the rational use of essential medicines in public health facilities montserrado county, Liberia. Master of Science (Pharmaceutical Management) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*
Background: The Republic of Liberia has had a fourteen year civil war which has a devastating effect on the lives of people and healthcare infrastructures. Among the many health challenges, irrational use of essential medicines is of high priority. The determinants of the irrational use of essential medicines in the country are unknown. In order to obtain the magnitude at which medicines are used and advance possible recommendations for remedy, a descriptive crosssectional was conducted in 30 public health facilities in Montserrado County, Liberia administrative center. **Objective:** To assess the rational use of essential medicines in public health facilities in Montserrado County, Liberia. Methodology: A descriptive cross sectional study was conducted according to the (WHO) guidelines for monitoring and assessing country pharmaceutical situation. The study was conducted from March to June, 2012. About 30 TEMs using the WHO model list of 15 medicines (that is a standard set by WHO /DAP for sampling and study of medicines) and an additional 15 medicines of interest were assessed in the targeted healthcare facilities. Results: A total of 486 essential medicines were dispensed in 121 prescriptions. An average of 4 medicines per prescription was encountered. About 42 (67%) TEMs were prescribed by generic names. The availability of the TEMs in the hospitals ranged from 43.3% to 96.7% with St.Joseph Catholic Hospital (97%) ranking the first. In the healthcare centers, about 43% of TEMs were readily available with a range of (33% to 43%) whiles in clinics these ranged from between (13% to 90%). By therapeutic groups, the comparative availability of TEMs showed 93% for analgesics, 90% for antimalarial medicines, 83% for anti-infective agents, 27% for antihelminthics, 37% for vitamins, 43% for antacids, 37% for antihypertensive and 87% for other medicines. In this study, the majority 25 (70%) of the dispensers interviewed were nurse aides and minority being Pharmacists (3%). The pharmacists were mainly deployed in the referral hospitals. Of the 144 out-patients interviewed, 91 (63.3%) of them knew how to take medicines as per indications and 121 (84%) were satisfied with the healthcare services they received.**Conclusion:** There were no problems of medicines availability in the County. Significant variabilities of essential medicines availability, prescription and dispensing patterns of essential medicines were observed. Unequal medicines distribution patterns were observed between health facilities. Healthcare providers demonstrated the lack of basic skills and knowledge in pharmaceutical management. Irrational use of medicines: unnecessary prescription of injectables and use of brand names of medicines were evident. Rational use of medicines requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community. Irrational use of medicines on the other hand is the overuse, underuse or misuses of medicines which results in wastage of scarce resources and

widespread health hazards. Example, the use of too many medicines per patient (polypharmacy),inappropriate use of antimicrobial agents, over-use of injections when oral formulations would be more appropriate; failure to prescribe in accordance with clinical guidelines; inappropriate self-medications; and non-adherence to dosing regimens.1 In the prescription practice (lawful medical order by health provider of medicines for use by a patient), the use of brand (trade) names of medicines was observed. Skills in dispensing medicines and poor (inadequate) communication with patients are the main shortfalls encountered among health care providers. STGs were only available and used for malaria, TB and AIDS/HIV.

67. **Haule D. Involvement and incorporation of essential health interventions into health curriculum: a case of diploma in nursing schools dar es salaam, Tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background National governments and international agencies, have commitment in scaling up health interventions and meeting the Millennium Development Goals (MDGs). Scaling up health intervention means expanding health services that are only reaching small population to the national level. Examples of basic interventions are Malaria Treatment, ART, IMCI, FANC, EmONC, PMTCT, HIV and TB. The question is "to what extent, institutions training health service providers are involved and incorporating these essential health interventions into their health curriculum?" **Objective** The main objective of this study was to assess involvement of training institutions which offer diploma in nursing in incorporating essential health interventions (HIV/TB) into their health curriculum in Dar es Salaam, Tanzania. **Methodology:**This study involved four universities which offer diploma in nursing in Dar es Salam, one public (Muhimbili University of Health and Allied Sciences) and three were owned by private organizations (International Medical Training University- IMTU, Agakhani University and Hurbet Kairuki Memorial University. Two respondents were recruited for IDIs from MoHSW and ITECH. Four Principals of the schools and 21 tutors in four universities were interviewed. Qualitative data was analyzed using Framework Analysis while quantitative data were analyzed using frequencies and percentages. **Results** Health interventions are included in training curricula. Few tutors are involved in some stages of curriculum development and few have attended the courses to teach the interventions in recent years. There are also problem in availability and accessibility of teaching and learning materials for students. **Conclusions and Recommendations** It is concluded that training institutions are less involved in updating of curricula, tutors and teaching and learning materials. Seminars and workshops should also consider pre-service nurses and their tutors. This will result in having competent graduates and reduce greatly absenteeism from work place for in-service workers as most workshops are done outside working stations.

68. **Haule EE, Moshi J, NondoRS, Mwangomo DT, & Mahunnah RL. A study of antimicrobial activity, acute toxicity and cytoprotective effect of a polyherbal extract in a rat ethanol-HCl gastric ulcer model. BMC research notes. 2012; 5(1): 546.**

Background: The decoction of the aerial parts of *Rhynchosia recinosa* (A.Rich.) Bak. [Fabaceae] is used in combination with the stem barks of *Ozoroa insignis* Del. (Anacardiaceae), *Maytenus senegalensis* (Lam.) Excell. [Celastraceae] *Entada abyssinica*

Steud. ex A.Rich [Fabaceae] and *Lannea schimperi* (Hochst.)Engl. [Anacardiaceae] as a traditional remedy for managing peptic ulcers. However, the safety and efficacy of this polyherbal preparation has not been evaluated. This study reports on the phytochemical profile and some biological activities of the individual plant extracts and a combination of extracts of the five plants. **Methods**: A mixture of 80% ethanol extracts of *R. recinosa, O. insignis, M. senegalensis, E. abyssinica* and *L. schimperi* at doses of 100, 200, 400 and 800 mg/kg body wt were evaluated for ability to protect Sprague Dawley rats from gastric ulceration by an ethanol-HCl mixture. Cytoprotective effect was assessed by comparison with a negative control group given 1% tween 80 in normal saline and a positive control group given 40 mg/kg body wt pantoprazole. The individual extracts and their combinations were also tested for antibacterial activity against four Gram negative bacteria; *Escherichia coli* (ATCC 25922), *Salmonella typhi* (NCTC 8385), *Vibrio cholerae* (clinical isolate), and *Klebsiella pneumoniae* (clinical isolate) using the microdilution **method:** In addition the extracts were evaluated for brine shrimp toxicity and acute toxicity in mice. Phytochemical tests were done using standard methods to determine the presence of tannins, saponins, steroids, cardiac glycosides, flavonoids, alkaloids and terpenoids in the individual plant extracts and in the mixed extract of the five plants. **Results**: The combined ethanolic extracts of the 5 plants caused a dose-dependent protection against ethanol/HCl induced ulceration of rat gastric mucosa, reaching 81.7% mean protection as compared to 87.5% protection by 40 mg/kg body wt pantoprazole. Both the individual plant extracts and the mixed extracts of 5 plants exhibited weak to moderate antibacterial activity against four G-ve bacteria. Despite *Ozoroa insignis* being toxic to mice at doses above 1000 mg/kg body wt, the other plant extracts and the combined extract of the 5 plants were tolerated by mice up to 5000 mg/kg body wt. The brine shrimp test results showed the same pattern of toxicity with *Ozoroa insignis* being the most toxic ($LC_{50} = 10.63$ μg/ml). Phytochemical tests showed that the combined extract of the five plants contained tannins, saponins, steroids, cardiac glycosides, flavonoids and terpenoids. Flavonoids, tannins and terpenoids are known to have antioxidant activity.**Conclusion** The combined extract of the five plants exhibited a dose-dependent protective activity in the rat ethanol-HCl gastric ulcer model. The extracts also exhibited weak antibacterial activity against four Gram negative bacteria and low acute toxicity in mice and brine shrimps. Although the results support claims by traditional healers who use a decoction of the five plants for treatment of peptic ulcers, more models of gastric ulceration and proper animal toxicity studies are needed to validate possible clinical use of the polyherbal extract. It is also evident that the doses of the crude extracts showing protection of the gastric mucosa are too large for realistic translation to direct clinical application, but further studies using bioassay guided fractionation are important to either identify more practical fractions or active compound/s**.**

69. **Haule EE, Moshi MJ, Nondo RS, Mwangomo DT, & Mahunnah RL. A study of antimicrobial activity, acute toxicity and cytoprotective effect of a polyherbal extract in a rat ethanol-HCl gastric ulcer model.** *BMC research notes*.**2012; 5(1): 546.**

Background: The decoction of the aerial parts of *Rhynchosia recinosa* (A.Rich.) Bak. [Fabaceae] is used in combination with the stem barks of *Ozoroa insignis* Del. (Anacardiaceae), *Maytenus senegalensis* (Lam.) Excell. [Celastraceae] *Entada abyssinica*

Steud. ex A.Rich [Fabaceae] and *Lannea schimperi* (Hochst.)Engl. [Anacardiaceae] as a traditional remedy for managing peptic ulcers. However, the safety and efficacy of this polyherbal preparation has not been evaluated. This study reports on the phytochemical profile and some biological activities of the individual plant extracts and a combination of extracts of the five plants. **Methods**: A mixture of 80% ethanol extracts of *R. recinosa, O. insignis, M. senegalensis, E. abyssinica* and *L. schimperi* at doses of 100, 200, 400 and 800 mg/kg body wt were evaluated for ability to protect Sprague Dawley rats from gastric ulceration by an ethanol-HCl mixture. Cytoprotective effect was assessed by comparison with a negative control group given 1% tween 80 in normal saline and a positive control group given 40 mg/kg body wt pantoprazole. The individual extracts and their combinations were also tested for antibacterial activity against four Gram negative bacteria; *Escherichia coli* (ATCC 25922), *Salmonella typhi* (NCTC 8385), *Vibrio cholerae* (clinical isolate), and *Klebsiella pneumoniae* (clinical isolate) using the microdilution method. In addition the extracts were evaluated for brine shrimp toxicity and acute toxicity in mice. Phytochemical tests were done using standard methods to determine the presence of tannins, saponins, steroids, cardiac glycosides, flavonoids, alkaloids and terpenoids in the individual plant extracts and in the mixed extract of the five plants.

70. **Hirschhorn LR, Kaaya S.F, Garrity PS , Chopyak E, Fawzi MCS. Cancer and the 'other' noncommunicable chronic diseases in older people living with HIV/AIDS in resource-limited settings: A challenge to success.***AIDS***, (2012); 26 (1): S65-S75.**

Objective: There is considerable research around the morbidity and mortality related to noncommunicable diseases (NCDs), particularly cardiovascular disease and diabetes, among people living with HIV/AIDS (PLWHA) in resource-richer settings. Less is known about the burden and appropriate management of NCDs, particularly 'other' NCDs including cancer, renal, pulmonary, neurocognitive and mental health conditions, among older PLWHA in resource-limited settings (RLSs). We undertook a literature review of these other NCDs to explore what is currently known about them and identify areas of further research. Methods: Systematic literature review of published manuscripts and selected conference abstracts and reports. Results: Although there is growing recognition of the importance of these NCDs among the aging population of PLWHA in RLSs, significant gaps remain in understanding the epidemiology and risk factors among older PLWHA in these settings. Even more concerning is the limited available evidence for effective and feasible approaches to prevention, screening and treatment of these conditions. The burden of these NCDs is related to both the aging of the population of PLWHA and an increased risk due to HIV infection, other comorbidities associated with HIV infection or transmission risk and underlying risk factors in the general community. Results from resource-richer settings and RLSs highlight malignancies, neurocognitive and mental health as well as renal disease as the most significant challenges currently and likely to increase in the future. Conclusion: Although some lessons can be taken from the growing experience with NCDs in older PLWHA in resource-richer settings, additional research is needed to better understand their risk and impact and identify optimal models of care to effectively address this challenge in the areas where the majority of older PLWHA will be receiving care.

71. Howard SAH, Krajewski KM, Thornton E, Jagannathan JP, O'Regan K, Cleary J, & Ramaiya N. (2012). Decade of molecular targeted therapy: abdominal manifestations of drug toxicities—what radiologists should know. *American Journal of Roentgenology*.2012;*199*(1): 58-64.

Objective. Novel drugs targeting molecular pathways involved in tumor development have revolutionized cancer treatment. Radiologists often focus on therapeutic response when evaluating cancer patients and may miss important signs of drug toxicity. This article familiarizes radiologists with the complications of molecular targeted agents in abdominal solid organs, enabling early identification and appropriate intervention and thus reducing patient   morbidity   and   mortality.

72. Thornton E, Krajewski KM, O'regan KN, Giardino AA, Jagannathan JP, & Ramaiya N. (2012). Imaging features of primary and secondary malignant tumours of the sacrum. *Imaging*.2012; *85*(1011).

Malignant tumours of the sacrum may be primary or secondary. While sacral metastases are frequently encountered, a diagnostic dilemma can present when there is a single sacral bone tumour with no history or evidence of malignancy elsewhere in the body. Familiarity with the imaging features and clinical presentations of primary malignant bone tumours is helpful in narrowing the differential. This pictorial review will illustrate with both common and uncommon malignant sacral tumours CT, MRI and positron emission tomography/CT, highlighting the specific features of each.

73. Ibrahim T, Tleyjeh IM, and Gabbar O. Surgical versus non-surgical treatment of chronic low back pain: a meta-analysis of randomised controlled trials.2012.

To investigate the effectiveness of surgical fusion for chronic low back pain (CLBP) compared to non-surgical intervention, databases were searched from 1966-2005. The meta-analysis was based on the mean difference in Oswestry Disability Index (ODI) change from baseline to follow-up. Four studies were eligible (634 patients). The pooled mean difference in ODI was 4.13 in favour of surgery (95% CI: -0.82-9.08; p=0.10; I2=44.4%). Surgery was associated with a 16% pooled rate of complication (95% CI: 12-20%, I2=0%). The cumulative evidence does not support surgical fusion for CLBP due to the marginal improvement in ODI which is of minimal clinical importance. Copyright © 2006, British Editorial Society Of Bone & Joint Surgery

74. Ibrahim T, & Yehia A. Applying the Smart Grid Concept in Egypt: Challenges and Opportunities. In *15th Middle East Power CONference* **. 2012;** *(MEPCON'12)***.**

With an aging power grid and ever increasing demand for electricity, Egypt needs innovative ways to both generate electricity and manage how to consume it. This creates new challenges and opportunities which can offer smarter ways to manage electricity, from the utility all the way down to the individual consumers. These new technologies will become the building

blocks of our future smart grid. This paper reviews the main features of the Smart Grid concept, and therefore discusses some of the main challenges and offered opportunities for applying suitable applications of the Smart Grid in Egypt.

75. **Ibrahim T, Alayan H, & Mowaqet Y A). The effect of thyme leaves extract on corrosion of mild steel in HCl.** *Progress in Organic Coatings*. **2012;** *75***(4): 456-462.**

The aqueous extract of Thyme leaves was investigated for its efficacy as corrosion inhibitor for mild steel in 2 M HCl using weight loss measurements and various electrochemical techniques. Experimental results show that corrosion inhibition efficiency increases with concentration of the Thyme leaves extract. A corrosion inhibition efficiency of 84% was achieved in 2 M HCl. Polarization studies show that Thyme leaves extract acts as a mixed inhibitor. The adsorption of Thyme leaves extract on the steel surface is found to follow Langmuir adsorption isotherm.

76. **Ibrahim T, Ali K, Sroor A, El-Dine NW, El-Shershaby A, & El-Tayeb Z. Gamma activity as a guide for the building raw materials selection and controlling the environmental hazards . 2012.**

The spectrometric measurements can provide an alarm for the radiation activity and radioelement concentrations. The activity increase over the ambient background can be achieved by well calibrated gamma-spectrometers. In comparison between Wadi El-Dahl and Abu Zawal quarries for building raw materials (feldspar), the activity concentration of El-Dahl stream sediments are 54.5 and 44.5 Bq/kg for uranium and thorium respectively. While the activity concentrationof Abu Zawal rock quarry are 167.03 and 79.77 Bq/kg for uranium and thorium respectively. These activities yielding effective dose rates of 0.63 mSv/y for Wadi El-Dahl stream sediments and 1.48 mSv/y for Abu Zawal rock quarry. In summary, the spectrometric measurements are excellent selective tool to monitoring the environment against the radiation risk. In this aspect, Wadi El-Dahl stream sediment quarry considered as the more suitable for producing feldspar as a raw materials to building industry. In comparison, Abu Zawal rock quarry has a higher effective dose rate exceeds the international permissible limits which is 1 mSv/y. A total of 19 feldspar samples were completely described regarding their general chemical features by using x-ray fluorescence. From the study all the samples contain high concentration of barium and rubidium which can separate using different methods in order to use in different important industry.

77. **Ibrahim T, Begum A, Memon MU, Adeel S, & Parveen G. Thermo stability study of vero cell culture rabies vaccine in pakistan.2012.**

Introduction: Rabies, the acute fatal encephalomyelitis has been remained as one of the most feared, serious problem. Vero Cell Rabies Vaccine (VCRC) was quite stable vaccine with good efficacy and potency. In developing countries like Pakistan there was a need of checking the accelerated and real time thermostability of vaccines because of loop holes in the cold chain maintenance. Thermostability study of Vero Cell Rabies Vaccine at different interval of time and at different temperature will be helpful in the analysis of the loss of

effective titre up to its shelf life of 18 months. Material and **Methods**: The accelerated and real time thermostability of three lots Vero Cell Rabies Vaccine (RV-01-09, RV-06-09 & RV-09-09) manufactured at NIH-Pakistan was checked through the analysis of its effective titre (Potency test). During this in vivo study, mice were immunized through introduction of 2 doses of vaccine and then challenged by fixed titre of rabies virus to know the mortality rate. This test was periodically scheduled over the complete shelf life of the vaccine. **Results**: There were losses in titre in accelerated and real time thermostability study like 0.30 IU/Dose (7.46%), 0.42 IU/Dose (10.60%), 0.45 IU/Dose (10.79%) and 0.57 IU/Dose (14.18%), 0.69 IU/Dose (17.42%), 0.76 IU/Dose (18.22%) respectively. The above mentioned losses in virus titre of selected samples at 37°C and $2 - 8$°C did not alter the efficacy of the vaccines. Also the potency of the samples at each point of test remained higher than the specification (> 2.5 IU/Dose) up to its shelf life. **Conclusion**: Results of the Potency testing of Vero Cell Rabies Vaccine conclude that VCRV is quiet stable and maintenance of proper cold chain is recommended for delivery of potent vaccine in countries with high but ambient temperature.

78. **Ibrahim T, Farolfi A, Mercatali L, Ricci M, & Amadori D. Metastatic bone disease in the era of bone-targeted therapy: clinical impact.** *Tumori***. 2012;** *99* **(1): 1-9.**

Advances in the diagnosis and treatment of tumors by surgery, chemotherapy, biotherapy, radiotherapy and other modalities have increased the survival of cancer patients over the last 20 years. As a consequence, bone now represents the third most common site of metastatic involvement after the lung and liver. Approximately 20-25% of patients with neoplastic disease develop clinically evident bone metastases (BMs) during the natural course of their illness, with a further 50% of such lesions being identified during autopsy. BMs are the major cause of morbidity in cancer patients because of their epidemiological and clinical impact. Pain is the most frequent symptom in about 75% of patients but other serious complications can also occur, such as pathological fractures, spinal cord compression, hypercalcemia and bone marrow suppression. These complications worsen the patient's general condition and reduce patients' mobility, facilitating the development of lung infections, skin ulcers, deep vein thrombosis, etc., and ultimately reducing prognosis and quality of life. The frequency of serious complications depends on the site and type of lesions and the treatment administered. Over the last 10 years, the introduction of bisphosphonates for the treatment of patients with BMs has led to a marked decrease in the frequency of complications, thus improving quality of life and clinical outcome. Furthermore, progress in understanding the pathophysiology of bone metastases has resulted in the development of new bone-targeted molecules such as denosumab. We therefore felt it would be useful to report on the epidemiological, clinical and economic impact of bone disease in a cancer setting.

79. **Ibrahim T, Farolfi A, Scarpi E, Mercatali L, Medri L, Ricci, M, & Amadori D. Hormonal receptor, human epidermal growth factor receptor-2, and Ki67 discordance between primary breast cancer and paired metastases:** *clinical impact. Oncology* **2013;** *84* **(3):150.**

Objective: As hormone receptor and human epidermal growth factor receptor-2 (HER-2)

expression in primary breast tumors frequently differs from that of paired metastases, we first evaluated the discordance rate (DR) of estrogen receptor (ER), progesterone receptor (PgR), HER-2, and Ki67 in breast cancer patients and then assessed the discordance effect on prognosis. **Methods**: Of 145 cases reviewed, 120 with samples available from both primary tumors and paired metastases were included in the study. For each receptor, the DR was calculated as the proportion of discordant cases with respect to the total number of patients. **Results**: A change in ER status was observed in 19 cases (DR 16.4%), while PgR status was modified in 48 cases (DR 41.7%). HER-2 was altered in 21 cases (DR 17.5%), and Ki67 in 33 patients (DR 38.8%). Patients with Ki67 <20% had a significantly higher postrecurrence survival (PRS) compared to patients with Ki67 ≥20% (p = 0.0006). Patients with ER-positive tumors showed a trend towards higher PRS (p = 0.064) compared to ER-negative patients. No differences in PRS were seen among patients with altered PgR or HER2 status. **Conclusions**: Changes in the cell biology of breast cancer metastasis would seem to occur and biopsy could potentially guide the choice of treatment and provide useful information on prognosis

80. **Ibrahim T, Howard A W, Murnaghan ML, & Hopyan. Percutaneous curettage and suction for pediatric extremity aneurysmal bone cysts: is it adequate?. *Journal of Pediatric Orthopaedics*. 2012 *32* (8): 842-847.**

Background: The purpose of our study was to evaluate the effectiveness of treating extremity aneurysmal bone cysts (ABC) by percutaneous curettage compared with open intralesional excision. **Methods**: A retrospective review of 17 patients with histologically proven primary ABCs and no evidence of a secondary lesion treated either by percutaneous curettage or open intralesional excision with at least 24-month follow-up was undertaken. The percutaneous curettage group was uniformly treated on an outpatient basis using angled curettes under image guidance followed by intralesional evacuation. The primary outcome was radiographic healing using the Neer/Cole 4-grade classification. Complications were noted. **Results**: Seventeen patients with a mean age of 11.7 years (range, 1.7 to 17.5) were evaluated. Nine patients underwent percutaneous curettage and 8 had an open intralesional excision. The 2 treatment groups were comparable with regard to age, sex, number of procedures, morphologic type of ABC, and follow-up period. At follow-up, the proportion of patients with satisfactory healing (Neer/Cole grades I and II) were similar among the 2 groups (*P*=0.74). In the percutaneous curettage group, 2 cases recurred necessitating repeat procedures, whereas 1 case recurred in the open intralesional excision group and was successfully treated percutaneously. **Conclusions**: Percutaneous curettage is a safe and minimally invasive alternative for extremity ABCs that can be performed as an outpatient procedure. Not all ABCs require wide exposure and an open intralesional excision.

81. **Ibrahim T, Morejohn DP, Banchieri MJ, Stephanian A, Pavlidis JD, & Swanson DK. U.S. Stabilized ablation systems and methods. Patent Application . (2012); 13/473,311.**

Surgical systems and methods for administering an ablation treatment and other therapeutic or diagnostic protocols to a patient tissue involve a flexible stabilizer mechanism having an

inner recess and an ablation mechanism coupled with the stabilizer mechanism.

82. **Ibrahim T, Paolo A, Amatori F, Mercatali L, Ravaioli E, Flamini E, & Amadori D. Time-Dependent Pharmacokinetics of 5-Fluorouracil and Association With Treatment Tolerability in the Adjuvant Setting of Colorectal Cancer.** *The Journal of Clinical Pharmacology*. **2012** *52* **(3): 361-369.**

The authors evaluated the influence of 5-fluorouracil (5-FU) on treatment tolerability in 81 colorectal cancer patients given adjuvant 5-FU intravenously plus folinic acid for 6 cycles. The pharmacokinetics of 5-FU and its inactive metabolite 5-fluoro-5,6-dihydrouracil (5-FDHU) were measured on days 1 and 5 of the first chemotherapy cycle, 5 and 45 minutes after bolus administration. 5-FU clearance was significantly lower on day 5 (62.64 ± 20.16 L/h/m^2) than on day 1 (74.83 ± 31.61 L/h/m^2). The lower 5-FU clearance values also predicted the side effects during the entire course of chemotherapy. In particular, patients with low clearance values on day 1 had a further reduction in this parameter on day 5, associated with severe toxicities. In conclusion, 5-FU alters its clearance, which could be partly due to a reduction in 5-FDHU biotransformation. These findings have safety implications for poor metabolizers whose drug clearance may fall below the threshold during repeated treatment cycles.

83. **Ibrahim T, Qureshi A, McQuillan TA, Thomson J, Galea G, & Powe RA. Intra-operative washing of morcellised bone allograft with pulse lavage: how effective is it in reducing blood and marrow content?.** *Cell and tissue banking*. **2012;** *13* **(1): 157-165.**

The use of unprocessed bone carries a risk of transmission of blood borne diseases. Although models of infectivity are unproven, a theoretical risk of transmission of variant Creutzfeld-Jakob Disease, a human prion disease, exists as probable blood borne transmission has been reported in three cases. The aim of our study was to determine the effectiveness of standard operating theatre pulse lavage in removing protein, fat and double stranded Deoxyribonucleic acid (dsDNA) from morcellised bone allograft. Twelve donated femoral heads were divided into halves and milled into bone chips. One half of the bone chips were washed with pulse lavage, whereas, the other half acted as control. In order to determine the amount of protein, fat and dsDNA present in the washed and unwashed samples, a validated multistep washing protocol was used. Using the validated technique, simple intra-operative washing of morcellised unprocessed bone allograft removed a significant amount of the protein (70.5%, range: 39.5–85%), fat (95.2%, range: 87.8–98.8%) and DNA (68.4%, range: 31.4–93.1%) content. Intra-operative washing of morcellised bone allograft with pulse lavage may thereby reduce the theoretical risk of prion and other blood borne disease transmission. Combined with the known improved mechanical characteristics of washed allograft, we would recommend pulse lavage as a routine part of bone allograft preparation.

84. **Idindili B, Jullu B, Mugusi F, Tanner M. A case-control study of factors associated with non-adherent to antiretroviral therapy among HIV infected people in Pwani Region, eastern Tanzania***Tanzania Journal of Health Research*, **(2012); 14 (3) .**

Non-adherence is one of the major causes of treatment failure which leads to increased morbidity and mortality caused by opportunistic infections. Optimal anti-retroviral therapy (ART) adherence is essential for maximal suppression of viral replication and long term survival of patients. In order to develop effective public health interventions in the context of scaling ART services to peripheral areas, it is important to evaluate factors associated with non-adherence among HIV-infected individuals in Pwani Region. The purpose of this study was to identify factors related to nonadherence to ART among HIV infected people in Pwani Region eastern of Tanzania. A case-control study was carried out at Tumbi Hospital and Chalinze Health Centre in Pwani Region in eastern Tanzania. A structured questionnaire was used to assess non-adherence and adherence to doses instruction and time schedule. Patients with less than 95% adherence were defined as cases while those with more than 95% adherence became controls. A structured questionnaire containing factors known to be associated with non-adherence to ART in similar settings was administered. Univariate and multivariate conditional logistic regression was performed to identify factors associated with non-adherence. A total of 79 cases and 237 controls matched by age and sex were studied. A high proportion of cases and controls (77.2% and 84.8%) had good knowledge of ART benefits, adherence and eligibility. Majority of cases (73.3%) and controls (69.2%) used public transport to access ART services. More than half of cases (53.2%) missed clinic appointments due to lack of bus fare or other reasons and was associated with ART non adherence (mOR 4.2, 95%CI, 2.2-8.1 and 2.1,95%CI 1.2-4.2). Disclosure to confidants only and failure to disclose HIV-test positive status were associated with non adherence (mOR 3.3, 95%CI 1.3-8.5 and 2.3, 95%CI 1.2-7.1). Alcohol use was associated with non adherence to ART (mOR 1.9, 95%CI 1.4-3.7). Patients who were not satisfied with providers were more likely to be non adherence to ART (mOR 2.0, 95%CI 1.2-3.8). In conclusion, these findings show that adherence is a process which is depended on local specific adherence factors. Adherence improvement strategies need to consider site specific adherence determinants, patient experiences and concerns.

85. **Innocent E, Kaale E, & Mbwambo, ZH. Larvicidal activities of five Kotschya species against Culex quinquefasciatus Say (Culicidae: Diptera).** *International Journal of Biological and Chemical Sciences***. 2012; 6(2): 603-612.**

Resistance of mosquito vectors to the commonly used chemical insecticides is posing threats to human health. It is becoming necessary to identify safe, eco-friendly and effective alternative sources of larvicides in order to reduce mosquito menace. HPLC profiling of the chemical constituents in the stem and root bark ethanol extracts had similar pattern of chemical constituents except for *K. aeschynomenoides* which indicated to have large quantity of polar compounds compared to others. In this study, the ethanolic extracts and powders of five *Kotschya* species were tested against *Culex quinquefasciatus* Say. Chemical profiling of the stem and root bark ethanol extracts from *K. speciosa, K. thymodora, K. platyphylla, K. aeschynomenoides* and *K. strigosa* did not show any major differences in terms of their chemical composition. At 0.5 mg/ml, the root and stem ethanol extracts from *K. speciosa, K. thymodora* and *K. strigosa* exhibited high larvicidal activity ($\geq$ 70%) on the 8th day post treatment. Stem powder of *K. thymodora* and root powder of *K. speciosa* and *K. strigosa* had activity comparable to their respective extracts at 0.2% w/v and 0.4% w/v at the same

exposure time. This suggests that *Kotschya* species contain same or related compounds in varying quantities that are responsible for larvicidal activity.

86. Innocent E. A new isoflavone glycoside from dalbergia vacciniifolia (Fabaceae)*Scientia Pharmaceutica***, (2012);80(2):469-474.**

5,5'-Dihydroxy-2',4'-dimethoxy-7-[(6-O-β-D-apiofuranosyl-β-D-glucopyranosyl) oxy]isoflavone (1) was isolated as the major constituent of Dalbergia vacciniifolia root bark ethanol extract together with the four known compounds 5,7-dihydroxy-2',4',5'-trimethoxyisoflavone (3), 5,7-dihydroxy-2',4'-dimethoxy-isoflavone (4), 5-hydroxy-2',4',7-trimethoxyisoflavone (5) and 7-hydroxy-2',4',5'-trimethoxyisoflavone (6). Identification of compounds was achieved through extensive analysis of 1D and 2D NMR and MS spectroscopy.

87. Isanaka S, Aboud S, Mugusi F, Bosch RJ , Willett WC, Spiegelman D , Duggan C, Fawzi W.W. Iron status predicts treatment failure and mortality in tuberculosis patients: A prospective cohort study from Dar es Salaam, Tanzania.*PLoS ONE***, (2012) ;7 (5): art. no. e37350.**

Background: Experimental data suggest a role for iron in the course of tuberculosis (TB) infection, but there is limited evidence on the potential effects of iron deficiency or iron overload on the progression of TB disease in humans. The aim of the present analysis was to examine the association of iron status with the risk of TB progression and death. Methodology/Principal Findings: We analyzed plasma samples and data collected as part a randomized micronutrient supplementation trial (not including iron) among HIV-infected and HIV-uninfected TB patients in Dar es Salaam, Tanzania. We prospectively related baseline plasma ferritin concentrations from 705 subjects (362 HIV-infected and 343 HIV-uninfected) to the risk of treatment failure at one month after initiation, TB recurrence and death using binomial and Cox regression analyses. Overall, low (plasma ferritin<30 μg/L) and high (plasma ferritin>150 μg/L for women and>200 μg/L for men) iron status were seen in 9% and 48% of patients, respectively. Compared with normal levels, low plasma ferritin predicted an independent increased risk of treatment failure overall (adjusted RR = 1.95, 95% CI: 1.07 to 3.52) and of TB recurrence among HIV-infected patients (adjusted RR = 4.21, 95% CI: 1.22 to 14.55). High plasma ferritin, independent of C-reactive protein concentrations, was associated with an increased risk of overall mortality (adjusted RR = 3.02, 95% CI: 1.95 to 4.67). Conclusions/Significance: Both iron deficiency and overload exist in TB patients and may contribute to disease progression and poor clinical outcomes. Strategies to maintain normal iron status in TB patients could be helpful to reduce TB morbidity and mortality.

88. Isanaka S, Mugusi F, Urassa W, Willett WC, Bosch RJ, Villamor E, Spiegelman D,

Duggan C, Fawzi W.W. Iron deficiency and anemia predict mortality in patients with tuberculosis.*Journal of Nutrition*, (2012); 142 (2): 350-357.

Many studies have documented a high prevalence of anemia among tuberculosis (TB) patients and anemia at TB diagnosis has been associated with an increased risk of death. However, little is known about the factors contributing to the development of TB-associated anemia and their importance in TB disease progression. Data from a randomized clinical trial of micronutrient supplementation in patients with pulmonary TB in Tanzania were analyzed. Repeated measures of anemia with iron deficiency, anemia without iron deficiency, and iron deficiency without anemia were assessed as risk factors for treatment failure, TB recurrence, and mortality. The prevalence of anemia (hemoglobin < 110 g/L) at baseline was 64%, more than one-half of which was related to iron deficiency (mean corpuscular volume < 80 fL). We found no evidence of an association between anemia (with or without iron deficiency) or iron deficiency without anemia at baseline and the risk of treatment failure at 1 mo after initiation. Anemia without iron deficiency was associated with an independent, 4-fold increased risk of TB recurrence [adjusted RR = 4.10 (95% CI = 1.88, 8.91); P < 0.001]. Iron deficiency and anemia (with and without iron deficiency) were associated with a 2- to nearly 3-fold independent increase in the risk of death [adjusted RR for iron deficiency without anemia = 2.89 (95% CI = 1.53, 5.47); P = 0.001; anemia without iron deficiency = 2.72 (95% CI = 1.50, 4.93); P = 0.001; iron deficiency anemia = 2.13 (95% CI = 1.10, 4.11); P = 0.02]. Efforts to identify and address the conditions contributing to TB-associated anemia, including iron deficiency, could play an important role in reducing morbidity and mortality in areas heavily affected by TB.

89. **Isanaka S, Spiegelman D, Aboud S, Manji KP, Msamanga GI , Willet WC, Duggan C, Fawzi, W.W. Post-natal anaemia and iron deficiency in HIV-infected women and the health and survival of their children** *Maternal and Child Nutrition*,(2012) ; 8 (3): 287-298.

Prenatal iron supplementation may improve pregnancy outcomes and decrease the risk of child mortality. However, little is known about the importance of post-natal maternal iron status for child health and survival, particularly in the context of HIV infection. We examined the association of maternal anaemia and hypochromic microcytosis, an erythrocyte morphology consistent with iron deficiency, with child health and survival in the first two to five years of life. Repeated measures of maternal anaemia and hypochromic microcytosis from 840 HIV-positive women enrolled in a clinical trial of vitamin supplementation were prospectively related to child mortality, HIV infection and CD4 T-cell count. Median duration of follow-up for the endpoints of child mortality, HIV infection and CD4 cell count was 58, 17 and 23 months, respectively. Maternal anaemia and hypochromic microcytosis were associated with greater risk of child mortality [hazard ratio (HR) for severe anaemia=2.58, 95% confidence interval (CI): 1.66-4.01, P trend < 0.0001; HR for severe hypochromic microcytosis=2.36, 95% CI: 1.27-4.38, P trend=0.001]. Maternal anaemia was not significantly associated with greater risk of child HIV infection (HR for severe anaemia=1.46, 95% CI: 0.91, 2.33, P trend=0.08) but predicted lower CD4 T-cell counts among HIV-uninfected children (difference in CD4 T-cell count/μL for severe anaemia: -93,

95% CI: -204-17, P trend=0.02). The potential child health risks associated with maternal anaemia and iron deficiency may not be limited to the prenatal period. Efforts to reduce maternal anaemia and iron deficiency during pregnancy may need to be expanded to include the post-partum period.

90. **Jamil A, Yusoff MZ, Yahya N, & Zakariya M A. (2012, June). Design and parametric study of multiple element MIMO antennas for WLAN. In Intelligent and Advanced Systems (ICIAS), 2012 4th International Conference on. 2012; (Vol. 1, pp. 194-199): IEEE.**

Tremendous growth has been noticed in wireless communication technologies in recent years. The advent of the 4G systems in future have adopted multiple input multiple output (MIMO) as its key feature. Modern day antennas have been scaled down to fit in the compact hand held wireless communication devices. Due to this trend antenna engineers are compelled to design the antennas which are suitable to fit in the compact chassis of hand held terminals. The requirement of size reduction becomes even stringent in case of MIMO systems. It is more challenging to accommodate multiple antennas within a small perimeter of the congested device. Moreover, the mutual coupling or electrical interference between the multiple element antenna (MEA) deteriorates the potential benefits of MIMO system. In this paper a novel hybrid multiband Koch-meander Fractal antenna has been proposed for the application in the WLAN. The proposed single element antenna (SEA) has been optimized to yield all the bands of IEEE 802.11 a/b/g standard. Further, the authors have transformed the SEA into different MEA configurations i.e., two element antenna, two element antenna with enhanced inter element distance and three element antenna configuration for MIMO/diversity systems. The study on the MEA shows that when the antennas are tightly placed adjacent to each other they suffer from high mutual coupling due to lack of an isolation mechanism. However, the 3-D radiation patterns indicate that the mutual coupling between antennas introduced pattern diversity.

91. **Januarius H. Time of delivery and perinatal outcomes at muhimbili national hospital dar es salaam 2011. tanzania. master of medicine (obstetrics and gynaecology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Adverse perinatal outcomes in terms of 5thminutes Agar score < 7, and perinatal death (still birth and early neonatal death) are not only related to maternal health but also are best indicators of the quality of health care services. Perinatal death is much higher in developing countries; it is 10 times higher than in developed countries. According to Millennium Development Goals progress report, December 2010, Infant mortality rate in Tanzania was estimated to be 51 per 1000 live births. In a study done in 2006 at Muhimbili National Hospital PMR was found to be 65/1000 singleton deliveries and 116/1000 multiple deliveries. Preterm birth, infection and birth asphyxia are thought to be the main causes of death in newborn babies worldwide5. Staffing also has been implicated on causes of adverse outcomes. Understanding the factors contributing to the increased perinatal mortality and morbidity is the key for reduction of adverse perinatal outcomes. At MNH there are three working shifts for nurses; the morning shift has eight hours, the evening shift has 6 hours and

the night shift has 12hours. The purpose of this study was to determine the association between time of delivery (shifts) and perinatal outcomes in singleton deliveries at MNH. **Methodology:** This was a cross sectional study. All singletoned deliveries of gestation age > 28 weeks between 1st July 2011 to 31st October 2011, who met inclusion criteria and consented, were enrolled in the study. **Results**: During the study period there were 3193 deliveries. Five hundred and fifty seven (557) were excluded. The remaining 2636 singletoned deliveries were included in the analysis. There were 802(29.3%), 605(22.1%), and 1328 (48.6%) deliveries in the morning, evening and night shift respectively. Majority 2469(91.3%) of the deliveries were of term pregnancies. Sixty percent (59.7%) of the women had primary school education. Sixty three percent (63.4%) of mothers were admitted from home and, 35.2% were referrals. One thousand three hundred and twenty (50.0%) had spontaneous vertex delivery, 1236 (46.9%) had cesarean section, and 48(1.8%) had low cavity vacuum extraction and 32 (1.2%) had assisted breech delivery. Night time deliveries had more adverse perinatal outcomes as compared to morning and evening shifts. Ten percent (10.4%) had Apgar score less than 7 at 5minutes, 8.2% fresh stillbirth, 5.3% early neonatal death which was statistically significant difference (P-value=0.018, 0.001, and 0.026 respectively).Baseline characteristics of women, in terms of maternal education, referrals, prematurity and mode of delivery were equally distributed in all shifts. **Conclusion**: The night shift had significant adverse perinatal outcomes in terms of low Apgar score neonates, early neonatal death and fresh stillbirth as compared to morning and evening shifts. **Recommendations;** Staffing at night shift need to be improved since it is longer than other shifts and therefore it has more patients than morning and evening shifts. Shifting residents in 12hours shift instead of 24 hours shifts so as to reduce staff fatigue may improve perinatal

92. **Jin G, Innocent E, Chow B, Bian J, Dayan J, McCormick T, & Weinberg A. Differential modulation of human beta-defensin-3 expression in human oral epithelial cells by HPV oncoproteins E6 and E7: potential implication in oral cancer. Infectious Agents and Cancer. 2012; 7(Suppl 1): O11.**

Background: Human papillomaviruses (HPVs) are small, non-enveloped DNA viruses that infect stratified squamous mucosal and cutaneous epithelia, causing diseases ranging from benign warts to invasive tumors. Failure of the immune system to detect and clear persistent HPV infections frequently leads to the development of oral warts and cancer. HPV infection has been etiologically linked with oral warts and a subset of oral squamous cell carcinoma, particularly in HIV infected patients. The incidence of HPV-related oral lesions is increased in HIV+ subjects on highly active antiretroviral therapy (HAART). We previously showed that tumor cells in oral carcinoma in situ (CIS) lesions overexpress human beta-defensin-3 (hBD-3), an antimicrobial peptide with immunomodulatory capabilities. Expression of hBD-3 in CIS contributes to the local pro-tumor immune response by selectively chemoattracting tumor-associated macrophages and by enhancing tumor development and progression. **Results:**To elucidate mechanisms by which high-risk HPV could evade immune detection and clearing via infected epithelial cells, we investigated if oncoproteins E6 and E7 derived from high-risk HPV-16 modulate the innate immune response of infected epithelial cells and the role of HPV-induced gene expression in orchestrating local immunity. We have found that cancer cells of HPV-related oral and oropharyngeal squamous cell carcinoma biopsies

overproduce hBD-3. Introduction of an expression vector producing HPV-16 E6 or E7 oncogene into oral squamous cancer cell lines or primary oral epithelial cells increases the levels of hBD-3 mRNA and peptide. However, E6 derived from the low-risk HPV-11 is significantly less potent in promoting hBD-3 expression. Combination of oncogenic E6 and E7 in oral epithelial cells also shows reduced induction of hBD-3. Furthermore, the transactivity of an hBD-3 luciferase promoter construct is differentially stimulated by oncogenic E6 and E7 compared with MEKK1, a known inducer of hBD-3 expression. Although the pharmacological inhibitors for MAPK and PI3K reduce the transactivity of a 2.5 kb hBD-3 promoter reporter, they do not exhibit the inhibitory effect on the promoter reporter containing a 450 bp 3'-regulatory region. These data suggest that high-risk and low-risk early genes of HPV differentially modulate hBD-3 expression in oral epithelial cells.**Conclusion**:Our results suggest that oncoproteins of high-risk HPV strains induce higher levels of hBD-3 expression compared with early genes of low-risk HPV. The oncogenic E6 and E7 genes may contribute to overexpression of hBD-3 in the early oral lesion, which then leads to recruitment of tumor-associated macrophages to further develop and promote the progression of cancer.

93. **Joachim A, Nilsson C, Aboud S, Lyamuya EF, Ochsenbauer C,Wahren B, Sandström E, Biberfeld G, Ferrari G,. & Polonis, V. R. Antibody-mediated inhibition of HIV-1 elicited by HIV-I DNA priming and boosting with heterologous HIV-1 recombinant MVA in healthy Tanzanian adults.** *Retrovirology*.**2012.** *9*(2): O53.
Background:We evaluated HIV antibody (Ab) responses elicited by immunization, in a phase I/II placebo-controlled double blind trial using multiclade, multigene HIV-1-DNA prime boosted with HIV-MVA conducted among healthy volunteers in Tanzania (HIVIS03). Methods:Sixty HIV-uninfected volunteers, randomized into groups of 20 received placebo or 1 mg HIV-DNA intradermally (id) or 3.8 mg intramuscularly (im). DNA plasmids containing HIV-1 gp160 subtypes A, B, C; rev B; p17/p24 gag A, B and RTmut B were given at months 0, 1 and 3 using a needle-free Biojector device. HIV-MVA expressing CRF01_AE HIV-1 env, gag, pol was administered im by needle at months 9 and 21. Sera were tested at baseline, two months post-first and four weeks post-second HIV-MVA boosting. HIV Ab responses were tested using pseudoviruses and TZM-bl cells as well as luciferase-expressing infectious molecular clones (IMC-LucR) in PBMC-based assays. ADCC responses were tested using the flow cytometry GranToxiLux-based assay. Results:Neutralizing Ab activity was demonstrated only in the PBMC assay, and after the second MVA boost in 24 (83%) of 29 vaccinees against the clade CRF01_AE CM235 IMC and in 21 (72%) of 29 vaccinees against clade B SF162-IMC. NK cell depletion from PBMC targets resulted in a significant loss of HIV inhibition by vaccinee sera, indicating a role of Ab-mediated Fcγ-receptor function. Vaccine-induced ADCC responses were detected in 21 (75%) of 28 vaccinees after the second HIV-MVA boost. ADCC Ab titers did not differ significantly between id- (median 840, range 300-5400) and im-primed (median 880, range 400-3600) vaccinees (p=0.45). Conclusion:HIV-DNA priming followed by two HIV-MVA boosts elicited HIV-specific inhibitory and/or ADCC-mediating antibody responses in a high proportion of Tanzanian adults.

94. Joachim A, Nilsson C, Aboud S, Lyamuya EF, Robb M, Marovich M, Ochsenbauer C, Wahren B, Sandström E, Biberfeld G, Ferrari G,& Polonis VR.

Antibody-mediated inhibition of HIV-1 elicited by HIV-I DNA priming and boosting with heterologous HIV-1 recombinant MVA in healthy Tanzanian adults. *Retrovirology*.2012; *9*(2): O53.Background: We evaluated hiv antibody (ab) responses elicited by immunization, in a phase i/ii placebo-controlled double blind trial using multiclade, multigene hiv-1-dna prime boosted with hiv-mva conducted among healthy volunteers in Tanzania (HIVIS03). Methods: Sixty HIV-uninfected volunteers, randomized into groups of 20 received placebo or 1 mg HIV-DNA intradermally (id) or 3.8 mg intramuscularly (im). DNA plasmids containing HIV-1 gp160 subtypes A, B, C; rev B; p17/p24 gag A, B and RTmut B were given at months 0, 1 and 3 using a needle-free Biojector device. HIV-MVA expressing CRF01_AE HIV-1 env, gag, pol was administered im by needle at months 9 and 21. Sera were tested at baseline, two months post-first and four weeks post-second HIV-MVA boosting. HIV Ab responses were tested using pseudoviruses and TZM-bl cells as well as luciferase-expressing infectious molecular clones (IMC-LucR) in PBMC-based assays. ADCC responses were tested using the flow cytometry GranToxiLux-based assay. Results: Neutralizing Ab activity was demonstrated only in the PBMC assay, and after the second MVA boost in 24 (83%) of 29 vaccinees against the clade CRF01_AE CM235 IMC and in 21 (72%) of 29 vaccinees against clade B SF162-IMC. NK cell depletion from PBMC targets resulted in a significant loss of HIV inhibition by vaccinee sera, indicating a role of Ab-mediated Fcγ-receptor function. Vaccine-induced ADCC responses were detected in 21 (75%) of 28 vaccinees after the second HIV-MVA boost. ADCC Ab titers did not differ significantly between id- (median 840, range 300-5400) and im-primed (median 880, range 400-3600) vaccinees (p=0.45). Conclusion: HIV-DNA priming followed by two HIV-MVA boosts elicited HIV-specific inhibitory and/or ADCC-mediating antibody responses in a high proportion of Tanzanian adults.

95. Joachim A, Nilsson C, Aboud S, Lyamuya EF, Ochsenbauer C, Wahren B, Sandström E, Biberfeld G, & Ferrari G & Polonis VR. Antibody-mediated inhibition of HIV-1 elicited by HIV-I DNA priming and boosting with heterologous HIV-1 recombinant MVA in healthy Tanzanian adults. *Retrovirology*.2012; *9*(2): O53.

Background: We evaluated HIV antibody (Ab) responses elicited by immunization, in a phase I/II placebo-controlled double blind trial using multiclade, multigene HIV-1-DNA prime boosted with HIV-MVA conducted among healthy volunteers in Tanzania (HIVIS03). **Methods:** Sixty HIV-uninfected volunteers, randomized into groups of 20 received placebo or 1 mg HIV-DNA intradermally (id) or 3.8 mg intramuscularly (im). DNA plasmids containing HIV-1 gp160 subtypes A, B, C; rev B; p17/p24 gag A, B and RTmut B were given at months 0, 1 and 3 using a needle-free Biojector device. HIV-MVA expressing CRF01_AE HIV-1 env, gag, pol was administered im by needle at months 9 and 21. Sera were tested at baseline, two months post-first and four weeks post-second HIV-MVA boosting. HIV Ab responses were tested using pseudoviruses and TZM-bl cells as well as luciferaseexpressing infectious molecular clones (IMC-LucR) in PBMC-based assays. ADCC responses were tested using the flow cytometry GranToxiLux-based assay. **Results:** Neutralizing Ab activity was demonstrated only in the PBMC assay, and after the second

MVA boost in 24 (83%) of 29 vaccinees against the clade CRF01_AE CM235 IMC and in 21 (72%) of 29 vaccinees against clade B SF162-IMC. NK cell depletion from PBMC targets resulted in a significant loss of HIV inhibition by vaccinee sera, indicating a role of Ab-mediated Fcg-receptor function. Vaccine-induced ADCC responses were detected in 21 (75%) of 28 vaccinees after the second HIV-MVA boost. ADCC Ab titers did not differ significantly between id- (median 840, range 300-5400) and imprimed (median 880, range 400-3600) vaccinees (p=0.45). **Conclusion:** HIV-DNA priming followed by two HIV-MVA boosts elicited HIV-specific inhibitory and/or ADCC-mediating antibody responses in a high proportion of Tanzanian adults.

96. **Joho A. Factors affecting treatment compliance among hypertension patients in three district hospitals - dar es salaam. Master of Science Nursing (Critical Care & Trauma) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Hypertension is one of the most important cardiovascular risk factor but its control is still a challenge all around the world. Control of blood pressure can reduce cardiovascular morbidity and mortality, so the compliance to antihypertensive drugs and life style modification play an important role for the control of hypertension. With the guide of the Health Belief Model (HBM) conceptual framework, the study investigated factors affecting treatment compliance with antihypertensive therapy among patients attended three District hospitals in Dar es Salam. **Objectives**: The study was guided by seven objectives, (1) To determine the proportion of treatment compliance among hypertensive study participants 2) To identify social demographic factors that affect treatment compliance among hypertensive study participants. 3) To determine how perceived susceptibility to hypertension complications affect treatment compliance among hypertensive study participants 4) To determine how perceived severity of hypertension affect treatment compliance among hypertensive study participants 5)To identify perceived barriers to treatment compliance among hypertensive study participants. 6)To identify how perceived benefits affect treatment compliance among hypertensive study participants and 7) To identify how cues to action affect treatment compliance among hypertensive study participants **Methodology**: The study was descriptive cross- sectional design, which was conducted in three District hospitals in Dar es Salaam Region namely Amana, Mwananyamala and Temeke which are located in Ilala, Kinondoni and Temeke Municipalities respectively. The study population was hypertensive patients who are using antihypertensive treatment that attended the hypertensive clinics. A total of 135 patients were included in the study; the study used simple random sampling. In this study data were collected using structured questionnaires. Data were analysed using SPSS software programme, Frequency distribution, Bivariate analysis using chi-square and Pearson correlation to compare proportions while Multivariate analysis was done using Linear Multiple Regression to identify variables which are strongest predictor among variables of HBM.Where as, P value of equal and less than 0.05 was considered statistical significant. **Results**: In this study the proportion of participants with treatment compliance was 56%, the mean age (SD) of participants was 56.3 (±13.1) years. While Participants who were equal and below 64years of age (56.8%) had high level of treatment compliance compared to participants with equal or above 65 years of age (53.2%).The study also revealed that female

were more compliant (63.2%) compared to male (36.8%) statistically significant. Married participants (61.0%) were more compliant than single participants and employed patients were more compliant compared to non married participants. With the use of Bivariate analysis (Pearson correlation and Chi-square) the HBM variables (perceived susceptibility, perceived benefit, perceived barrier and cues to action) were statistically significant, the perceived severity did not show statistical significance. With multivariate analysis the strongest predictor was perceived barrier to hypertensive treatment. **Conclusion and Recommendation**: Hypertensive patients participated in this study showed low compliance to antihypertensive treatment, the most significant factors with demographic characteristic was sex (female being compliant) and with the guide of HBM the strongest predictor was perceived barrier to antihypertensive treatment. In order for the patients to be compliant with medication, Nurses/Doctors should give heath education to patients to every clinic visit on the importance of complying with medication, patients should be educated that antihypertensive drugs is for life use, the policy of cost sharing should be reviewed, strategies should be on the possibilities of giving antihypertensive drugs free of charge like BT and ARV drugs.

97. **Juma A. Prevalence of anemia and its associated factors in patients with chronic kidney disease at Muhimbili national hospital dar es salaam. Master of Medicine (Hematology and Blood Transfusion) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Chronic Kidney Disease (CKD) is a worldwide public health problem, the incidence and prevalence of which has increased in recent years in both developed anddeveloping countries including Tanzania. Anemia, being a major health problem in Tanzania, is also a major co-morbidity of CKD patients and is common in all stages but becomes more pronounced at the latter stages of kidney failure. The causes of anemia are multifactorial ranging from erythropoietin deficiency to nutritional anemia due to iron deficiency, vitamin B12 and folate deficiency. However, erythropoietin deficiency is the most significant cause of anemia in CKD. Anemia has direct adverse effects on cardiovascular disease (CVD) consequences, such as left ventricular hypertrophy (LVH), and accelerates progression of CKD. As a result, patients with anemia due to CKD are at increased risk of hospitalization with increased length of hospital stay, reduced quality of life and increased mortality. **Objective:** To determine the prevalence of anemia and its associated factors among CKD patients attending at MNH Nephrology unit in Dar-es-Salaam. **Methodology:** A hospital based cross sectional study was carried out among CKD patients aged 18 years and above at Muhimbili National Hospital. Consecutive recruitment was adopted and 100 CKD patients were recruited out of 1476 patients with different renal diseases who were attended from May, 2011 to October 2012 at Nephrology unit. MDRD equation was used to determine GFR and abdominal ultrasound was used to determine evidence of Kidneys damage. Endogenous Erythropoietin (EPO) measurement was determined in serum using an Enzyme linked immunosorbent assay EPO ELISA EIA-3646 (DRG Diagnostic GmbH Germany) and Iron status was established using transferring concentration, serum iron and serum ferritin levels . A questionnaire with structured interviews was used during data collection. Pre-coded data were entered into computer using

Epi Info software version 3.5.1 and then data were transferred to SPSS (Statistical Package for Social Sciences) version 17.0 for further cleaning, categorizing of continuous variables and eventually analysis. Vi **Results:** One hundred (100) patients with chronic kidney disease were consecutively sampled from a total of 1476 of patients with various forms of Kidney diseases who attended at the Nephrology unit during the period of data collection. All were of African origin with mean age 44.4+14.6 years and 61% were males. Majority of study subjects (91%) were in advanced CKD stages (stage 4 and 5) and overall prevalence of anemia was (97%) defined using WHO criteria. Of 82 study participants who were evaluated for EPO level, (87.8%) had low EPO production as response to a given hemoglobin level and there was no correlation between EPO level and hemoglobin value (r=0.012, p value=0.913) Fifty four (54%) study participants had iron deficiency whereby majority (37%) had functional iron deficiency and (17%) had absolute iron deficiency. **Conclusion:** Prevalence of anemia among CKD patients attending at Nephrology unit at MNH is high. Most of CKD patients showed evidence of inadequate endogenous EPO production and defective iron supply for erythropoiesis.

98. **Juya A. Post-outbreak malaria morbidity and uptake of interventions in muleba compared to kigoma district, tanzania 2010. Masters of Science in Applied Epidemiology. Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Introduction Malaria is widespread in tropical and subtropical parts of America, Asia and Africa. Approximately 350- 500 million malaria cases and, 1-3 million deaths are reported annually, majority are children under 5 years in Sub-Saharan Africa. In 2008, about 247million malaria cases and 1 million malaria deaths were reported, mostly among children living in Africa. About 90% of the burden of malaria occurs in Sub-Saharan Africa where it is mostly endemic with epidemics necessitating concerted community based control intervention strategies, which with sustained use would avert future malaria epidemics. Thus, the aim of this study was to assess current use of triple malaria interventions following control of malaria epidemic in Muleba district five years ago, compared to Kigoma district implementing regular malaria control intervention. **Methodology** This was a cross-sectional analytic study, conducted between November 2010 and March 2011 in Muleba and Kigoma rural districts. Multistage sampling was used to get required study subjects who were heads of households or their delegates. A total of 400 participants (203 from Muleba and 197 from Kigoma rural districts) were involved in the study. Data was collected using structured questionnaires, data entry and analysis was done using Epi Info version 3.5.1. **Results** Among the study households 207 (51.7%) were headed by females and 314 (78.5%) household head age was more than 30years. The ownership and use of LLIN was higher in Muleba 91.6% and 66.5% respectively compared to Kigoma where 78.3% and 59.9% of the study population reported to own and use LLIN respectively. Among the factors found to be statistically significant were; level of education of LLINs user and size of family (P<0.05) in Kigoma. Reported malaria in the past two weeks was very low (12.3%) in Muleba compared to Kigoma, which was much higher (54.7%). Use of ACT among individuals with history of malaria was higher (76.8%) in Kigoma compared to Muleba (68.0%), the difference was not statistically significant (P>0.05). Although ACT use was higher in individuals with age

>30yrs, level of education ≥ primary school, and households with under-fives ≥ 2, but these factors were not significant (P > 0.05). **Conclusion and Recommendation:**The study revealed that people in Muleba continued and sustained the use of LLIN and IRS compared to Kigoma which was not exposed to the malaria control interventions. There was also very low reported malaria morbidity in Muleba compared to Kigoma suggesting a likelihood of averting malaria epidemic in the near future. The combination of three interventions (LLINs, ACT and IRS) in Muleba to control the epidemic was sustained and it might have contributed to the low malaria prevalence five years after the epidemic has been controlled. Control strategies used in Muleba can be applied to other places to increase uptake and utilization of malaria interventions. More studies should be done to explore factors associated with uptake of these interventions in order to maximize their coverage and use such lessons elsewhere thus maximize their benefits.

99. **Kaaya EE, Macfarlane SB, Mkony CA, Lyamuya EF, Loeser H, Freeman P, Kirumira EK, Pallangyo K & Debas HT. Educating enough competent health professionals: Advancing educational innovation at Muhimbili University of Health and Allied Sciences, Tanzania.** *PLoS medicine*.**2012;** *9*(**8): e1001284.**
To address Tanzania's extreme shortage of health professionals, increasing numbers of universities are training many more health professionals; for example, one university admitted about 50 medical students a year from 1971 until 1996, whereas in 2009 six universities admitted 756 medical students—still many fewer than are needed based on population growth. Universities can support health professionals to build and maintain critical competencies by strengthening curricula and pre-service and internship training, and providing opportunities for continuing professional development. Muhimbili University of Health and Allied Sciences (MUHAS), the oldest health sciences academic institution in Tanzania, is partnering with the University of California San Francisco to transform MUHAS's educational environment through curricula revision and faculty development. We learned that enhancing the educational process involves a great deal of commitment from faculty across MUHAS and will only succeed if supported by long-term institutional reform. Our work will take years to evaluate; sharing of early lessons learned by institutions undergoing educational reform will start to build a body of knowledge and experience to inform transformation of health professions education in Tanzania and elsewhere.

100. **Kabali C, von Reyn CF, Brooks DR, Waddell R, Mtei L, Bakari M, Matee M, Pallangyo K, Arbeit RD, & Horsburgh J. In reply to 'Completion of isoniazid preventive therapy and survival in HIV-infected TST-positive adults in Tanzania'[Correspondence].** *The International Journal of Tuberculosis and Lung Disease*.**2012;** *16*(**4): 567-567.**
Setting: The World Health Organization recommends the use of isoniazid preventive therapy (IPT) for human immunodeficiency virus (HIV) infected patients with a positive tuberculin skin test (TST). However, due to concerns about the effectiveness of IPT in community health care settings and the development of drug resistance, these recommendations have not been widely implemented in countries where tuberculosis (TB) and HIV co-infection is common.Objective: To evaluate the effectiveness of IPT on survival and TB incidence among HIV-infected patients in Tanzania.Design: A cohort study nested within a randomized trial of HIV-infected adults with baseline CD4 counts of ≥ 200 cells/µ l was conducted to compare survival and incidence of active TB between TST-positive subjects who did or did not complete 6 months of IPT in the period 2001-2008.Results: Of 558 TST-

positive subjects in the analytic cohort, 488 completed 6 months of IPT and 70 did not. Completers had a decrease in mortality compared to non-completers (HR 0.4, 95%CI 0.2-0.8). However, the protective effect of IPT on the incidence of active TB was non-significant (HR 0.6, 95%CI 0.3-1.3).Conclusion: Completion of IPT is associated with increased survival in HIV-infected adults with CD4 counts $\geq$ 200 cells/μ l and a positive TST.

101.   Kabati CIA, Chande H, Maurice HB, & Fatima G. (2012). Testing for HIV Specific Proteins in Otherwise Western Blot Negative Theiller Albino Mice. *TaJONAS: Tanzania Journal of Natural and Applied Sciences***.2012;** *1***(2): 196-201.**

Theiller albino mice were used to carry out various experiments in order to check for the presence or absence of HIV specific proteins in Western-Blot negative blood donors and recipient mice.The results of this study have shown one or more HIV specific bands and some indeterminate bands for positive but not complete absence of bands. The most likely explanation is that the mice had antibodies that cross-reacted with one or more of the proteins of HIV.

102.   Kabati CIA, Matuja W, Mhidzeb GS, Swai ABM, & Hildebert MB. Traditional substances A and B (TANZED-PLUS®) in Tanzania.

Since 1983, when the first three AIDS cases were reported in Tanzania, the HIV epidemic has progressed differently in various population groups. The epidemic has caused over 60,000 deaths due to AIDS and there are more than 1.6 million infected persons. Of those infected, the government has a target of treating only 400,000. There is therefore a sound reason to study scientifically, locally effective and safe herbal treatments in order to control and if possible cure HIV infections. Tanzania is rich in traditional medicinal remedies. Many of these have not been studied and standardized by modern technology and therefore cannot be confidently be endorsed by the relevant health authorities for use by the public. Preliminary pre-clinical observation of the herbal product (tanzed-plus) on 40 patients who were followed up for 4 weeks, showed that 45% of patients had improved in their clinical status and were re-categorized to WHO clinical stage I in comparison to 5% at baseline. Patients with CD4 counts <100ul had decreased from 45% to 30% at 4 weeks of follow up. There were no major untoward effects reported in this observation. Therefore, there is a need to study the herbal product (tanzed-plus) further and in a large number of patients using scientific and acceptable protocol. This research was used as a model study protocol for evaluating the efficacy and safety of standardized herbal medicine for treating people living with HIV/AIDS.

103.   **Kabati CIA, Maurice HB, Mselle T, & Urio M. (2012). Evaluation of the Prevalence of Insulin Dependent Diabetes Mellitus in HIV/AIDS Patients in Muhimbili National Hospital, Dar es Salaam, Tanzania.** *TaJONAS: Tanzania Journal of Natural and Applied Sciences***.2012.** *1***(2): 164-173.**

Research findings in America have shown that HIV/AIDS patients are prone to the

development of not only opportunistic infections, but also endocrine disorders such as diabetes mellitus (DM). Several abnormalities of lipid and glucose metabolism have been reported in HIV patients receiving ARV drugs; however, the above study has not been reported in literature. In this research, a retrospective/prospective study was conducted to determine the prevalence of Insulin dependent diabetes mellitus in patients with and without HIV/AIDS in Muhimbili National hospital. A total number of 768 patient case files were evaluated. Of these, 384 patients had HIV/AIDS and were on treatment with ARV's. In addition 95 (24.7 %) of this group had diabetes, 49 (51.5%) males and 46 (48.5%) females. Non-Insulin dependent diabetes mellitus (NIDDM) accounted for 92.6% while Insulin dependent diabetes mellitus (IDDM) was 7.4%. The study also included the remaining 384 patients who had diabetes only, hence this acted as the control group with 209 (54.4%) males and 175 (45.6%) females. One sixty seven (43.4%) of the males had NIDDM while 42 (10.9%) had IDDM. Of the females 132 (34.3%) had NIDDM, 29 (7.6%) had IDDM and 14 (3.6%) had Gestational diabetes mellitus (GDM). The study further showed that the most commonly used hypoglycaemic agents were Daonil (52.0%) and Glucophage (25.5%). Other drugs used included diuretics (32.8%), antihypertensives, antibiotics (43.2%) and first line antiretrovirals. The most commonly used antihypertensive was Captopril (41.2%). The study also revealed that the occurrence of IDDM in patients on ARV's was found to be very low, only 2%, too little to be associated with HIV/AIDS or ARV therapy. Nonetheless, the date of first diagnosis (DoFD) of HIV confirmed that none of the patients in the ARV arm had diabetes. Therefore the occurrence of NIDDM can be associated with the HIV infection or the ARV therapy. However, this is surprising because none of the HIV/AIDS patients were on PI's.

104.   **Kabengula J. SDepression symptoms among HIV infected children aged 9-17 years attending care and treatment clinic at Pasada in Dar-es salaam, Tanzania. Master of Medicine Dissertation 2012. Muhimbili University of Health and Allied Sciences.**

Depression is a mental health disorder, which primarily affect mood. These symptoms are common among HIV infected children. The prevalence rate ranges from 23-45%worldwide. In Sub Saharan African countries, it ranges from 17.8% to 44%. In Tanzania, however such information is very limited. This study was conducted to cover for that existing knowledge gap. Objective: This aimed at determining the proportion of HIV infected children aged 9 – 17 years with depression symptoms attending at PASADA Care and Treatment Clinic in Dar es Salaam, Tanzania. Materials and methods: This was a descriptive health facility based cross-sectional study. Eligible children aged 9-17 years, attending the PASADA HIV Care and Treatment Clinics were enrolled. The study was conducted from June to November 2011. A structured questionnaire was used to gather information on the children's sociodemographic characteristics, ARV status and WHO HIV clinical stage. A Kiswahili translated version of Children's Depression Inventory (CDI) was used to assess the presence of depressive symptoms. Chi square or Fisher's exact test where applicable was used to establish differences among the groups. Results: In total 408 children fulfilled the study eligibility criteria and took part in the study. Their mean age was 13.3 (±2.2) years. The overall proportion of depression symptoms was 33.3%. Depression symptoms were more prevalent in children aged 13-17 (74.3%), WHO HIV clinical stage II and III and those who

were living with the relatives instead of their biological parents (63%). There was no significant statistical difference in proportion of depressive symptoms among male and female children.CONCLUSIONGenerally this study has established that, there is high proportion of HIV infected children with symptoms of depression among those who attend for HIV Care and Treatment Clinic. The symptoms were common among children who were older, living with relative(s) apart from their biological parent(s), WHO HIV clinical stage II and III. RECOMMENDATION The proportion of HIV infected children with symptoms of depression obtained from the current study emphasises the need for routine screening of these symptoms to all HIV infected children. Appropriate treatment or referral to psychiatrist should be done as to achieve the overall health of these children. However, Future studies should assess what are the independent predictors for the occurrence of depression symptoms among these children, so that we can develop evidence based and practical sound intervention to improve their physical and mental well being.

105. **Kacholi G. Assessment of factors influencing identification of the most vulnerable children in tanzania: experiences from morogoro rural district. Master of Arts in Health Policy and Management Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Tanzania is facing a rapid increase of most vulnerable children. MVC identification has been considered as an important step towards provision of adequate protection and essential services. MVC identification is facing challenges including identification of non eligible children and inadequate community involvement just to mention a few. **Objectives** This study aimed to assess factors influencing identification of most vulnerable children in Morogoro Rural district. The study was guided by the following specific objectives:-to explore the contribution of training towards identification of most vulnerable children, to assess the adequacy of workforce allocation for identification of most vulnerable children, to assess the adequacy of time allocation for identification of most vulnerable children and to explore the extent of policy/guidelines advocacy for identification of most vulnerable children were assessed. **Materials and Methods** A qualitative cross sectional study was conducted in Morogoro Rural district within two villages obtained from two wards. A total of 81 respondents were purposely selected as key informants. The data was obtained through in-depth interviews, focus group discussions and documentary reviews. Data were analyzed for themes in order to meet the objective of this study, thematic analysis approach was followed. **Results** The study reveals that training is lacking to undertake MVC identification. However, majority of the influential entities such as MVCC, ward and village leaders had little knowledge and exposure on the identification process. Inadequacy of workforce and time allocation for MVC identification was evident. Policies guidelines were not adequately advocated and disseminated to the council and community level. **Recommendations** The study recommends that more efforts should be made to train the key implementers and overseers of the MVC programme that includes identification of MVC. In addition, efforts should be made for policy advocacy and dissemination. Finally MVCC should be empowered to enable them to fulfill their undertakings.

106. **Kagashe GA, & Msela B. Self medication among patients seen at ophthalmology**

clinics at four hospitals in dar es salaam tanzania. *Self*.2012; *2*(5): 21-25.

Self medication practices with eye medicines among patients attending eye clinics and factors that lead to self-medicate were assessed. Patients visiting eye clinics were interviewed with the aid of a structured questionnaire composed of closed and open ended questions. A total of 358 respondents were interviewed. Among these 59.8% admitted to have used eye medicines before coming to hospital. Eighty eight percent 88.6% used modern medicines, 3.4% used traditional medicines and 7% used both modern and traditional medicines. Traditional eye medicines used were in liquid form, of which 68% were from plant sources, 16% salty water and 16% honey. The major sources of the eye medicines used were from pharmacies 41.6%, and hospitals 33%. Only 24.3% of respondent knew the names of the medicine used. Of the medicines used 66.7% were antibiotics. Fifteen percent 15.4% of respondents experienced side effect after self medication including blindness. Main factors influencing self medication were living far from hospital, and high cost of treatment in the formal health care facilities. It is concluded that self medication with eye medicines is common among the population interviewed. Health education on appropriate medicine use and dangers of using eye medicines without professional advice is needed.

107.   **Kaijage H. basis for climate change adaptation in Africa: Burdens ahead and policy options***International Journal of Climate Change Strategies and Management*, **(2012) ; 4 (2): 152-160.**

Purpose: The purpose of this paper is to review and document some of the climate change impacts which may burden the African continent, and to suggest policy options for adaptation. Design/methodology/approach: The paper presents a comprehensive review of published papers on climate change impacts and adaptation. Findings: It has been documented that by 2050, the world will have to limit emissions of all greenhouse gases to the equivalent of 400 GT of carbon in order to stand a 75 per cent chance of avoiding more than 2°C of warming. This is practically impossible because there are not enough resources and technology to achieve that target. Even if all of the emissions are stopped in next few years, it will take the next 40 years for the world to follow its current trend before full recovery. Thus, climate will continue to change, its impacts will continue to increase and Africa is placed as the most vulnerable continent. The only best solution is that the vulnerable population should be first in line for support to adapt to climate change impacts. In such instances adaptation policy should recognise and support a wide range of options for building resilient and sustainable livelihoods, enhancing opportunities available for adaptation, without ignoring the need to address the existing developmental challenges. Research limitations/implications: This paper relies on secondary source of information. Practical implications: The paper is a valuable input towards the preparation of adaptation policy in developing countries. Originality/value: This paper relied on review of secondary data (published articles) thus providing critical findings from a number of field studies.

108.   **Kajeguka D, Mwanziva C, Daou M, Ndaro A, Matondo S, Mbugi E, Dolmans W, Chilongola J.CD36 c.1264 T>G Null Mutation Impairs Acquisition of IgG Antibodies to Plasmodium falciparum MSP1- 19 Antigen and is Associated with Higher**

Malaria Incidences in Tanzanian Children *Scandinavian Journal of Immunology*, **(2012); 75 (3): 355-360.**

Polymorphisms in genes that encode crucial signalling molecules have been proposed as factors that influence susceptibility to, and outcome of malaria. We studied the role of a mutation, c.1264 T>G, that causes CD36 deficiency on IgG responses to MSP-1 19 antigen and malaria incidence. Children were genotyped for the c.1264 T>G mutation at the beginning of the study using PCR-RFLP. IgG levels [optical density (OD) readings] and per cent seropositivity to MSP-1 19 were determined at baseline by ELISA. Children were followed for 12months for acquisition of anti-MSP-1 19 IgG antibody and malaria incidence. We observed a significant increase in the production of anti-MSP-1 19 IgG antibody in normal and heterozygous children during the 12months of follow-up, but not in homozygous mutants. Normal children had a significantly lower malaria incidence rate compared to other genotypes (χ 2=115.59; P<0.01). We conclude that the presence of the c.1264 T>G mutation that leads to CD36 deficiency is closely associated with reduced IgG production and higher malaria incidence. It is most likely that deficiency of CD36 which is known to modulate dendritic cell function suppresses the production of protective IgG antibodies directed to Plasmodium falciparum MSP-1 19 antigen, which predisposes to the acquisition of clinical malaria in children.

109.   **Kajeguka D, Mwanziva C, Daou M, Ndaro A, Matondo S, Mbugi E, Dolmans W & Chilongola J. CD36 c. 1264 T> G Null Mutation Impairs Acquisition of IgG Antibodies to Plasmodium falciparum MSP1-19 Antigen and is Associated with Higher Malaria Incidences in Tanzanian Children.** *Scandinavian journal of immunology*.**2012; 75(3):355-360.**

Polymorphisms in genes that encode crucial signalling molecules have been proposed as factors that influence susceptibility to, and outcome of malaria. We studied the role of a mutation, c.1264 T>G, that causes CD36 deficiency on IgG responses to MSP-1_{19} antigen and malaria incidence. Children were genotyped for the c.1264 T>G mutation at the beginning of the study using PCR-RFLP. IgG levels [optical density (OD) readings] and per cent seropositivity to MSP-1_{19} were determined at baseline by ELISA. Children were followed for 12 months for acquisition of anti-MSP-1_{19} IgG antibody and malaria incidence. We observed a significant increase in the production of anti-MSP-1_{19} IgG antibody in normal and heterozygous children during the 12 months of follow-up, but not in homozygous mutants. Normal children had a significantly lower malaria incidence rate compared to other genotypes ($\chi^2 = 115.59$; $P < 0.01$). We conclude that the presence of the c.1264 T>G mutation that leads to CD36 deficiency is closely associated with reduced IgG production and higher malaria incidence. It is most likely that deficiency of CD36 which is known to modulate dendritic cell function suppresses the production of protective IgG antibodies directed to *Plasmodium falciparum* MSP-1_{19} antigen, which predisposes to the acquisition of clinical malaria in children.

110.   **Kakoko DC. Provision of family planning services in Tanzania: a comparative analysis of public and private facilities.** *African journal of reproductive health*.**2012;**

Adherence to the policy guidelines and standards is necessary for family planning services. We compared public and private facilities in terms of provision of family planning services. We analyzed data from health facility questionnaire of the 2006 Tanzania Service Provision Assessment survey, based on 529 health facilities. Majority of public facilities (95.4%) offered family planning services, whereas more than half of private facilities (52.1%) did not offer those. Public facilities were more likely to offer modern contraceptives as compared to private facilities. However, private facilities were more likely to offer counseling on natural methods of family planning [AOR = 2.12 (1.15-3.92), P 0.001]. Public facilities were more likely to report having guidelines or protocols for family planning services and various kinds of visual aids for family planning and STIs when compared to private facilities. This comparative analysis entails the need to enforce the standards of family planning services in Tanzania (Afr J Reprod Health 2012; 16[4]:140-148).

111.   **Kakulu R. Diarrhoea among underfive children and household water treatment and safe storage factors in mkuranga district, Tanzania. Master of Science (Applied Epidemiology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Introduction: In Mkuranga district diarrhoea was among the top ten causes of morbidity and mortality among children under the age of five. Household water treatment and safe storage also known as point of use water treatment (POU) has been shown to be an effective means of reducing diarrhoea and other diseases associated with unsafe drinking water. The purpose of this study was to determine factors associated with diarrhoea with focus on Household water treatment and safe storage and microbial contamination of drinking water. **Methods:** A Cross sectional analytical study was conducted in Mkuranga semi-urban area in Mkuranga district Coast region of Tanzania whereby a probability sample of 400 households was obtained using a multistage sampling technique. Semi-structured questionnaires were used to collect information. Moreover drinking water samples were collected from each household for micro-bacterial analysis mainly E.Coli and Total coli forms. WHO drinking water standards were used to categorize drinking water as acceptable or not. The data were entered; cleaned and analysed using Epi Info version 3.6.11 bivariate analysis was done to determine association between variables, while logistic regression was conducted to control for confounding effects, p values are reported at 95% level. The study was approved by Muhimbili University of Health and Allied Sciences Research and Publications Committee. **Results:** A total of 301 children between the age of 6 months to 59 months were studied with the response rate of 95%. The mean age of study population was 2years±1.3 Standard deviation with a male to female ratio of 0.9:1. The prevalence of under five diarrhoea was 32.7%, the proportion of households that reported treating water with any method was 49.5%. Out of 301 drinking water samples tested about 37.2% were fecally contaminated with the mean E.Coli count of 2.6cfu/100ml of water (SD=±4.8cfu). Also 78% of all drinking water samples tested had total coli forms with the mean total coli form count of 69.9cfu/100ml (SD=±43.2cfu). Drinking water within unacceptable standards (Adjusted OR=20.64, 95%CI 5.84-128, p=0.00), Storing water in container without lid (Adjusted OR=5.4 95%CI 2.6-11.3) and lack of formal education to guardians/parents (Adjusted

OR=1.9, 95%CI 1.08-3.50) increased the risk of diarrhoea. Also treating water with any method (AOR=0.49, 95% CI 0.28-0.84), treating water by boiling (Adjusted OR=0.39, 95% CI 0.2-0.7), Store water in container with lid (Adjusted OR=0.31, 95%CI 0.17-0.53) and parents washing hands with soap following house activities (AOR=0.41, 95% CI 0.24-0.84) were associated with reduced risk of diarrhoea. **Conclusion:** Households should be sensitized to treat their drinking water, wash hands with soap, store drinking water in containers with cover in addition adult formal education should be provided in order to reduce the under five diarrhoea in Mkuranga semi urban area.

112. **Kamasho A. Effectiveness of intervention with mass chemotherapy for soil-transmitted helminths among primary school children in bagamoyo district, tanzania. Master of Science in Tropical Disease Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: In most countries where soil-transmitted helminths (geoheminths) are endemic, school-age children have the highest prevalence and bear the greatest intensity of infection. A deworming programme represents one of the most efficient and cost-effective means to improve child health and education. **Objective:** The objective of the study was to assess the effectiveness of intervention with mass chemotherapy for soil-transmitted helminths among primary school children in Bagamoyo district. **Methodology:** A cross-sectional study design, cluster sampling was used to obtain 300 children of standard I-V of Mlingotini and Pande primary schools. Questionnaires were administered to obtain demographic information, knowledge and factors related to soil- transmitted helminths infection. Fresh stool samples ($\leq$ 24 hours) were collected from every participant and examined by the Kato-Katz thick smear technique to determine infection status. **Results:** Proportion of the school children who received Albendazole during the last distribution was 97.7% and the prevalence of geohelminths was 0% based on microscopic examination. 63% of the children had poor knowledge regarding soil-transmitted helminths, 23% had adequate knowledge and 14% had moderate knowledge. It was statistically significant that the level of knowledge was increasing with age, Chi squire for age group with level of knowledge was 3.26 and p value <0.05. Some risk factors for having soil-transmitted helminths were high, 89% of the children were drinking untreated water at their home. Also 64% of the children mentioned sand as their toilet floor material and 0.3% reported never wearing shoes when visiting toilets. **Conclusion:** Health promotion activities to enhance awareness are important in ensuring that the risks for being infected with soil-transmitted helminths are minimal if not eliminated. Regular mass treatment should be maintained so as to ensure that the prevalence of soil-transmitted helminths remains zero.

113. **Kamazima SR & Kazaura MR. The typology of female sex workers in Dar-es-Salaam: implications to HIV and AIDS interventions targeting female sex workers in Tanzania.** *East African journal of public health*, **2012;** *9*(**2**): **62-69.**

Objective: To establish the categories of female sex workers in Dar es Salaam. **Methods**: We conducted in depth-interviews with 32 female sex workers (FSWs) in five geographic areas of Dar-es-Salaam known to be the primary residential and working places, three local

government leaders in three of the five areas known to have brothels and two NGO representatives working with this population. **Results:** There are about 14 categories of FSWs with fluid perceived 'boundaries', which could change given factors like the availability of clients, active prostitution control mechanisms, the weather, the female sex worker's need for money and the type of sexual services demanded. CONCLUSIONS: different categories provided by the study participants are only useful in the Dar-es-Salaam context but generalization to other places in Tanzania might not be quite possible. However, using these classifications provides an understanding of how they construct their real world with regard to sex work, experiences, (health) needs and shared characteristics that are important when planning for all aspects of research designs and the implementation of interventions targeting them. The Ministry of Health and Social Welfare (MoHSW), through the National AIDS Control Program (NACP), stakeholders and development partners should conduct more research in this area to generate more information that would facilitate lobbying and advocating for repealing colonial-rooted anti-prostitution laws and replacing them with policies aiming at assisting them.

114. **Kamazima SR, Ezekiel MJ, & Fimbo B. Understanding the link between trafficking in persons and HIV and AIDS risk in Tanzania.** *Tanzania Journal of Health Research*. **2012;** *14*(1).

The magnitude of trafficking in persons in Tanzania is unknown. Consequently, available information on health risks of persons trafficked for different forms of exploitation is extremely scanty. We conducted a baseline study in eight administrative regions of Tanzania using both qualitative and quantitative methods to generate data on the health conditions of trafficked persons to inform trafficking in persons control measures through HIV and AIDS interventions. Study participants included the national, regional and district community development officers, district medical officers, local government leaders, managers or representatives of non-governmental organizations involved in anti-trafficking in persons activities, members of the community and victims. Findings indicated that common forms of labour into which persons are trafficked include domestic services, agriculture (farming), and construction, mining/quarrying, fishing, lumbering and manufacturing. Trafficked persons are reported to be exposed to risks like overcrowding, long working hours, psychological problems, physical injuries, impotence, breathing problems and sexually transmitted infections including HIV. It is concluded that the reported occupational hazards in industries where trafficked persons are forced into are not specific to trafficked persons as they affect all labourers. However, the underground nature of the trafficking in persons process increases health problems and risks, including the vulnerability to HIV infection. More tailored research is needed, especially to find means of how to reach out and provide services to this particular vulnerable population, validate labour forms of exploitation into which persons are trafficked to enable the integration or mainstreaming of HIV and AIDS and trafficking in persons at the policy and programmatic levels. In addition, findings would facilitate the understanding of the link between increased risk of HIV and trafficking in persons.

115. **Kamuhabwa A & Chavda R. Health-care providers' preparedness for H1N1/09**

influenza prevention and treatment in Dar es Salaam, Tanzania. *Journal of infection in developing countries*.2012; *6*(3): p262-270

Introduction: In Tanzania, the first case of H1N1/09 influenza was reported in September 2009. By March 2010, the reported number of cases was 770 with one death. Due to shortage of qualified human resources, essential medicines and laboratory supplies in health facilities, it was not known how well health-care providers in the country were prepared to deal with the pandemic. **Methodology**: The study was conducted from December 2009 to May 2010 in public hospitals and private community pharmacies in Dar es Salaam, Tanzania. Fifty-three prescribers and 200 dispensers were interviewed to assess their knowledge on the prevention and treatment of H1N1/09 influenza, and dissemination of correct information to the public regarding the pandemic. **Results**: Most participants had inadequate knowledge on the transmission, prevention and management of H1N1/09 influenza. The majority of prescribers knew neither the antiviral drugs recommended for the treatment of H1N1 influenza (64%) nor their adverse effects (92.5%). The drug dispensers' knowledge was also inadequate regarding the transmission, prevention and treatment of H1N1/09 influenza. Forty-one (20.5%) salespersons without formal training in pharmaceutical or medical sciences were found dispensing and supervising the pharmacies. Most participants had misconceptions on how H1N1/09 virus was transmitted. **Conclusion:** The results of the study revealed gaps in the knowledge of the health-care providers on the prevention and treatment of H1N1/09 influenza infection. This indicates the need for strengthening of health-care systems and provision of continuing education and professional development for health-care providers on new and re-emerging diseases in the community.

116.   **Kapinga F. Assessing performance of the exemption scheme: A Case Study of the Ocean Road Cancer Institute. Master of Arts Degree in Health Policy and Management Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Despite the existence of the national exemptions policy in Tanzania a large proportion of the deserving poor and vulnerable in the country do not have adequate access to health care. A conspicuous group among these is cancerpatients who need lifelong treatment and expensive drugs. This was the basis ofstudy to assess the extent of implementation and utilization of Exemption scheme at Ocean Road Cancer institute. **Objective:** To assess the performance of the exemption scheme for the purpose of improving lives of the people suffering from cancer at ORCI through addressing identified gaps. **Methodology:** This was a cross sectional study employing both qualitative and quantitative approaches. The quantitative approach involved about 210 patients selected by systematic sampling whereby responses were obtained by administering structured questionnaire, and the qualitative approach involved purposively selected 6 key informants whereby in-depth interview was used to obtain attitudes, views, and experiences in regards to exemption implementation **Results:** A total of 210 patients and 6 key informants participated in the study. The study found only 41% received complete (full) exemption for chemotherapy, while for laboratory and X-ray services were 24.8% and 33% respectively. Awareness amongst patients and workers was relatively high and the main source of information being health workers by 61%. On resources availability the study found that anticancer medicines

and diagnostic machines are not in constant supply of services for long time leading to low exemption of the services. **Conclusion and Recommendations**: Despite the government‟s policy on exempting treatment services for cancer patients still the coverage is low. The Government through MOHSW to increase budget allocation in regard to the growing cancer health problem, advocate for universal coverage through social health security schemes which would dispense some percent of their earning to the need of exemption and provision of special Insurance Cards for cancer patients to assist in exempting them during transportation. The ORCI to timely repair the broken machines so that the services are readily available and possible provision of back- up machines necessary for diagnostic purposes.

117. **Karimuribo ED, Jones B, Matee MI, Kambarage DM, Mounier-Jack S, & Rweyemamu MM. Resource mapping and emergency preparedness to infectious diseases in human and animal populations in Kibaha and Ngorongoro districts, Tanzania.** *Onderstepoort Journal of Veterinary Research*.**2012;** *79*(**2**): **107-107.**

A rapid situation analysis was conducted in Kibaha and Ngorongoro districts in Tanzania to map resources as well as analysing emergency preparedness to infectious diseases in animal (domestic and wild) and human populations. Kibaha was chosen as a district close to a commercial city (Dar es Salaam) while Ngorongoro represented a remote, border district with high interactions between humans, domestic and wild animals. In this study, data on resources and personnel as well as emergency preparedness were collected from all wards (n = 22), human health facilities (n = 40) and livestock facilities in the two districts using interview checklists and questionnaires. Descriptive statistics for resources were calculated and mapped by district. Kibaha district had a higher human population density, more health workers, better equipped health facilities and better communication and transport systems. On the other hand, Ngorongoro had a higher population of livestock and more animal health facilities but a poorer ratio of animal health workers to livestock. The average ratio of health personnel to population in catchment areas of the health facilities was 1:147 (range of 1:17-1:1200). The ratio of personnel to human population was significantly higher in Kibaha (1:95) than in Ngorongoro (1:203) district (p = 0 < 0.001). Considering the limited resources available to both human and animal health sectors and their different strengths and weaknesses there are opportunities for greater collaboration and resource-sharing between human and animal health for improved surveillance and emergency-preparedness.

118. **Karimuribo ED, Mboera LE, Mbugi E, Simba A, Kivaria FM, Mmbuji P & Rweyemamu MM. Are we prepared for emerging and re-emerging diseases? Experience and lessons from epidemics occurred in Tanzania during the last five decades.** *Tanzania Journal of Health Research*.**2012;** *13*(**5**).

This paper reviews preparedness for containing and controlling emerging and re-emerging diseases drawing lessons from disease events that occurred in animal and human populations in the last five decades (1961-2011). A comprehensive analysis based on retrieval and analysis of grey and published literature as well as reported cases was carried out to document type and trend of occurrence of emerging and re-emerging infectious diseases in

different parts of Tanzania. Overall, the majority of diseases reported in the country were viral in nature followed by bacterial diseases. The trend for the occurrence shows a number of new emerging diseases as well as re-occurrence of old diseases in both animal (domestic and wild) and human populations. In humans, the major disease epidemics reported in the last five decades include cholera, influenza A H1N1, plague and rubella. In animals, the major epidemic diseases reported were Contagious Bovine Pleuropneumonia, Contagious Caprine Pleuropneumonia, Peste des petits ruminants and Giraffe Ear and Skin Diseases. Some epidemics have been reported in both human and animal populations including Rift Valley fever and anthrax. The emergence of the 'fit-for purpose' approaches and technologies such as the discipline of One Health, use of participatory epidemiology and disease surveillance and mobile technologies offers opportunity for optimal use of limited resources to improve early detection, diagnosis and response to disease events and consequently reduced impact of such diseases in animal and human populations.

119.   **Kashif M, Yahya N, Nasir N, Akhtar MN , Zaid HM, & Shafie A. (2012, September). Full scale modeling of an antenna in offshore environment for electromagnetic enhanced oil recovery. In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012;(ICFAS2012), 1482 (1): 164-169. AIP Publishing.**

In enhanced oil recovery, high frequency electromagnetic waves are used to heat the oil reservoir and for this purpose an antenna is inserted in a borehole close to the production well. It requires a large numbers of boreholes for the antenna to get uniform heating. In case of offshore these problem can be avoided if a horizontal antenna is towed close to the seabed which maximize the electromagnetic energy transferred from the overburden to reservoir. For this purpose new twin collinear dipole antenna with a total length equal to one wavelength is designed and full scale modeling in offshore environment was done by using computer simulation technology (CST) software. Electromagnetic response of oil reservoir by using new antenna is studied for a model consisting of a 100 m thick oil reservoir having resistivity of 100 ohm-m, buried at a depth of 1000m in overburden with 1000m seawater. It was observed that new antenna gave 365% higher electric field than half wavelength dipole antenna at the far source receiver offset. At the target depth of 2500m new antenna gave 336% more electric field magnitude as compared to half wavelength antenna. In the response of different frequencies of new antenna, electric field value $8.18E^{-07}$ V/m at low frequency (0.125Hz) is more than $5.79E^{-42}$ V/m at frequency (10KHz). Magnetic field value $5.81E^{-05}$ A/m at low frequency (0.125Hz) is more than $1.74E^{-39}$ A/m at frequency (10KHz). It was investigated twin collinear dipole antenna produced stronger electric and magnetic fields as compared to half wavelength dipole antenna in offshore environment.

120.   **Katale BZ, Mbugi EV, Kendal S, Fyumagwa RD, Kibiki GS, Godfrey-Faussett P, Keyyu JD, van Helden P, Matee MI. Bovine tuberculosis at the human-livestock-wildlife interface: Is it a public health problem in Tanzania?: A review** *Onderstepoort Journal of Veterinary Research*, **(2012); 79 (2).**

Despite the apparent public health concern about Bovine tuberculosis (BTB) in Tanzania,

little has been done regarding the zoonotic importance of the disease and raising awareness of the community to prevent the disease. Bovine tuberculosis is a potential zoonotic disease that can infect a variety of hosts, including humans. The presence of multiple hosts including wild animals, inefficient diagnostic techniques, absence of defined national controls and eradication programs could impede the control of bovine TB. In Tanzania, the diagnosis of Mycobacterium bovis in animals is mostly carried out by tuberculin skin testing, meat inspection in abattoirs and only rarely using bacteriological techniques. The estimated prevalence of BTB in animals in Tanzania varies and ranges across regions from 0.2% to 13.3%, which is likely to be an underestimate if not confirmed by bacteriology or molecular techniques. Mycobacterium bovis has been detected and isolated from different animal species and has been recovered in 10% of apparently healthy wildebeest that did not show lesions at post-mortem. The transmission of the disease from animals to humans can occur directly through the aerosol route and indirectly by consumption of raw milk. This poses an emerging disease threat in the current era of HIV confection in Tanzania and elsewhere. Mycobacterium bovis is one of the causative agents of human extra pulmonary tuberculosis. In Tanzania there was a significant increase (116.6%) of extrapulmonary cases reported between 1995 and 2009, suggesting the possibility of widespread M. bovis and Mycobacterium tuberculosis infection due to general rise of Human Immunodeficiency virus (HIV). This paper aims to review the potential health and economic impact of bovine tuberculosis and challenges to its control in order to safeguard human and animal population in Tanzania.

121.   Katale BZ, Mbugi EV, Kendal S, Fyumagwa RD, Kibiki GS, Godfrey-Faussett P, Keyyu JD, Helden PV & Matee.MI. Bovine tuberculosis at the human-livestock-wildlife interface: Is it a public health problem in Tanzania? A review. *Onderstepoort Journal of Veterinary Research*. **2012;** *79***(2): 84-97.**

Despite the apparent public health concern about Bovine tuberculosis (BTB) in Tanzania, little has been done regarding the zoonotic importance of the disease and raising awareness of the community to prevent the disease. Bovine tuberculosis is a potential zoonotic disease that can infect a variety of hosts, including humans. The presence of multiple hosts including wild animals, inefficient diagnostic techniques, absence of defined national controls and eradication programs could impede the control of bovine TB. In Tanzania, the diagnosis of *Mycobacterium bovis* in animals is mostly carried out by tuberculin skin testing, meat inspection in abattoirs and only rarely using bacteriological techniques. The estimated prevalence of BTB in animals in Tanzania varies and ranges across regions from 0.2% to 13.3%, which is likely to be an underestimate if not confirmed by bacteriology or molecular techniques. *Mycobacterium bovis* has been detected and isolated from different animal species and has been recovered in 10% of apparently healthy wildebeest that did not show lesions at post-mortem. The transmission of the disease from animals to humans can occur directly through the aerosol route and indirectly by consumption of raw milk. This poses an emerging disease threat in the current era of HIV confection in Tanzania and elsewhere. *Mycobacterium bovis* is one of the causative agents of human extra pulmonary tuberculosis. In Tanzania there was a significant increase (116.6%) of extrapulmonary cases reported between 1995 and 2009, suggesting the possibility of widespread *M. bovis* and

Mycobacterium tuberculosis infection due to general rise of Human Immunodeficiency virus (HIV). This paper aims to review the potential health and economic impact of bovine tuberculosis and challenges to its control in order to safeguard human and animal population in Tanzania.

122. **Katinger D, Jeffs S, Altmann F, Cope A, McKay P, Almond N, Sandström E, Hejdeman B, Biberfeld G, Nilsson C, Hallengärd D, Wahren B, Lehner T, Singh M, Lewis D, Lacey C, & Shattock R. (2012). CN54gp140: product characteristics, peclinical and clinical use-recombinant glycoprotein for HIV immunization.** *Retrovirology* **.2012;** *9***(2): P351.**

Background: The usefulness of HIV envelope proteins for vaccine design is widely accepted since the RV144 HIV-1 prime-boost vaccine trial. It is assumed that a trimeric structure close to the natural form of the HIV envelope is preferable.**Methods:** We have expressed the soluble form of the HIV envelope of the C/B' strain 97/CN/54 in CHO cells. The production process consisted of a large-scale fed-batch fermentation, an antibody-based affinity chromatography plus additional purifying steps. CN54gp140 was extensively characterized for purity and identity. All glycosylation sites were characterized by mass spectrometry. Immunogenicity and safety were evaluated in mice, rabbits, minipigs, sheep as well as non-human primates. The antigen was formulated for clinical phase I studies in Tris buffer (MUCOVAC I, HIVIS07) in HEC gel (MUCOVAC I) as well as chemically conjugated to hsp70 (MUVAPRED). **Results .**The vaccine antigen candidate CN54gp140 proved to be of high purity and long-term stability. The immune response was strongest with i.m. application whereas the mucosal routes (i.vag., i.n.) were less immunogenic. Safety was demonstrated in animal models as well as in the clinical phase I studies MUCOVAC I, MUVAPRED and HIVIS07. **Conclusion:** CN54gp140 is a highly immunogenic trimeric envelope protein which can be manufactured in sufficient quality and quantity for clinical application. It proved to be immunogenic in several animal models. Finally, it is well tolerated in several formulations and combinations in humans.

123. **Kaufman MR, Rweyemamu D, Koenker H, & Macha J. "My children and I will no longer suffer from malaria": a qualitative study of the acceptance and rejection of indoor residual spraying to prevent malaria in Tanzania.** *Malar J***. 2012;***11***:220.**

Background: The objective of this study was to identify attitudes and misconceptions related to acceptance or refusal of indoor residual spraying (IRS) in Tanzania for both the general population and among certain groups (e.g., farmers, fishermen, community leaders, and women). **Methods**: This study was a series of qualitative, semi-structured, in-depth interviews and focus group discussions conducted from October 2010 to March 2011 on Mainland Tanzania and Zanzibar. Three groups of participants were targeted: acceptors of IRS (those who have already had their homes sprayed), refusers (those whose communities have been sprayed, but refused to have their individual home sprayed), and those whose houses were about to be sprayed as part of IRS scale-up. Interviews were also conducted with farmers, fishermen, women, community leaders and members of non-government organizations responsible for community mobilization around IRS. **Results**: Results showed

refusers are a very small percentage of the population. They tend to be more knowledgeable people such as teachers, drivers, extension workers, and other civil servants who do not simply follow the orders of the local government or the sprayers, but are skeptical about the process until they see true results. Refusal took three forms: 1) refusing partially until thorough explanation is provided; 2) accepting spray to be done in a few rooms only; and 3) refusing outright. In most of the refusal interviews, refusers justified why their houses were not sprayed, often without admitting that they had refused. Reasons for refusal included initial ignorance about the reasons for IRS, uncertainty about its effectiveness, increased prevalence of other insects, potential physical side effects, odour, rumours about the chemical affecting fertility, embarrassment about moving poor quality possessions out of the house, and belief that the spray was politically motivated.**Conclusions:** To increase IRS acceptance, participants recommended more emphasis on providing thorough public education, ensuring the sprayers themselves are more knowledgeable about IRS, and asking that community leaders encourage participation by their constituents rather than threatening punishment for noncompliance. While there are several rumours and misconceptions concerning IRS in Tanzania, acceptance is very high and continues to increase as positive results become apparent.

124.   Kayombo EJ, Uiso FC & Mahunnah RL. Experience on healthcare utilization in seven administrative regions of Tanzania. *J Ethnobiol Ethnomed*.2012; *8*(5).

Health care utilization in many developing countries, Tanzania included, is mainly through the use of traditional medicine (TRM) and its practitioners despite the presence of the conventional medicine. This article presents findings on the study that aimed to get an experience of health care utilization from both urban and rural areas of seven administrative regions in Tanzania. A total of 33 health facility managers were interviewed on health care provision and availability of supplies including drugs, in their respective areas. The findings revealed that the health facilities were overburden with higher population to serve than it was planned. Consequently essential drugs and other health supplies were available only in the first two weeks of the month. Conventional health practitioners considered traditional health practitioners to be more competent in mental health management, and overall, they were considered to handle more HIV/AIDS cases knowingly or unknowingly due to shear need of healthcare by this group. In general conventional health practitioners were positive towards traditional medicine utilization; and some of them admitted using traditional medicines. Traditional medicines like other medical health systems worldwide have side effects and some contentious ethical issues that need serious consideration and policy direction. Since many people will continue using traditional/alternative medicine, there is an urgent need to collaborate with traditional/alternative health practitioners through the institutionalization of basic training including hygiene in order to improved healthcare in the community and attain the Millennium Development Goals by 2015.

125.   Kayombo EJ. (2012). **Indigenous knowledge and HIV/AIDS prevention and management in local communities in Africa South of the Sahara.Transl Med. 2012; 2:3.**

HIV/AIDS is a complex health problem dilapidating active labourforce, creating upheaval in

many families and communities south of the Sahara and leaving large number of orphans. This requires multiple approaches including indigenous knowledge (IK. This paper aim is to show the role of IK on prevention and management of HIV/AIDS in local communities in African countries south of the Sahara. Published articles and gray literature that focused on HIV/AIDS and IK in African countries south of the Sahara were critical reviewed. The findings showed that traditional remedies (TRs) help many HIV/AIDS to cope with illness in rural areas. TRs mainly from herbs and honey as well as psychosocial counselling arrested symptoms of HIV/AIDS like diarrhoea, body wasting anxiety, skin infection to mention few that would lead a HIV patient develop AIDS. The Institute of Traditional Medicine and Tanga AIDS working group have developed some formulation of from these herbal remedies for HIV/ AIDS and HIV/AIDS related cases. Also the findings showed that some traditional healthcare practitioners (THPs) were aware of importance of food to HIV/AIDS patients. Food components like honey, eggs, vegetables, fruits and traditional cereal crops were included in formulation of TRs especially to patients who had no appetite. IK through THPs help many HIV patients to delay development to AIDS and cope with illness/disease in many developing countries. There is a need to explore more about IK with THPs so as to come with potential herbal plants that can improve health well being of people in rural communities.

126. **Kayunze KA, Kiwara AD, Lyamuya E , Kambarage DM, Rushton J , Coker R , Kock R, Rweyemamu MM. A socio-economic approach to one health policy research in southern Africa.*Onderstepoort Journal of Veterinary Research*, (2012); 79 (2).**

One-health approaches have started being applied to health systems in some countries in controlling infectious diseases in order to reduce the burden of disease in humans, livestock and wild animals collaboratively. However, one wonders whether the problem of lingering and emerging zoonoses is more affected by health policies, low application of one-health approaches, or other factors. As part of efforts to answer this question, the Southern African Centre for Infectious Disease Surveillance (SACIDS) smart partnership of human health, animal health and socio-economic experts published, in April 2011, a conceptual framework to support One Health research for policy on emerging zoonoses. The main objective of this paper was to identify which factors really affect the burden of disease and how the burden could affect socio-economic well-being. Amongst other issues, the review of literature shows that the occurrence of infectious diseases in humans and animals is driven by many factors, the most important ones being the causative agents (viruses, bacteria, parasites, etc.) and the mediator conditions (social, cultural, economic or climatic) which facilitate the infection to occur and hold. Literature also shows that in many countries there is little collaboration between medical and veterinary services despite the shared underlying science and the increasing infectious disease threat. In view of these findings, a research to inform health policy must walk on two legs: a natural sciences leg and a social sciences one.

127. **Khairuddin MK, Zaid HM, Shafie A, & Yahya N. (2012, April). Airwaves effect in Sea Bed Logging for shallow water environment. In Business Engineering and Industrial Applications Colloquium (BEIAC), 2012; (pp. 199-203): IEEE.**

Controlled Source Electromagnetic (CSEM), method used in Sea Bed Logging (SBL), has shown very promising results in detecting subsurface hydrocarbons. A powerful electric dipole antenna which is used as transmitter of electromagnetic (EM) wave is towed above the seabed to detect resistivity contrasts in the subsurface. The signal will propagate through the layers and then recorded by receivers, which consist of both electric and magnetic antennas, placed on the sea bed. One of the major problems in implementing this method is the airwaves effect that occurs at shallow water environment. It should be noted that the air waves could dominate the measured EM data such that the presence of the thin resistive body may not be readily detected. This paper is going to discuss the effect of airwaves in SBL for shallow water environment. EM data for with and without hydrocarbon were collected via simulation using CST EM Studio for various water depths from deepwater 1000 m to shallow water 100 m. Magnitudes versus Offset (MVO) values were plotted. Results showed that airwaves started to dominate at water depth of 600 m and became more significant at water depths of 300 m and below.

128. **Khairuddin MK, Zaid HM, Shafie A, & Yahya N. (2012, September). Study of airwaves at various offsets in sea bed logging (SBL). In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012;(ICFAS2012) (Vol. 1482, No. 1, pp. 152-156): AIP Publishing.**

Application of Controlled Source Electromagnetic (CSEM) method in shallow water exploration has been a challenge due to the interference of airwaves with electromagnetic field and the background resistivity variations. This paper will discuss the airwaves at various offsets in SBL for various depths. Simulations of the sea bed environments without the presence of hydrocarbon were carried out using CST EM Studio 2009, where the depth of the saline water was varied from 10000 m to 500 m, with 500 m decrement. Based on the simulation results, it was observed that at near offset, most of the readings were dominated by direct wave, while the airwaves start to dominate at farther offset. It is also observed that the airwaves will become dominant at farther offset while airwaves are more dominant at nearer offset for shallow water.

129. **Khalid K. Comparison of haemodynamic responses to laryngeal mask airway insertion and laryngoscopy with endotracheal intubation in adults undergoing elective surgery at Muhimbili. Master Of Medicine (Anaesthesiology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background Airway management is of utmost importance during delivery of general anaesthesia. Traditionally, laryngoscopy and endotracheal tube (ETT) insertion has been the mainstay in providing adequate airway management and delivering anaesthesia. The laryngeal mask airway (LMA) offers a much less invasive way of maintaining the airway as it does not pass through the glottis but is placed over the glottis. It does not require the use of the laryngoscope. Laryngoscopy and tracheal intubation or laryngeal mask airway insertion are noxious stimuli which provoke a transient but marked sympathetic response manifesting as hypertension and tachycardia. In susceptible patients particularly those with systemic hypertension, coronary heart disease, cerebrovascular disease and intracranial aneurysm,

even these transient changes can result in potentially deleterious effects like left ventricular failure, arrhythmias, myocardial ischaemia, cerebral haemorrhage and rupture of cerebral aneurysm. **Objective** To determine the haemodynamic response elicited by laryngoscopy and endotracheal intubation and compare it with that elicited by laryngeal mask insertion in ASA I and ASA II patients, undergoing elective surgeries at Muhimbili national Hospital (MNH) and Muhimbili Orthopaedic Institute (MOI) in 2011. **Methods** A hospital based prospective randomized comparative study was conducted to determine the haemodynamic response elicited by laryngoscopy and endotracheal intubation and compare it with that elicited by laryngeal mask insertion in ASA I and ASA II patients, undergoing elective surgeries at MNH and MOI . After induction of anaesthesia either an ETT or LMA was inserted. Evaluations included measurement of blood pressure and heart rates before insertion, after insertion of device, 1 minute, 3 minutes and 5 minutes after insertion. Measuments were taken from the Drager infinity gamma XL monitor. Time and ease of insertion was also noted. **Results** There was an increase in HR, SBP and DBP seen after laryngoscopy and ETT insertion as well as after laryngeal mask insertion. The change in haemodynamic parameters after laryngoscopy and ETT insertion were significantly greater than those elicited by LMA insertion ($p<0.0001$). The increase took about 5 minutes to return to pre insertion values in the ETT group, while it took about 3 minutes for the same values to return to pre insertion values in the LMA group. It took a significantly shorter time to insert an LMA (12.63 sec) as compared to time taken to insert an ETT (22.76 sec). Insertion of an LMA was rated easy in 84% of the patients while it was rated easy in 60% of the ETT patients. **Conclusion** The haemodynamic changes elicited by LMA insertion are less and short lived compared to those elicited by laryngoscopy and ETT insertion. It takes a shorter time and is much easier to insert an LMA as compared to laryngoscopy and ETT insertion. These changes might be insignificant in a normotensive patient, but could be harmful in a patient with cerebrovascular or cardiovascular abnormalities. The use of an LMA is recommended in these groups of patients.

130.   **Kidanto HL, Mwampagatwa I, Van roosmalen J. Uterine rupture: A retrospective analysis of causes, complications and management outcomes at Muhimbili National Hospital in Dar es Salaam, Tanzania** *Tanzania Journal of Health Research*, (2012);14 (3).

Rupture of the gravid uterus is an obstetric catastrophe that is associated with complications that include massive blood loss, hysterectomy, and damage to the genitourinary tract. It is a serious complication that is associated with high maternal and perinatal morbidity and mortality. We conducted a retrospective review of case notes (from 2003 to 2009) to determine the incidence, causes, complications and foetal/maternal outcome among women with a diagnosis of ruptured uterus at Muhimbili National Hospital (MNH) in Dar es Salaam Tanzania. Case notes with diagnosis of ruptured uterus were retrieved from the records department and information on maternal demographic characteristics, surgical intervention, maternal and perinatal outcome were collected using a check list. Where information was inadequate it was sought from the obstetric database. Obtained data was cleaned and analyzed using PASW statistics 18 software. Out of 72,570 deliveries 163 cases of ruptured uterus were recorded in seven years, making an incidence of 2.25 per 1000 births. Most

ruptures (38%) resulted from neglected obstructed labour and scared uterus (33.6%). Major obstetric haemorrhage (>1500 ml) was the most frequently encountered complication followed by sepsis. Subtotal hysterectomy was the most common (73.6%) surgical intervention. Maternal and perinatal case fatality rates were 12.9%, and 96.3% respectively. Ruptured uterus contributed to 6.6% of all maternal deaths. These findings underscores the need for proper monitoring of labour both in the referring facilities and at MNH and improvement of comprehensive emergence obstetric care at all levels of health care to avoid unnecessary delays in care.

131. **Kidanto HL, Wangwe P , Kilewo C, Nystrom L , Lindmark G. Improved quality of management of eclampsia patients through criteria based audit at Muhimbili National Hospital, Dar es Salaam, Tanzania. Bridging the quality gap.*BMC Pregnancy and Childbirth*, (2012);12, art.no. 134.**

Background: Criteria-based audits (CBA) have been used to improve clinical management in developed countries, but have only recently been introduced in the developing world. This study discusses the use of a CBA to improve quality of care among eclampsia patients admitted at a University teaching hospital in Dar es Salaam Tanzania.Objective: The prevalence of eclampsia in MNH is high (≈6%) with the majority of cases arriving after start of convulsions. In 2004-2005 the case-fatality rate in eclampsia was 5.1% of all pregnant women admitted for delivery (MNH obstetric data base). A criteria-based audit (CBA) was used to evaluate the quality of care for eclamptic mothers admitted at Muhimbili National Hospital (MNH), Dar es Salaam, Tanzania after implementation of recommendations of a previous audit.Methods: A CBA of eclampsia cases was conducted at MNH. Management practices were evaluated using evidence-based criteria for appropriate care. The Ministry of Health (MOH) guidelines, local management guidelines, the WHO manual supplemented by the WHO Reproductive Health Library, standard textbooks, the Cochrane database and reviews in peer reviewed journals were adopted. At the initial audit in 2006, 389 case notes were assessed and compared with the standards, gaps were identified, recommendations made followed by implementation. A re-audit of 88 cases was conducted in 2009 and compared with the initial audit. Results: There was significant improvement in quality of patient management and outcome between the initial and re-audit: Review of management plan by senior staff (76% vs. 99%; P=0.001), urine for albumin test (61% vs. 99%; P=0.001), proper use of partogram to monitor labour (75% vs. 95%; P=0.003), treatment with steroids for lung maturity (2.0% vs. 24%; P=0.001), Caesarean section within 2 hours of decision (33% vs. 61%; P=0.005), full blood count (28% vs. 93%; P=0.001), serum urea and creatinine (44% vs. 86%; P=0.001), liver enzymes (4.0% vs. 86%; P=0.001), and specialist review within 2 hours of admission (25% vs. 39%; P=0.018). However, there was no significant change in terms of delivery within 24 hours of admission (69% vs. 63%; P=0.33). There was significant reduction of maternal deaths (7.7% vs. 0%; P=0.001).Conclusion: CBA is applicable in low resource setting and can help to improve quality of care in obstetrics including management of pre-eclampsia and eclampsia.

132. **Kileo B. The pattern of oral and maxillofacial injuries among patients attending muhimbili national hospital, dar es salaam, Tanzania. Master of Dentistry (Oral**

Surgery)) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Objective: To determine the pattern of oral and maxillofacial injuries among patients attended at the Muhimbili National Hospital, Dar es Salaam, Tanzania. **Study design**: Descriptive cross-sectional hospital based study. **Setting**: The study was done at oral and maxillofacial surgery firm and emergency medicine department of Muhimbili National Hospital (MNH). **Study population**: All patients who attended the Oral and Maxillofacial Surgery firm and Emergency Medicine departments of MNH for treatment of oral and maxillofacial injuries during the period of the study and consented were included in the study.. **Methodology**: An interview of the patients with oral and maxillofacial injuries was done through structured questionnaire to obtain relevant information from the patient. Social-demographic information (age, sex, address, education level and marital status), patient's main complaint, type of injury, place where injury took place, cause of injury, general condition of patient immediately after injury and afterwards and the time interval from injury to reporting to hospital were recorded. Clinical findings were recorded as follows: type of injury, site of injury, single or multiple, soft tissue or hard tissue injury. Soft tissue injuries were categorized as bruises, abrasions, cut wound, contusion, lacerations, avulsions, and burn. Hard tissue injury was categorized as fracture of facial bones such as nasal bone, maxilla, mandible, zygoma, frontal palatal and orbital bones. Accompanying injuries to the TMJ were also recorded. Radiological investigations including plain skull radiography (posterior anterior view, Water's view, submental vertex view), orthopantomograph and where necessary a computed tomography (CT) were ordered. The interpretation of the radiological investigations was done by the principal investigator with the assistance of an experienced clinician and was recorded in a special form as fracture or no fracture, site and type of fracture. Treatment offered and treatment outcomes were also recorded. For admitted patients the number of days spent in hospital was recorded against the type of injury and treatment done. The data was entered into computer and analysis was done using Statistical Package for Social Sciences programme (SPSS) Version 15. Association of maxillofacial injury parametersdemographic factors, aetiology, treatment and complications) and type of injuries was evaluated using Chi –square test (X2). Significant level $p<0.05$ was used to draw out conclusion. **Results** A total of 137 patients, 123 (89.8%) males and 14 (10.2%) females with the male- female ratio of 9:1 were included in this study. The age range was from 4 to 70 years with a mean age of 30.13 years. The 21-30 and 31-40 years age groups were the most affected. Road traffic accidents (RTA) were the most (64.2%) common causes of oral and maxillofacial injuries. The most common soft tissue injury was laceration in 63 (26.9%) patients followed by bruises in 57 (24.4%) and cut wounds in 54 (23.1%). Ninety-three patients (67.9%) had sustained fractures of either the mandible, mid face or both and of those 93 patients who sustained fracture, most had mandibular fractures 42 (45.2%). All patients received basic resuscitation procedures, for stabilization of the patient. Almost all (97.8%) patients with oral and maxillofacial injuries were given analgesics for pain control and prophylaxis antibiotics (96.4%). Surgical wound debridement and wound suturing were the most (62.8% and 53.3% respectively) common treatment for soft tissue injuries, while intermaxillary or mandibulomaxillary fixation was the most (51%) common hard tissue injuries treatment. A total of 27 (19.7%) patients suffered some complications after

treatment. Infection was the most (59.3%) common complication followed by malunion (33.3%). **Conclusion** This study showed that road traffic accidents were the most common cause of maxillofacial injuries. Assaults/interpersonal violence were the second most common cause of maxillofacial trauma. These findings should alert the authorities, particularly the government and the road safety commission to the need for improvement of our roads, enforcement of existing traffic laws, and improvement of socio-economic conditions of the general population

133. **Kilonzo M. Psychological factors associated with sexual initiation and sexual intention among school adolescents aged 12-14 in dar es salaam, Tanzania. Master of Science in Clinical Psychology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Introduction: There are about 3.4 million adolescents below 15 years reported to have HIV globally and approximately 90% are in sub-Saharan African countries. Studies have shown that adolescents engage into sexual risk behaviors such as early age of sex initiation, multiple partners and unprotected sex at an early age. Psychological wellbeing impacts highly on a person"s decision-making process. Several studies have highlighted a relationship between sexual risk behaviors and psychological factors. Low self-esteem, low self-efficacy and high depression have been seen to play a role in adolescent"s engagement of risky sexual practice. No retrievalbe studies on psychological factors and sexual risk behaviors have been conducted in Tanzania. The current study provides more insight on how psychological factors can influence engagement in sexual initiation and future sexual intentions that put adolescents at risk of HIV transmission in the Tanzanian context. **Objectives:** To assess the levels of psychological factors (self-esteem, depression, self-efficacy) and their association with sexual risk behaviors (sexual initiation and sexual intention) in a school-based adolescents aged 12-14 years **Study design:** This was a cross section study design nested within a cluster randomized control trial of school aged adolescents in Kinondoni District of Dar es Salaam city. **Methods:** Employing a multistage random cluster sampling procedure six schools were randomly selected from a pool of 12 schools that are involved in a large cluster randomized intervention trial in the city. Participants from each of the 6 selected schools that met the study criteria had an equal chance to be in the study. A total of 250 participants willingly took part in this study. A self-administered structured questionnaire was used for data collection and included information on socio-demographic characteristics and sexual behaviors. Four standardized scales were used to collect measures for depression, self-esteem, HIV preventive self-efficacy and intentions to engage in sexual behaviors in the next six months. **Results:** A total of 250 participants were included in the study, 128 (51.2) Male and 121 (48.8%) female adolescents. The mean age (SD) of the participants was 12.6 years (0.7). The proportion of adolescents with high self-esteem was found to be 35.6% (89) with almost similar proportion having low self-esteem. A little more than a third 36.5% (89) of participating adolescents had high HIV self-efficacy. While with regards to depression symptomatology score, the overall proportion of adolescents who had high depression symptomatology scores was found to be 35.2%. The proportion of adolescents who had initiated sex was 35.6%. Adolescents who had high depressive scores were 3.6 times more likely to have initiated sexual activity as compared to those with low depressive score (OR, 3.62, 95% confidence interval 2.22, 9.06; p=0.001). Adolescents with low self-esteem were

two and a half times more likely to have high risky sexual intentions compared to those with high self esteem (OR, 2.62 95% confidence interval 1.00, 6.92; p=0.04). Low HIV preventive self-efficacy was associated with almost three times the odds of high risky sexual intentions compared to adolescents with high HIV perceived self-efficacy, (OR, 2.72, 95% confidence interval 1.03, 7.32; p=0.04). Current depressive symptomatology did not significantly predict responses to future sexual intentions amongst participants. **Conclusion and recommendations:** There is an increased prevalence of early sexual initiation among young adolescents in Dar es Salaam. This study showed that depression is associated with sexual initiation but not with future intention to engage in sex. HIV preventive self-efficacy and self-esteem are associated with future intentions to engage in sex but not with sexual initiation. It is therefore recommended that School based interventions that aim at increasing psychological wellbeing of young adolescents are needed. Reproductive health interventions should focus on the emotional aspect of engaging in sexual risk behaviors.

134.   **Kimambo. Electrocardiographic pattern and cardiovascular risk factors among university students in dar es salaam – tanzania a descriptive cross sectional study. Master of Cardiology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Background: Abnormal resting electrocardiogram (ECG) findings have been strongly associated with subsequent increase in all cause CAD and CVD mortality. The abnormalities are defined as either major or minor based on the different criteria. Minor and major abnormalities have been correlated with increasing risk for CAD events and mortality. Moderately elevated cholesterol levels found in the majority of young adults in their 20s and 30s were associated with damage to coronary arteries, which could accumulate over time and persisted into middle age. Individuals exposed to higher levels of LDL cholesterol or lower levels of HDL cholesterol during young adulthood were more likely to develop coronary calcium. **Objectives**: To describe the ECG pattern and cardiovascular risks factors among students aged 18-40 years at the University of Dar es salaam Mlimani Campus **Methodology**: This was a descriptive cross sectional study describe the ECG abnormalities and cardiovascular disease risks factors among UDSM students aged 19-40 years conducted among university of Dar es salaam students. A total number of 411 university students were evaluated from May to October 2011. Standardized questionnaire was used to collect socio-demographic characteristics and clinical presentation of study participants. ECG abnormalities were divided into minor and major abnormalities based on Minnesota code criteria. **Results**: 411 participants were included in the study out of which 140 (34.1%) were female and 271(65.9%) were male. The age range was (19-40) & mean age of 23.6±2.6. The participants were free from any form of cardiovascular disease. The mean SBP/DBP was 120.1 ±11.6/73.4 ± 9.6 respectively. One participant was found to be diabetic and one hypertensive. Family history of cardiovascular disease, hypertension, stroke and diabetes mellitus was reported in 26(6.3%), 54(13.1%), 16(3.9%) and 85(20.7%) participants respectively. Fifteen (3.6%) participants were active smoker at the time of recruitment. Majority of ECG were either normal or within acceptable limits, the automated Minnesota coding reported 152(37%) normal ECG, when the ECG were re-evaluated, 326(76.3%) were within normal & acceptable limit. The prevalence of major ECG abnormalities was found in 37(9.0%), minor ECG abnormalities were found in 143(34.8%), other ECG abnormalities were found in 79(19.2%) The most prevalent ECG coded was arrhythmia 168(40.9%), high

amplitude R waves were found in 87(21.2%), males 79(29.2%) were found to have statistically significant high amplitude R waves compared to female 8 (5.7%) p=0.0000, LVH was found in 13(3.2%) participants. The mean HDL level was significantly higher in women (50.0 ± 12.5 mg/dl) as compared to men (42.6 ± 12.2 mg/dl), p <0.001.The proportion of women (18.6%) with low levels of HDL was significantly lower than that observed in men (29.2%), p <0.001 (table 2). BMI > 30kg/m2 was found in 3(0.7%). **Conclusion** The prevalence of major and minor ECG findings was high 34.8%, the relationship between major and minor ECG abnormalities; low HDL, increased waist circumference and prehypertensive state varied with gender with male predominance but could not be associated with ECG abnormalities found.

135.   **Kirimuhuzya C, Bunalema L, Waako P, Tabuti JR, Orodho J, Magadula JJ, Nicholas O, & Okemo P. Efficacy of Cryptolepis sanguinolenta root extract on slow-growing rifampicin resistant Mycobacterium tuberculosis.** *Journal of Medicinal Plants Research.* **2012***; 6***(7):1140-1146***.

We report here, the results from total crude methanol extract as well as serial ether, chloroform, and methanol extracts of the root of Cryptolepis sanguinolenta (Lindl) Schltr that were screened against three strains of Mycobacterium tuberculosis. The strains used included the pan sensitive H37Rv, the rifampicin-resistant TMC-331 and a wild strain of Mycobacetrium avium (MA) isolated from a Ugandan patient. The disc diffusion method was used for susceptibility tests on solid Middle brook 7H10 while the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined by the microtitre plate method using Middle brook 7H9 broth. We report that the total crude methanol extract showed the highest activity against H37Rv and TM-331 with complete clearance of quadrants at 50 mg/ml and zones of inhibition of 10.0 to 11 mm at 25 mg/ml concentration although it was not effective against M. avium. The corresponding MIC values were 1.17 mg/ml for H37Rv and 1.56 mg/ml for TMC-331. The values for isoniazid were 0.25 and 9.38 µg/ml for H37Rv and TMC-331, respectively, while for rifampicin the MIC value was 0.25 µg/ml for H37Rv but it was not active on TMC- 331. Acute toxicity test gave an LD50 of 758.5 mg/kg body weight while the phytochemical analysis showed the presence of alkaloids, tannins and flavonoids.

136.   **Kisanga F. Child sexual abuse in urban tanzania: possibilities and barriers for prevention. Master of Public Health and Clinical Medicine   Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background*:* Child sexual abuse is a global public health and human rights concern. Despite being a crime in most countries, and with well-known physical and mental health consequences, the majority of sexual offences are not reported. Child sexual abuse is a maltreatment form characterized by contact or noncontact acts perpetrated by adults or older children toward younger children who have little power to resist. This thesis aims to understand the social context of child sexual abuse, and the perceived roles of parents, community, and key professionals in handling such incidents in urban Tanzania. **Methods***:* A combination of qualitative and quantitative research designs were applied to four sub-studies performed in Temeke district, Dar es Salaam. Qualititative content analysis was conducted

on 23 in-depth interviews to describe the perceptions of key professionals and their experiences of handling cases of child sexual abuse, in addition, eight in-depth interviews with parents to capture their experiences of legal reporting of child sexual abuse incidents. Grounded theory was used to analyse 13 focus group discussions held with male and female community members to explore norm systems and community awareness related to child sexual abuse. Findings from these exploratory sub-studies paved the way for a school survey among 1359 students from 23 randomly selected secondary schools. Using descriptive statistics and multivariate regression analyses, prevalence, risk factors, and health consequences of child sexual abuse were estimated. **Results**: Lack of working tools and financial support were perceived as major problems among the key professionals. Corruption at community and institutional levels was seen as jeopardizing justice. Community passivity and lack of knowledge about laws regulating sexual offences were identified as additional challenges for conducting fair investigations. The community perspective illustrated that children's rights were challenged by lack of agency. Community awareness about child sexual abuse was clear but there was also a lack of trust in that the healthcare and legal systems were capable of handling such cases. Myths and cultural beliefs justified abuse. Disclosure of abuse was threatened by fear of stigma and discrimination. Parental interviews identified four types of sexual abuse incidents. The type most strongly associated with a determination to seek justice was one with an innocent child. The youth who was forced into sex elicited feelings of parental betrayal. The consenting, curious youth created uncertainty in how to proceed, while the transactional sex youth evoked feelings of parental powerlessness. Shame and stigma, but also fear of perpetrator retaliation and breach of confidentiality, were seen as challenges for disclosure. The school survey showed that 28% (boys=30%, girls=26%) of the students were exposed to child sexual abuse, with boys more often affected than girls. Twentysix per cent of boys and 19% of girls reported being forced to look at pornography. Forced sexual intercourse was experienced by 9.8% of boys and 8.7% of girls. Abuse increased with age and diminished self-rated health. Perpetrators were most often neighbours, teachers and peers. In contrast, survivor confidants were most often teachers, family members and friends. Most survivors did not want any action taken for the abuse. Proportions of students who perceived having fair/poor health increased with severity of abuse comparing the none-abused (7.0% and 6.3% of boys and girls respectively) with the ever abused (26% and 41% of boys and girls respectively) and those reporting penetrative sex (35% and 53% of boys and girls respectively). Likewise, suicidal ideation and attempts increased with severity of abuse when compared with those not abused. **Conclusions and recommendations**: Sexual abuse of children poses a devastating health or legal institutions are adequately prepared to handle these cases. Educating the community, economically empowering women and strengthening the medico-legal system are needed to increase the opportunity for human, legal and fair investigations and reactions. A national child protection system is needed to address the complexities of abuse at different levels and to safeguard the rights of children in Tanzania.

137. **Kitalile J. Urinary schistosomiasis: knowledge, attitude and practices among primaryschool children in mtera dam area, mpwapwa district. Master of Science in Tropical Diseases Control. Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Introduction and background Knowledge, attitude and preventive practices of risk groups

for urinary schistosomiasis are important aspects for control of the disease. However, knowledge,attitude and practices (KAP) of urinary schistosomiasis are poorly understood among primary school children which in turn increases the prevalence of the disease in endemic areas despite of MDA that takes place regulary. **Objective:** The aim of the study was to determine the knowledge, attitudes and practices (KAP) of school children towards urinary schistosomiasis in Mtera damarea, Mpwapwa District. **Methods:** A cross sectional study was conducted in June 2011 among primary school children in Mtera ward in Mpwapwa District Dodoma.A multi stage simple random sampling techniques was conducted to select the names of four villages, four primary schools and 400 names of pupils who participated in the study. Structured questionares were used to collect information on knowledge ,attitude and preventive practices of urinary schistosomiasis. **Results:**In the study, 360(90%) of the respondents reported to have ever heard about urinary schistosomiasis and the common source of information was School 144(36%). 237(59.5%) of the respondents associated water contact behavior with urinary schistosomiasis transmission and about 200(50%) quotedhaematuria as the major the symptom of the disease. About 45(11.25%) of the respondents reported to have ever urinated blood in urine (haematuria), and for those with history of haematuria there were no difference between the males and females The control measures mentioned by 152(38%) pupils were in line with those recommended by WHO urinary schistosomiasis control strategies. **Conclusion** In conclusion, the study has identified a medium level of knowledge concerning urinary schistosomiasis transmission among primary school children in Mtera ward.This fair level of knowledge about urinary schistosomiasis need tobe addressed through intensive health education that should focus on the cause and means of transmission as well as the risk behaviours associated with the acquisition of the disease. There is a need for improved health education focusing on the transmission, preventive and control strategies of urinary schistosomiasis among primary school children in an area. Regular Praziquantel uptake coupled with proper health education will help to lower the prevalence of the disease in an area.

138.   **Kizza I. Nurses' knowledge and practices related to pain assessment in critically ill patients at mulago hospital, Uganda. Master of (Critical Care and Trauma) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Nurses' knowledge and practices related to pain assessment in critically ill patients at Mulago National Hospital, Uganda. Critically ill patients experience moderate to severe acute pain which minimizes their comfort. If inadequately managed, acute pain leads to negative physiological and psychological sequelae including the development of chronic pain syndromes. Optimal pain relief is reliant on nurses' systematic and consistent assessment, and regular documentation of pain. Research related to nurses' knowledge and practices regarding pain assessment in the critical care setting remains limited. There has been no study in Uganda about nurses' knowledge and practices related to pain assessment among critically ill patients. The study was designed to describe nurses' knowledge, practices and barriers related to pain assessment for critically ill patients at Mulago National Hospital. **Methodology:** A descriptive cross-sectional study design was employed. Data was collected using a semi-structured questionnaire from a convenient sample of 170 nurses caring for critically ill patients at Mulago Hospital. The study was approved by ethical committees at Muhimbili University of Health and Allied Sciences and Mulago Hospital. **Analysis:** Data was analyzed using SPSS version 14.0. Results were summarized using frequencies and

percentages, and presented using figures, tables and text. **Results:** Majority (90%) of the participants reported to assess pain among critically ill patients but almost all of them (96%) do not use pain assessment tools. More than three quarters (79.1%) of the participants who assessed for pain documented findings after assessment. Majority of the participants (91.2%) had adequate knowledge. Almost half lacked knowledge on key pain assessment principles ; 43.5% mentioned people other than the patient as the most accurate in rating the pain intensity for the patient, and 44% do not always agree with patients' statements about pain. Barriers to pain assessment included; nursing workload (84.1%), lack of availability of assessment tools (74.1%), lack of education on assessment tools (82.4%) , lack of familiarity with tools (78.2%) , lack of protocols and guidelines on pain assessment and management (74.1%), poor documentation of pain assessment and management (77.6%) and poor communication of pain assessment priorities at the unit (74.7%). **Conclusion** Assessment and documentation of pain is done by majority of nurses. However, assessment tools are minimally used. Nurses had adequate knowledge on pain assessment. However, almost half of them did not know that it is the patient who best assesses their pain and do not always agree with patients' statements on pain. This is a knowledge gap which can affect practice. Perceived barriers included; lack of guidelines and protocols, assessment tools, documentation charts and education on assessment tools, poor documentation of pain assessment and management, and poor communication of pain assessment priorities at the unit. **Recommendations** There is need of a multifaceted approach by Ministry of Health, hospital leadership, nurse leaders, Nursing Council , clinical nurses and nurse- educators to; conduct a continuous professional education program on pain assessment for nurses caring for critically ill patients. In addition, introduction of pain assessment tools, guidelines and protocols, and charts for documentation that are appropriate to the setting coupled with practical training and support supervision is recommended. A mixed methods research exploring the actual practices is recommended.

139. **Kolars JC, Cahill K, Donkor P, Kaaya E, Lawson A, Serwadda D, & Sewankambo NK. Perspective: partnering for medical education in Sub-Saharan Africa: seeking the evidence for effective collaborations.** *Academic Medicine***.2012; *87*(2): 216-220.**

One of the major needs for medical schools and health systems in less affluent countries is system strengthening through the training and development of faculty, doctors, nurses, and other skilled health care workers. Partnering with medical schools in more affluent countries such as the United States is one potential approach for medical schools in underresourced areas, such as Sub-Saharan Africa. Most commonly, these partnerships have focused on research agendas or limited educational exchanges. In this perspective, the authors present an approach to strengthening collaborative relationships between three medical schools in the United States and four in Sub-Saharan Africa. The approach is explicitly focused on achieving partnerships that enable institutions to improve care. It developed from an initiative to fund partnerships or "collaboratives" that address 10 key learning questions determined to be central to focusing efforts on strengthening education systems and, in turn, improving health in Sub-Saharan Africa. The leaders of the schools involved in these partnerships met multiple times across three years to discuss how their collaboratives could address the ten learning questions including what is the best approach and what are the key ingredients for creating effective, multidimensional collaborations between academic

institutions in the North and institutions in Sub-Saharan Africa. Collaboratively, they defined a framework of evidence that can be used for evaluating their current initiatives and, potentially, for structuring future partnerships.

140.　　Komba C. Practices of abdominal fascial closure and related complications following elective midline laparotomy at muhimbili national hospital. Masters of Medicine(Surgery) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Midline laparotomy is the commonest approach for abdominal operations. The techniques and sutures used for abdominal fascial closure following elective midline laparotomy differ among surgeons and among centres worldwide. Faulty techniques and/or suture materials used may lead to a wide range of complications, some with devastating outcomes. **Objectives:** This study was intended to determine the practices of abdominal fascial closure and related complications following elective midline laparotomy at MNH. **Methods:** This was a hospital based descriptive prospective study. It included patients who underwent elective midline laparotomy in the units of general surgery, urology and gynaecology between April 2011 and November 2011. All patients were followed up after surgery which lasted until January 2012. **Results:** One hundred and forty eight patients were eligible for analysis. Among these, 130 (87.8%) were females and 18 (12.2%) were males. The overall average age was 44.7 (SD 13.9) years and ranged from 15 to 90 years. Continuous fascial closure was performed in 147 (99.3%) patients while in only one patient interrupted closure was performed. Likewise, mass closure was favoured (99.3%) as opposed to layered closure (0.7%). Vicryl was the commonly used suture material, 78 (52.7%) patients; followed by prolene 46 (31.1%) patients and PDSII 24 (16.2%). Sutures with size number 1 were used in all patients except one where suture with size number 0 was used. Duration of follow up after surgery varied from 2 months to 9 months; mean duration being 5.8 months (SD 2.0 months). Twelve (8.1%) patients encountered complications; 11 patients had one complication each while one patient had two complications. Complications reported were persistent wound pain (6), wound sepsis (5) and stitch sinus (2). The use of prolene was associated with persistent wound pain, p-value = 0.026; and in fact had higher overall complication rates, p-value = 0.002 **Conclusion and Recommendations:** Uniformity on the techniques of fascial closure after elective midline laparotomy does exist among surgeons in MNH; however the use of different sutures to serve this purpose reflects lack of consensus. Prolene use is associated with persistent wound pain. Factors influencing selection of sutures should be addressed. Long term follow up is crucial for patients who undergo midline laparotomy to assess the occurrence of incisional hernia.

141.　　Komba EV, Mbyuzi A O, & Mulangila R C, Adoption of I2 Vaccine in Immunization of Village Chickens against Newcastle Disease Virus in Southern Tanzania: Immune Status of Farmer Vaccinated Birds. *Journal of Agricultural Science.* 2012; *4*(4): p23.

Newcastle disease (ND) is an economically important disease of poultry for which vaccination is applied as a preventive measure in many countries. In June 2009 we conducted a survey to establish the immune status of village chickens against ND virus in villages where vaccination programs, using thermotolerant ND I_2 vaccine were adopted by farmers in southern Tanzania. One hundred farmers from ten villages in three district councils were involved. Blood samples were collected from 499 chickens and sera harvested for

Hemmagglutination Inhibition (HI) test. Results indicated that 73.3% of the sampled birds had protective levels of antibodies against ND virus. A significantly large proportional of vaccinated adult chickens attained protective immunity as compared to growers and chicks. We recommend advocating ND I_2 in other village chicken keeping communities of the country for ND control. Additionally farmers need to be educated on control measures for other important diseases of village chickens.

142.   **Komba EV, Mkupasi EM, Mbyuzi AO, Mshamu S, Mzula A, & Luwumba D, Sanitary practices and occurrence of zoonotic conditions in cattle at slaughter in Morogoro Municipality, Tanzania: implications for public health.** *Tanzania Journal of Health Research.* **2012;** *14*(2)**.**

As meat consumption is increasing worldwide to cover for protein demands, also raise concerns and challenges regarding meat hygiene and safety. The current one year follow up study aimed at investigating on sanitary practices and occurrence of zoonotic conditions, during post-mortem examination, in cattle at slaughter in Morogoro Municipality abattoir. Sanitary practices were assessed through direct observation where as routine post-mortem inspection procedures were employed to detect zoonotic conditions in cattle at slaughter. During the study period a total of 30,713 cattle were slaughtered and inspected at the abattoir. Results revealed poor hygienic practices at the level of abattoir surrounding, the slaughter operation area, personnel as well as meat vans. Whole carcasses, lungs, livers, hearts and heads were condemned due to zoonotic conditions at rates of 0.026%, 1.96%, 1.61%, 0.02% and 0.21% respectively. Bovine tuberculosis, *Cysticercus bovis* cysts, fasciolosis and hydatidosis were the responsible zoonotic conditions for the condemnations. Bovine tuberculosis was a leading zoonotic cause of condemnations accounting for 95.7% of lungs and 100% of all head and carcass condemnations. *Cysticercus bovis* cysts were ranking the second in serving as causes of condemnations closely followed by fasciolosis and lastly hydatidosis. Occurrence of disease conditions with zoonotic implication in cattle at slaughter, meant for human consumption, may pose significant economic and public health risks to especially disaster-prone marginalized communities. Thus, there is a need to introduce appropriate control measures of livestock diseases to minimize the rate of infection; and eventually reduce economic losses and safeguard public health.

143.   **Koyio LN, Kikwilu E, Mulder J, Frencken JE. Attitudes, subjective norms, and intention to perform routine oral examination for oropharyngeal candidiasis as perceived by primary health-care providers in Nairobi Province** *Journal of Public Health Dentistry***, (2012) .**

Objectives: To assess attitudes, subjective norms, and intentions of primary health-care (PHC) providers in performing routine oral examination for oropharyngeal candidiasis (OPC) during outpatient consultations. Methods: A 47-item Theory of Planned Behaviour-based questionnaire was developed and administered, in a cross-sectional survey, to 216 PHC providers (clinical officers and nurses) working in 54 clinics, dispensaries, and health centers in Nairobi Province in January 2010. The constructs - attitudes, subjective norms, and perceived behavioral control (dependent variables) - and their individual indirect (direct) items were analyzed for scores, internal validity, independent variables (district, gender, years of service, profession, and age), and contribution to intentions. Perceived behavioral

control had low construct validity and was therefore removed from subsequent analyses. Results: The questionnaire was completed by 195 participants (90 percent response rate). PHC provider's attitudes, subjective norms, and intentions to perform an oral examination during outpatient consultations were highly positive, with mean scores of 6.30 (0.82), 6.06 (1.07), and 5.6 (1.33), respectively, regardless of sociodemographic characteristics. Indirect attitude and subjective norms were strongly correlated to their individual items (r=0.63-0.79, P<0.05 and r=0.78-0.87, P<0.05) and moderately to their direct items (r=0.44, P<0.0001 and r=0.52, P<0.0001). Attitudes (P=0.0026) and subjective norms (P<0.0001) were both predictive of intentions. Conclusions: PHC providers were willing to integrate patients' oral health care into their routine medical consultations. Emphasizing the importance of detecting other oral problems and of the fact that routine oral examination for OPC is likely to give patients' fulfillment will enhance PHC providers' morale in performing routine oral examinations. Winning support from policy makers, their supervisors, specialists, and colleagues is important for motivating PHC providers to perform routine oral examinations for OPC at their workplaces.

144.   Kwesigabo G , Mwangu MA , Kakoko DC, Warriner I , Mkony CA, Killewo J, MacFarlane SB, Kaaya EE, Freeman PTanzania's health system and workforce crisis *Journal of Public Health Policy*, **(2012); 33 (SUPPL.1): S35-S44.**

This introduction to Tanzania's health system and acute workforce shortage familiarizes readers with the context in which health professions education takes place. The paper touches on poverty rates, population growth, and characteristics of the health system. The critical shortage of trained health staff is a major challenge facing the health sector, aggravated by low motivation of the few available staff. Other challenges facing the health sector include lack of effective staff supervision, poor transport and communication infrastructure and shortage of drugs and medical equipment. We recommend appropriate action be taken by the government and other stakeholders to provide more financial and human resources for the sector while ensuring their efficient and effective utilization to improve services delivery.

145.   Kwesigabo G, Mwangu MA, Kakoko DC, Killewo J. Health challenges in Tanzania: Context for educating health professionals *Journal of Public Health Policy*, **(2012); 33 (SUPPL.1): S23-S34.** In this commentary we introduce the population age and gender distributions, the birth rate, and life expectancy in Tanzania's largely agricultural society and highlight the vulnerable status of mothers and children. We present underlying causes of poor health, the leading causes of Disability-Adjusted Life Years and review threats from exposure to disease, toxic substances, and injuries that require protection of populations and control efforts. We summarize health challenges posed by malaria, tuberculosis, and HIV/AIDS, non-communicable diseases, and by new threats that may change the picture of disease and require adjustments in how training institutions prepare the health workforce.

146.   Kwesigabo G, Mwangu MA, Kakoko DC, & Killewo J. Health challenges in Tanzania: Context for educating health professionals. *Journal of public health policy.* **2012;33(S1): S23–S34**In this commentary we introduce the population age and gender distributions, the birth rate, and life expectancy in Tanzania's largely agricultural society and

highlight the vulnerable status of mothers and children. We present underlying causes of poor health, the leading causes of Disability-Adjusted Life Years and review threats from exposure to disease, toxic substances, and injuries that require protection of populations and control efforts. We summarize health challenges posed by malaria, tuberculosis, and HIV/AIDS, non-communicable diseases, and by new threats that may change the picture of disease and require adjustments in how training institutions prepare the health workforce.

147. **Kwesigabo G, Mwangu MA, Kakoko DC, Warriner I, Mkony CA, Killewo J, Macfarlane SB, Kaaya EE & Freeman P. Tanzania's health system and workforce crisis.** *Journal of public health policy*, **S35-S44.**

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148. **Kwesigabo G, Mwangu MA, Kakoko DC, Warriner I, Mkony CA, Killewo J, Macfarlaned SB, Kaaya EE. & Freeman P. Tanzania's health system and workforce crisis.** *Journal of public health policy*, **2012; 33, S35-S44.**

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149. **Kyambile W. Spectrum of blood bacterial isolates from severely malnourished children aged 2 to 59 months at muhimbili national hospital, dar es salaam, Tanzania. Master of Medicine in Paediatrics and Child Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Background: In Tanzania, over 50% of under five deaths are attributed to malnutrition. At Muhimbili national hospital severe acute Malnutrition has the highest case fatality rate (32%) compared to other paediatrics conditions. However septicemia as a cause of death in these patients is not well known. Routine empirical uses of antibiotics for the treatment of bacterial infections in the first phase of inpatient management of SAM as recommended by WHO is implemented. Changes of aetiologies and susceptibility to antibiotics might have occurred over time. Therefore it is important to have regular updates on the sensitivity pattern of the commonly used antimicrobials. This information is useful in the proper management of

bacterial septicaemia in severe acute malnutrition. **Broad objective:** To determine the spectrum and antimicrobial sensitivity pattern of blood bacteria isolates from severely malnourished children aged 2 to 59 months admitted at Muhimbili National hospital. **Methodology**: This was a cross sectional hospital based study. One hundred thirty eight (138) children aged 2 to 59 months who met the inclusion criteria were recruited in the study between September 2011 to March 2012. Children were consecutively enrolled in the study after their parents or guardians had given a written consent. Demographic and clinical findings were recorded. Bacterial Isolates were recovered from cultured blood specimens. Antibiotic susceptibility tests were performed using commercial antibiotic disks by the Kirby- Bauer disc diffusion method. Data analysis was done using SSPS program for windows version 16 Software.**Results**: Bacteremia among severely malnourished patients admitted at Muhimbili National Hospital was 29%. *Staphylococcus aureus* was the commonest gram positive aerobe (47.5%), followed by *Coagulase negative Staphylococcus* (32.5%) and group D streptococcus (12.5%). The Gram – negative aerobes *Klebsiella* and *Escherichia coli species* constituted 5% and 2.5% of all isolates respectively. Majority of patients (68.1%) had taken antibiotics prior to blood sample collection All the blood isolates demonstrated an overall low susceptibility to Ampicillin (15%), Ceftriaxone,(50%),Gentamicin(55%), and Chloramphenicol(58%), but were most susceptible to amikacin (90%) and Kanamycin (92%). Only 58% of the blood bacterial isolates were susceptible to the antibiotics as recommended by the WHO empirical regimens. Forty eight children (34.8%) were HIV positive. Children with HIV infections grew more bacterial isolates compared to those without HIV infections (p = 0.05). Moreover, children with HIV infections grew the group D streptococcus (GDS) aerobes more than those who were HIV negative (p = 0.05). There was no significant difference in susceptibility to antibiotics between the HIV positive and HIV negative groups. Twenty six (18.8%) children died and 7 (17.5%) of them had bacteremia. **Conclusions:** The prevalence and pattern of blood bacterial isolates in severely malnourished children is the same since it was last reported by Isaac et al in 1990.Bacterial isolates were similar among HIV positive and HIV negative children. However, patients with HIV infection were most likely to have bacteremia than those without.The blood bacterial isolates were highly susceptible to Kanamycin (92%) and Amikacin (90%). There was high level of bacterial resistance to Chloramphenicol (58%), Gentamicin (55%), Ceftriaxone (50%), Ampicillin (15%), and Cloxacillin (10%), and compared to the previous studies done in the same setting. There was no difference in the susceptibility to antibiotics by HIV infection status.

150.   **Lachance J, Vernot B, Elbers C, Ferwerda B, Froment A, Bodo JM, Lema G, Fu W, Nyambo TB, Rebbeck TR, Zhang K, Akey JM & Tishkoff SA. Evolutionary history and adaptation from high coverage whole-genome sequences of diverse African hunter-gatherers.** *Cell*. **2012;** *150***(3): 457-469.**

To reconstruct modern human evolutionary history and identify loci that have shaped hunter-gatherer adaptation, we sequenced the whole genomes of five individuals in each of three different hunter-gatherer populations at $>60\times$ coverage: Pygmies from Cameroon and

Khoesan-speaking Hadza and Sandawe from Tanzania. We identify 13.4 million variants, substantially increasing the set of known human variation. We found evidence of archaic introgression in all three populations, and the distribution of time to most recent common ancestors from these regions is similar to that observed for introgressed regions in Europeans. Additionally, we identify numerous loci that harbor signatures of local adaptation, including genes involved in immunity, metabolism, olfactory and taste perception, reproduction, and wound healing. Within the Pygmy population, we identify multiple highly differentiated loci that play a role in growth and anterior pituitary function and are associated with height.

151.   Langley P, Dewhurst M, Di Marco LY, Adams P, Dewhurst F, Mwita JC, Walker R, Murray A. Accuracy of algorithms for detection of atrial fibrillation from short duration beat interval recordings *Medical Engineering and Physics*,(2012); 34 (10): 1441-1447.

Atrial fibrillation (AF) is characterised by highly variable beat intervals. The aims of the study were to assess the accuracy of AF detection algorithms from short analysis durations and to validate prospectively the accuracy on a large community-based cohort of elderly subjects. Three algorithms for AF detection were evaluated: coefficient of variation (CV), mean successive difference (Δ) and coefficient of sample entropy (COSEn), using two databases of beat interval recordings: 167 recordings of 300. s duration for a range of rhythms acquired in a hospital setting and 2130 recordings of 10. s duration acquired in the community. Using the longer recordings receiver operating characteristic (ROC) analysis was used to identify optimal algorithm thresholds and to evaluate analysis durations ranging from 5. s to 60. s. An ROC area of 93% was obtained at recording duration of 60. s but remained above 90% for durations as low as 5. s. Prospective analysis on the 2130 recordings gave AF detector sensitivities from 90.5% (CV and Δ) to 95.2% (COSEn), specificities from 89.3% (Δ) to 93.4% (COSEn) and accuracy from 89.3% (Δ) to 93.4% (COSEn), not significantly different to those obtained on the initial database. AF detection algorithms are effective for short analysis durations, offering the prospect of a simple and rapid diagnostic test based on beat intervals alone.

152.   Lee JM, Ramos EM, Lee JH, Gillis T, Mysore JS, Hayden MR, Warby SC, Morrison P, Nance M, Ross CA, Margolis RL, SquitierI F, Orobello S, Di Donato S, Gomez-Tortosa E, Ayuso C, Suchowersky O, Trent RJA, McCusker E, Novelletto A, Frontali M, Jones R, Ashizawa T, Frank S, Saint-Hilaire MH, Hersch SM, Rosas HD, Lucente D, Harrison MB, Zanko A, Abramson RK, Marder K, Sequeiros J, Paulsen JS, Landwehrmeyer GB, Myers RH, MacDonald ME, Gusella JF.& Ames D. CAG repeat expansion in Huntington disease determines age at onset in a fully dominant fashion. *Neurology*.2012; *78*(10): 690-695.S.

Objective: Age at onset of diagnostic motor manifestations in Huntington disease (HD) is

strongly correlated with an expanded CAG trinucleotide repeat. The length of the normal CAG repeat allele has been reported also to influence age at onset, in interaction with the expanded allele. Due to profound implications for disease mechanism and modification, we tested whether the normal allele, interaction between the expanded and normal alleles, or presence of a second expanded allele affects age at onset of HD motor signs. **Methods:** We modeled natural log-transformed age at onset as a function of CAG repeat lengths of expanded and normal alleles and their interaction by linear regression. **Results:** An apparently significant effect of interaction on age at motor onset among 4,068 subjects was dependent on a single outlier data point. A rigorous statistical analysis with a well-behaved dataset that conformed to the fundamental assumptions of linear regression (e.g., constant variance and normally distributed error) revealed significance only for the expanded CAG repeat, with no effect of the normal CAG repeat. Ten subjects with 2 expanded alleles showed an age at motor onset consistent with the length of the larger expanded allele. **Conclusions:** Normal allele CAG length, interaction between expanded and normal alleles, and presence of a second expanded allele do not influence age at onset of motor manifestations, indicating that the rate of HD pathogenesis leading to motor diagnosis is determined by a completely dominant action of the longest expanded allele and as yet unidentified genetic or environmental factors.

153.   **Lekashingo L. Exploring the effects of user fees, quality of care and utilization of health services on enrolment in community health fund, bagamoyo district, Tanzania. Masters of Medicine in Community Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: The co-existence of Community Health Fund (CHF) and user fees in Tanzania as health financial mechanisms have affected to CHF enrolment. However, little is known about the effect of user fees on CHF enrolment, non-enrollment and drop-out. **Objectives:** The study aimed at exploring the effects of coexistence of user fees and Community Health Fund scheme, quality of care and utilization of health services on CHF enrolment, non-enrollment and drop out in Bagamoyo District, Coast Region, Tanzania. **Methods:** An exploratory cross sectional community and health facility study was conducted in Bagamoyo District between April and May 2012. The study involved heads of households who were categorized in four groups; CHF members from community (63), non CHF members from the community (60), CHF members from health facilities (145) and non CHF members from health facilities (144). The study participants were interviewed using a semistructured questionnaire. Univariate and multivariate analyses were done to find factors associated CHF enrollment, non-enrollment and drop-out. **Results:** Although user fee was not pointed as the reason for not joining CHF, CHF members were significantly more likely to pay higher amount of user fee than non CHF members (p < 0.01). Being a CHF member was associated with non- payment of user fees and higher expenditure on health services. Furthermore, health services utilization, although slightly lower among non CHF members, was not statistically different between CHF and non CHF members (p = 0.09). Poor quality of health services at health services and poor referral mechanisms were the main reasons for dropping out from CHF. **Recommendations:** The co-existence of user fees and CHF should be re-visited. Efforts should be taken to improve quality of health services and referral mechanisms in the public health facilities in Bagamoyo in order to reduce unnecessary distress to the CHF

members, decrease drop out and improve the performance of CHF in Bagamoyo.

154.   **Leshabari S, Lubbock LA, Kaijage H, Kalala W, Koehler G, Massawe S, Muganyizi P , MacFarlane SB, O'Sullivan P.S. First steps towards interprofessional health practice in Tanzania: An educational experiment in rural Bagamoyo district (2012)** *Journal of Public Health Policy*, **33 (SUPPL.1): S138-S149.**

Health workers in Tanzania struggle to provide adequate health care for populations with high maternal, neonatal, and child mortality and high prevalence of communicable and non-communicable diseases. There are longstanding shortages of staff and resources. Universities are training more health professionals and revising curricula to be sure that staff have the specific skills needed to work in rural districts. This includes training people from different disciplines to work more effectively together. While teamwork is important in all settings, it is particularly critical in rural areas where there are few trained professionals. The health professional schools at Muhimbili University of Health and Allied Sciences (MUHAS) developed curricula that share common competencies to promote interprofessional cooperation. In this article, we describe a pilot program developed by MUHAS to train its professional students (dentists, doctors, environmental health officers, nurses, and pharmacists) to work collaboratively with each other and with other health staff at the district level. We describe the reactions of participants, and identify some considerations for taking such an exercise to scale for education.

155.   **Leshabari S, Lubbock LA, Kaijage H, Kalala W, Koehler G, Massawe S, & O'Sullivan PS. First steps towards interprofessional health practice in Tanzania: An educational experiment in rural Bagamoyo district.** *Journal of public health policy*.**2012; S138-S149.**

Health workers in Tanzania struggle to provide adequate health care for populations with high maternal, neonatal, and child mortality and high prevalence of communicable and non-communicable diseases. There are longstanding shortages of staff and resources. Universities are training more health professionals and revising curricula to be sure that staff have the specific skills needed to work in rural districts. This includes training people from different disciplines to work more effectively together. While teamwork is important in all settings, it is particularly critical in rural areas where there are few trained professionals. The health professional schools at Muhimbili University of Health and Allied Sciences (MUHAS) developed curricula that share common competencies to promote interprofessional cooperation. In this article, we describe a pilot program developed by MUHAS to train its professional students (dentists, doctors, environmental health officers, nurses, and pharmacists) to work collaboratively with each other and with other health staff at the district level. We describe the reactions of participants, and identify some considerations for taking such an exercise to scale for education.

156.   **Leyn D. Entitled household food insecurity and anti retro viral adherence among adult HIV positive patients attending care and treatment clinics in Temeke, Dar es Salaam**. masters of Public Health **Disease Control) Dissertation 2012.** *Muhimbili*

University of Health and Allied Sciences.Dar es salaam .**Background:** Among those persons taking ARV therapies, more than half were food insecure, and food insecurity was associated with incomplete adherence and viral non-suppression in people who were less than 80% adherent .**Main objective:** To assess the magnitude of household food insecurity and its determinants, its association to adherence to ART among adult patients attending CTCs in Dar es salaam. **Methodology:** A descriptive cross sectional facility-based study, conducted in Feb 2012.Simple random sampling was done daily to select participants from the registry. Data was collected through face-to- face structured interviews using a structured questionnaire. Adherence was assessed by self report in the last month before the study and Household Food Insecurity Access Scale tool was used to access food insecurity. **Subjects:** A total of 272 HIV/AIDS patients aged 18years and above attending CTCs in Dar es Salaam who have been on ART were selected. **Results:** A total of 272 (females=67.9%; males= 32.1%) people living with HIV/AIDS attending CTC were interviewed. The average age of the respondents was 38 years old and most (43.9%)() were married. The majority (65.1%) respondents had primary school education. However, food insecurity was least (48.2%) among those who were single and highest (57.7%) among those widowed. Low level of food insecurity was associated with having completed secondary education (Adjusted OR=0.75; 95%CI, 0.047–1.19) and high household size with adults who are employed (OR=0.54; 95%CI, 0.34–0.85). Participants who lived as singles were less associated food security or less meals increased the likelihood of food insecurity (OR=4.2; 95% CI1.7-9.8). Low frequency of meals was significantly more prevalent (18.6%) multiple logistic regression to determine socio-demographic and factors associated with food insecurity which was measured using the Household Food Insecurity Access Scale. The study showed that approximately 42% of the households were categorized as food secure, 9.6% as mildly food-insecure, 32.9% as moderately food-insecure and 13.2% as severely food-insecure. Food insecurity was positively associated with the number of members in the household (P<0.05) and negatively associated with parental education level and job status and ART adherence (P<0.05). **Conclusions and recommendations:** Food insecurity was prevalent among households in HIV patients in Temeke district and food insecurity status was associated with socio-economic factors. Screening for and v addressing food insecurity should be a critical component of HIV prevention and treatment programs. Household food insecurity should be assessed in a larger and more diverse population in urban setting.

157.   **Ligoha D. Suitability of rapid psa test for prostate cancer screening in Tanzania**. **Master of Science in Biochemistry Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Prostate cancer is the second leading cause of death in men above 50 years old. Because of late diagnosis, many people turn to hospital when the disease is at an advanced stage, and no longer manageable. Despite the wide uses of prostate specific antigen (PSA) as screening tool in the world, very few Tanzanians have access to this service. The quantitative PSA assay currently used in Tanzania is not widely available because it requires: expensive equipment, skilled personnel and the test itself is costly. However, in other countries, a qualitative assay which is relatively cheap, does not require sophisticated instrument and can be used even in remote areas is available and in use. Therefore in order to detect early prostate cancer, a suitable screening tool is required to be developed and implemented, since the disease is potentially curable when diagnosed early. **Aim of the study** The aim of this

study was to establish the accuracy of qualitative (rapid) PSA test by comparing with quantitative PSA ELISA assay and to determine whether obesity affects the level of PSA among Tanzanian men above 45 years of age.

158. **Liwenga E, Swai E, Nsemw L, Katunzi A, Gwambene B, Joshua M, Stathers F, Tanya, & Lamboll, R. Exploring urban rural interdependence and the impact of climate change in Tanzania and Malawi: final narrative report. 2012.**

Africa is rapidly urbanizing, by 2030 there are projected to be over 759 million African urban dwellers. This poses major challenges for the further provision of infrastructure and services. Alongside this, Africa is particularly vulnerable to climate change and climate variability (CC&CV). As urbanisation and inequality increase, more sophisticated analyses of the linkages and interdependencies between rural and urban areas are emerging. Flows of products, people, knowledge and information, natural resources and money provide strong and dynamic linkages. This action research project explored the relationships and dynamics between rural localities and their linked urban centres, focusing on the agriculture and food innovation systems. It specifically aimed to: Develop a collective understanding of the vulnerabilities, roles, climate-related risks and strategies among interdependent rural and urban communities, local government and other key stakeholders. Collectively develop and test viable options and strategies for key interdependent rural- urban stakeholders in the agriculture and food innovation systems to adapt to CC&CV; and Learn and share lessons for scaling up successful strategies for strengthening adaptive capacity within these interdependent agriculture and food innovation systems.

159. **Loomer PM, Masalu JR , Mumghamba E, Perry DA. New curriculum in dentistry for Tanzania: Competency-based education for patient and population health (2008-2011)** *Journal of Public Health Policy*, **(2012); 33 (SUPPL.1): S92-S109.**

From 2008 to 2011, the School of Dentistry at Muhimbili University of Health and Allied Sciences in Tanzania revised and then initiated implementation of a curriculum to improve the educational process for, and competence of, its graduates. As an increasing body of research demonstrates the detrimental effects of oral diseases on health and the interrelationships between oral and systemic diseases (including HIV and diabetes), the importance of dentistry education grows. We describe the population oral health problems in Tanzania, the need to enhance the dental workforce, and the process of curricular reform to meet these needs. This reform included transition to a competency-based curriculum featuring teaching methods that will enhance the effectiveness of the education and performance of graduates in traditional and new roles. We conclude with lessons for Tanzania and for health professions educational institutions elsewhere, as well as for public health-care planners concerned about linking health professions education to improving population health in resource-poor countries.

160. **Luxwolda MF, Kuipers RS, Sango WS, Kwesigabo G, Dijck-Brouwer DJ, & Muskiet FA. (2012). A maternal erythrocyte DHA content of approximately 6 g% is the DHA status at which intrauterine DHA biomagnifications turns into bioattenuation and**

postnatal infant DHA equilibrium is reached. *European journal of nutrition*.2012; *51*(6): 665-675.

Purpose Higher long-chain polyunsaturated fatty acids (LCP) in infant compared with maternal lipids at delivery is named biomagnification. The decline of infant and maternal docosahexaenoic acid (DHA) status during lactation in Western countries suggests maternal depletion. We investigated whether biomagnification persists at lifelong high fish intakes and whether the latter prevents a postpartum decline of infant and/or maternal DHA status. **Methods** We studied 3 Tanzanian tribes with low (Maasai: 0/week), intermediate (Pare: 2–3/week), and high (Sengerema: 4–5/week) fish intakes. DHA and arachidonic acid (AA) were determined in maternal (m) and infant (i) erythrocytes (RBC) during pregnancy (1st trimester n = 14, 2nd = 103, 3rd = 88), and in mother–infant pairs at delivery (n = 63) and at 3 months postpartum (n = 104). **Results** At delivery, infants of all tribes had similar iRBC-AA which was higher than, and unrelated to, mRBCAA. Transplacental DHA biomagnification occurred up to5.6 g% mRBC-DHA;higher mRBC-DHA was associated with ''bioattenuation'' (i.e., iRBC-DHA\mRBC-DHA). Compared to delivery, mRBC-AA after 3 months was higher, while iRBC-AA was lower. mRBC-DHA after 3 months was lower, while iRBC-DHA was lower (low fish intake), equal (intermediate fish intake), and higher (high fish intake) compared to delivery. We estimated that postpartum iRBC-DHA equilibrium is reached at 5.9 g%, which corresponds to a mRBC-DHA of 6.1 g% throughout pregnancy. **Conclusion** Uniform high iRBC-AA at delivery might indicate the importance of intrauterine infant AA status. Biomagnification reflects low maternal DHA status, and bioattenuation may prevent intrauterine competition of DHA with AA. A mRBC-DHA of about 6 g% during pregnancy predicts maternal–fetal equilibrium at delivery, postnatal iRBC-DHA equilibrium, but is unable to prevent a postnatal mRBC-DHA decline.

161. **Lwezaula S. Perceptions and attitude of the community members towards the uptake of home based counselling and testing in ilala district. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background Although home based counseling and testing has the potential of reaching many Tanzanians through bringing the services to their homes, little is known regarding the perception and attitude of the community members towards being counseled and tested in their home environment. Insufficient data exist to recommend largescale implementation of home-based HIV testing in the country. **Objective** To determine the perception and attitude of the community members towards the uptake of home based counseling and testing services in Ilala municipal, Dar es Salaam. **Methodology** The study employed a cross-sectional Descriptive design using both quantitative and qualitative approaches. A multistage random sampling was used whereby 5 out of 22 wards were randomly selected. Then three streets in each of the five wards were randomly selected, from which a total sample of 384 respondents were recruited. Purposeful sampling technique was used to recruit Focus group discussion participants. Quantitative data were collected through a structured questionnaire and qualitative data were collected using focus group discussions. **Results** Among the respondents of the study, only 24.2% had ever heard of HBCT services and 21.6% were aware of the existing HI However, more than half of the respondents (58%) know their rights as long as counseling and testing is concerned. Regarding attitude of the respondents on the

uptake of HBCT services, 200 (52.1%) indicated positive attitudes towards HBCT approach for provision of HTC services. Moreover, focus group discussion (FGD) participants of the respondents expressed perceived barriers in receiving counseling and testing services in their homes including fear of positive results, unavailable time to be counseled and tested at home and concerns about confidentiality. **Conclusion and recommendations** Generally, the results of this study have shown that community members of Ilala district have a positive attitude toward the uptake of home based counseling and testing. This is a good sign with respect to implementation of HBCT but perceived barriers should be addressed in the plan for roll out. Furthermore, community sensitization should be an integral component of HBCT rollout.V and AIDS Act.

162.   Lwoga E. Making learning and Web 2.0 technologies work for higher learning institutions in Africa *Campus-Wide Information Systems*, (2012): 29 (2): 90-107.

Purpose: This paper seeks to assess the extent to which learning and Web 2.0 technologies are utilised to support learning and teaching in Africa's higher learning institutions, with a specific focus on Tanzania's public universities. Design/methodology/approach: A combination of content analysis and semi-structured interviews was used to collect data. Semi-structured interviews were conducted with ICT personnel from six of the eight public universities in Tanzania in 2011. Findings: The study found that the adoption of e-learning and Web 2.0 technologies is still in its infancy in Tanzania's public universities. However, there was much enthusiasm amongst respondents for developing the potential of e-learning and Web 2.0 tools in their universities. Practical implications: The study seeks to promote academic inquiry about the need for innovative Web 2.0 technologies in learning and teaching and the adoption of these emerging technologies in Africa's higher learning institutions. Originality/value: The study provides empirical findings on the use of e-learning and Web 2.0 for higher education, specifically in the Tanzanian context. The study provides a basis for further research on the use of Web 2.0 technologies in higher education.

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164.   **Lwoga ET, Ngulube P & Stilwell C. Information and knowledge needs, access and use for small-scale farming in Tanzania.** *Innovation: journal of appropriate librarianship and information work in Southern Africa: Agricultural Knowledge and Information Systems***, 2012;(44): 126-140.**

This article assesses information and knowledge needs, access and use for agricultural development in the rural areas of developing countries, with a specific focus on Tanzania. Data from focus groups and information mapping and linkage diagrams were used to triangulate with the interview data in order to bring together the strength of all data sets to validate, confirm and corroborate findings from various sources. The findings revealed that the information seeking patterns of farmers were location specific. The major sources of information for farmers were predominantly local. Most respondents indicated public extension as an important source of agricultural information. Private extension services, village meetings and farmer groups were significant sources of information in some regions. Printed information had low use. The role of information and communication technologies in providing access to agricultural knowledge and information, and the application of information and knowledge on farming systems in the rural areas of Tanzania are also presented. The article concludes with recommendations for improved access to agricultural knowledge and information in the rural areas of Tanzania.

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166.   **Lwoga ET. (2012). Building a virtual academic library with web 2.0 technologies in Tanzania.**

This paper aims to promote academic inquiry into the need for innovative library 2.0 technologies, by demonstrating the work undertaken by Muhimbili University of Health and Allied Sciences (MUHAS) Library in an effort to integrate web 2.0 technologies in its functions to enhance the delivery and promotion of its services. The paper, firstly, examines the utilization of web 2.0 in academic libraries across the world, secondly, presents the methodology used, thirdly, demonstrates the application of web 2.0 at MUHAS library, by describing various tools, and how MUHAS library is making use of them, and provides challenges, lessons learnt, conclusions and recommendations. The paper shows that web 2.0 technologies can be utilized to enhance the delivery and promotion of academic library services and resources without undermining their quality. MUHAS library offers practical example of how web 2.0 tools can be adopted to enhance the quality of academic library services in an African context. This paper is of significance to academic libraries that are still considering their options with regard to the application of web 2.0 technologies**.**

167.   Lwoga ET. Building a virtual academic library with web 2.0 technologies in Tanzania. IST-Africa 2012 Conference, 9-11 May 2012, Dar es Salaam.

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168.   Lyimo J. Uptake of measles vaccination services and associated factors among under fives in temeke district, dar es salaam region, Tanzania. Master of Applied Epidemiology   Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Background: Measles outbreaks have been recurring in Tanzania despite ongoing efforts in immunization. In May 2011, there was a large Measles outbreak in the Temeke district, Dar es salaam where a total 588 cases were reported. The investigation found that a large percentage of underfives had not received measles vaccination. Although measles vaccination coverage figures are easily available, information about factors affecting uptake of measles vaccination services is not easily available. In order to plan and implement interventions that aim to improve uptake of measles vaccination services, information on the determinants of measles uptake level such as community, health facility, household and children factors is needed. This study investigated the factors associated with the low uptake of vaccination services in Temeke district. **Methods**: A cross-sectional survey was conducted

to assess the uptake of measles vaccination services and associated factors among children aged 12-23 months. Uptake of measles vaccination services was defined as the act of taking a child for vaccination which shows the level of acceptance of vaccination services by a caretaker. Uptake of measles vaccination was categorized into two groups; Low uptake and high uptake of vaccination services. Any child who had received both routine and supplementary measles vaccines was said to have high uptake and a child was said to have a low uptake of vaccination services if he/she had received either routine or supplementary only or neither of the two vaccines. Household and children determinants of low uptake for measles services were assessed. Bivariate and multivariate logistic regression were performed to identify significant determinants of low uptake. Analysis was done using EpiInfo version 3.5.1. **Results**: A total of 295 children aged between 12-23 months were involved in the study. The mean age was 17 months. A total of 82 out 295 (27.8%) children had received either routine or supplementary vaccine or neither of the two vaccine i.e had a low uptake of vaccination services. A total of 23 (7.8%) out of 295 children had not received routine measles vaccination while 66 out of 295 (23.4%) children had not received supplementary measles vaccination. The number of children who neither received routine nor supplementary vaccinations was 9 out of 295 (3%). Factors which were significantly associated with low uptake of vaccination services were younger age of the child (Adjusted Odds Ratio (AOR) 2.11 CI 1.10-4.38), low education level of the caretaker (AOR 3.36 CI 1.17-9.62), caretaker's lack of knowledge on the purpose of supplementary measles vaccine (AOR 2.04 CI 1.06-3.93), caretaker's lack of knowledge of the age for routine measles vaccination (AOR 4.71 CI 2.47-8.99), residing in a ward where there are high measles cases (AOR 2.29 CI 1.23- 4.27) and residing in a ward less than 2 years duration (AOR 2.24 CI 1.12-4.48). **Conclusions**: The uptake of both routine and supplementary measles vaccine is below the Tanzania estimated coverage. Household and childhood factors played a role in determining the uptake of measles vaccination services. There is a need for the DHMT to revisit the Health education sessions during RCH services covering vaccine preventable diseases and identify gaps to be addressed. The team should also find out reasons behind mothers not sending children for vaccination especially supplementary vaccines.

169.   **Lyimo MA, Mosi MN, Housman ML, Zain-Ul-Abideen M, Lee FV, Howell AL, & Connor RI. Breast milk from Tanzanian women has divergent effects on cell-free and cell-associated HIV-1 infection in vitro.** *PloS one*.**2012;** *7*(**8**): **e43815.**

Transmission of HIV-1 during breastfeeding is a significant source of new pediatric infections in sub-Saharan Africa. Breast milk from HIV-positive mothers contains both cell-free and cell-associated virus; however, the impact of breast milk on HIV-1 infectivity remains poorly understood. In the present study, breast milk was collected from HIV-positive and HIV-negative Tanzanian women attending antenatal clinics in Dar es Salaam. Milk was analyzed for activity *in vitro* against both cell-free and cell-associated HIV-1. Potent inhibition of cell-free R5 and X4 HIV-1 occurred in the presence of milk from all donors regardless of HIV-1 serostatus. Inhibition of cell-free HIV-1 infection positively correlated with milk levels of sialyl-Lewis[X] from HIV-positive donors. In contrast, milk from 8 of 16 subjects enhanced infection with cell-associated HIV-1 regardless of donor serostatus. Milk from two of these subjects contained high levels of multiple pro-inflammatory cytokines

including TNFα, IL-1β, IL-6, IL-8, MIP-1α, MIP-1β, MCP-1 and IP-10, and enhanced cell-associated HIV-1 infection at dilutions as high as 1:500. These findings indicate that breast milk contains innate factors with divergent activity against cell-free and cell-associated HIV-1 *in vitro*. Enhancement of cell-associated HIV-1 infection by breast milk may be associated with inflammatory conditions in the mother and may contribute to infant infection during breastfeeding.

170.   **Lyuu T. Prevalence of target organ damage among hypertensive patients at muhimbili national hospital dar es salaam, Tanzania. Masters of Medicine (Internal Medicine) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Background: Poor controlled hypertension is associated with development of target organ damage and the assessment of target organ damage is important in the evaluation of all hypertensive patients as it provides important information on the severity of the hypertension, the cardiovascular risk and guide management of individual patient. **Objective**: This study was done to determine prevalence of left ventricular hypertrophy, hypertensive retinopathy, renal insufficiency and stroke among hypertensive patients at Muhimbili national hospital. **Methodology:** This was a cross-sectional hospital based study, carried out for six months, from July, 2011 to December; 2011 at Muhimbili National Hospital. Two hundred and forty hypertensive patients were consecutively recruited into the study. Standardized questionnaires were used to collect socio-demographic characteristics and clinical data of study participants. Target organ damage was assessed by physical examination, ECG, ECHO and estimation of glomerular filtration rate by creatinine clearance. **Results:** Among study participants, 206 (85.8%) patients had at least one of the four hypertensive target organ damage studied (left ventricular hypertrophy, hypertensive retinopathy, renal insufficiency and stroke). The organ most affected was the heart presenting as left ventricular hypertrophy observed in 167 (69.6%) followed by hypertensive retinopathy 136 (56.7%), renal insufficiency 72 (30.0%) and Stroke in 22 (9.2%) patients. **Conclusion:** This study showed a high prevalence of target organ damage among hypertensive patients admitted in medical wards or attending medical outpatient clinic. These findings illustrate the burden of uncontrolled hypertension in our setting. **Recommendation:** Early workup to identify presence of organ damage is recommended in all hypertensive patients.

171.   **Mabula JB, Chalya PL, Mchembe M.D, Jaka H, Giiti G, Rambau P, Masalu N, Kamugisha E, Robert S, Gilyoma JM. Skin cancers among Albinos at a University teaching hospital in Northwestern Tanzania: a retrospective review of 64 cases** *BMC Dermatology*, **(2012); 12 art. no 5.**

Background: Skin cancers are a major risk associated with albinism and are thought to be a major cause of death in African albinos. The challenges associated with the care of these patients are numerous and need to be addressed. The aim of this study was to outline the pattern and treatment outcome of skin cancers among albinos treated at our centre and to highlight challenges associated with the care of these patients and proffer solutions for improved outcome.**Methods:** This was a retrospective study of all albinos with a

histopathological diagnosis of skin cancer seen at Bugando Medical Centre from March 2001 to February 2010. Data collected were analyzed using descriptive statistics.**Results:** A total of 64 patients were studied. The male to female ratio was 1.5:1. The median age of patients was 30 years. The median duration of illness at presentation was 24 months. The commonest reason for late presentation was financial problem. Head and the neck was the most frequent site afflicted in 46(71.8%) patients. Squamous cell carcinoma was the most common histopathological type in 75% of cases. Surgical operation was the commonest modality of treatment in 60 (93.8%) patients. Radiotherapy was given in 24(37.5%) patients. Twenty-seven (42.2%) of the patients did not complete their treatment due to lack of funds. Local recurrence following surgical treatment was recorded in 6 (30.0%) patients. Only thirty-seven (61.7%) patients were available for follow-up at 6-12 months and the remaining patients were lost to follow-up.**Conclusions:** Skin cancers are the most common cancers among albinos in our environment. Albinism and exposure to ultraviolet light appears to be the most important risk factor in the development of these cancers. Late presentation and failure to complete treatment due to financial difficulties and lack of radiotherapy services at our centre are major challenges in the care of these patients. Early institution of preventive measures, early presentation and treatment, and follow-up should be encouraged in this population for better outcome.

172. **Mabula JB, Chalya PL, Mchembe M.D, Kihunrwa A, Massinde A, Chandika AB, Gilyoma, J.M. Bowel perforation secondary to illegally induced abortion: a tertiary hospital experience in Tanzania.***World Journal of Emergency Surgery***, (2012); 7 (1): art. no. 29.**

Background: Bowel perforation though rarely reported is a serious complication of induced abortion, which is often performed illegally by persons without any medical training in developing countries. A sudden increase in the number of patients in our centre in recent years prompted the authors to analyze this problem. The study was conducted to describe our own experiences in the surgical management of these patients.**Methods:** This was a retrospective study involving patients who were jointly managed by the surgical and gynecological teams at Bugando Medical Centre (BMC) for bowel perforation secondary to illegally induced abortion from January 2002 to December 2011. The statistical analysis was performed using SPSS version 17.0.**Results:** A total of 68 patients (representing 4.2% of cases) were enrolled in the study. Their ages ranged from 14 to 45 years with a median age of 21 years. Majority of patients were, secondary school students/leavers (70.6%), unmarried (88.2%), nulliparous (80.9%), unemployed (82.4%) and most of them were dependent member of the family. Previous history of contraceptive use was reported in only 14.7% of cases. The majority of patients (79.4%) had procured the abortion in the 2 nd trimester. Dilatation and curettage (82.4%) was the most common reported method used in procuring abortion. The interval from termination of pregnancy to presentation in hospital ranged from 1 to 14 days (median 6 days). The ileum (51.5%) and sigmoid colon (22.1%) was the most common portions of the bowel affected. Resection and anastomosis with uterine repair was the most common (86.8%) surgical procedure performed. Complication and mortality rates were 47.1% and 10.3% respectively. According to multivariate logistic regression analysis, gestational age at termination of pregnancy, delayed presentation, delayed surgical treatment

and presence of complications were significantly associated with mortality (P<0.001). The overall median length of hospital stay (LOS) was 18 days (1day to 128 days). Patients who developed complications stayed longer in the hospital, and this was statistically significant (P=0.012).**Conclusion:** Bowel perforation following illegally induced abortion is still rampant in our environment and constitutes significantly to high maternal morbidity and mortality. Early recognition of the diagnosis, aggressive resuscitation and early institution of surgical management is of paramount importance if morbidity and mortality associated with bowel perforation are to be avoided.

173.   **Mabula JB, Mchembe M.D, Koy M, Chalya PL , Massaga F, Rambau PF, Masalu N, Jaka H. Gastric cancer at a university teaching hospital in northwestern Tanzania: A retrospective review of 232 cases** *World Journal of Surgical Oncology*, **(2012); 10, art. no. 257 .**

Background: Despite marked decreases in its incidence, particularly in developed countries, gastric cancer is still the second most common tumor worldwide. There is a paucity of information regarding gastric cancer in northwestern Tanzania. This study was undertaken to describe our experience, in our local setting, on the management of gastric cancer, outlining the clinicopathological and treatment outcome of these patients and suggesting ways to improve the treatment outcome.**Methods:** This was a retrospective study of histologically confirmed cases of gastric cancer seen at Bugando Medical Centre between January 2007 and December 2011. Data were retrieved from patients' files and analyzed using SPSS computer software version 17.0.**Results:** A total of 232 gastric cancer patients were enrolled in the study, representing 4.5% of all malignancies. The male to female ratio was 2.9:1. The median age of patients was 52 years. The majority of the patients (92.1%) presented late with advanced gastric cancer (Stages III and IV). Lymph node and distant metastasis at the time of diagnosis was recorded in 31.9% and 29.3% of cases, respectively. The antrum was the most frequent anatomical site (56.5%) involved and gastric adenocarcinoma (95.1%) was the most common histopathological type. Out of 232 patients, 223 (96.1%) patients underwent surgical procedures for gastric cancer of which gastro-jejunostomy was the most frequent performed surgical procedure, accounting for 53.8% of cases. The use of chemotherapy and radiotherapy was documented in 56 (24.1%) and 12 (5.1%) patients, respectively. Postoperative complication and mortality rates were 37.1% and 18.1%, respectively. According to multivariate logistic regression analysis, preoperative comorbidity, histological grade and stage of the tumor, presence of metastases at the time of diagnosis was the main predictors of death (P <0.001). At the end of five years, only 76 (32.8%) patients were available for follow-up and the overall five-year survival rate was 6.9%. Evidence of cancer recurrence was reported in 45 (19.4%) patients. Positive resection margins, stage of the tumor and presence of metastasis at the time of diagnosis were the main predictors of local recurrence (P <0.001).**Conclusions:** Gastric cancer in this region shows a trend towards relative young age at diagnosis and the majority of patients present late with an advanced stage. Lack of awareness of the disease, poor accessibility to health care facilities and lack of screening programs in this region may contribute to advanced disease at the time of diagnosis. There is a need for early detection, adequate treatment and proper follow-up to

improve treatment outcome.

174.   Macfarlane SB, & Kaaya EE. Universities in transition to improve population health: A Tanzanian case study. *Journal of public health policy*, **2012; S3-S12.**
This special issue addresses the role of universities in promoting population health, particularly through the education of health professionals. The papers are set in Tanzania and describe activities that arose from a collaboration between the Muhimbili University of Health and Allied Sciences (MUHAS) in the United Republic of Tanzania and the University of California San Francisco (UCSF) in the United States, through the Academic Learning Project (ALP) supported by the Bill & Melinda Gates Foundation.The hypothesis underlying our work is that academic institutions can work with health systems to provide health professionals with adequate pre-service and continuing education to prevent and reduce the disease burden of populations; and that collaboration between academic institutions can provide opportunities to develop and share best practices, for example, in curriculum development, teaching and assessment methods, and faculty development.The emphasis in these papers is on the training of health professionals because their shortage in Tanzania is disproportionately high compared with other types of health workers. Traditionally, Tanzania has relied on mid-level health workers trained by the Ministry of Health and Social Welfare – to the extent that Tanzania is among African countries with the highest proportion of such workers.Thus, in addition to an extreme shortage of all types of health workers, Tanzania urgently needs qualified supervisors for all elements of the health system (community level protection and prevention as well as medical care) and specialists to whom patients can be referred by primary care clinicians.Many Tanzanians living in rural areas have limited access to and expectations of adequate care with the result that morbidity and mortality rates are high. For example, in Tanzania, for every 1000 births approximately five women die of pregnancy-related conditions and 26 children die before reaching 1 month of age; malaria accounts every year for the deaths of 60 000 people of whom 80 per cent are under 5 years of age; and 1.4 million people live with HIV and about 40 per cent of those who need anti-retroviral treatment receive it.The health system needs: qualified public health specialists to plan and implement community-wide programs to prevent malaria, malnutrition, and tuberculosis; medical doctors to run hospitals that are able to prevent mothers from suffering postpartum hemorrhage, babies from dying of birth asphyxia, children dying from asthma, and patients experiencing sepsis after surgery; and nurses to provide ante-natal care to pregnant women who may deliver at home, and to make timely and appropriate referrals of patients from dispensaries to hospitals.To fulfill its vision of 'access to basic, equitable affordable and quality health services for all', the Government of Tanzania is calling on universities to rapidly scale up their output of health professionals – doctors, nurses, dentists, pharmacists, public health workers, and others.Building on its long experience as a college of the University of Dar es Salaam, MUHAS gained its charter in 2007 with a mission to prepare the best health professionals to run the country's health system. We describe MUHAS's early efforts to introduce educational innovation to meet national development targets and to fulfill its mission.By focusing on one institution in one country, the papers in this supplement demonstrate the challenges involved in massive university transitions to better contribute to improving health. The lessons learned in this collaboration will interest staff of universities and ministries in other countries challenged to improve health and to provide better care for all of their people.

175.   Maembe L. Management of preeclampsia/eclampsia in dar es salaam public health facilities: availability of supplies and knowledge of healthcare workers. Master of Medicine (Obstetrics and Gynaecology) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: Pre-eclampsia and eclampsia are the hypertensive disorders of pregnancy that

affect 5-10% of all pregnancies. Eclampsia is associated with very high case fatality rate and a major contributor to maternal deaths. Early screening using simple tools and proper treatment of pre-eclampsia and eclampsia are important in reducing the maternal and neonatal morbidity and mortality. **Objective**: To assess the availability of supplies and knowledge of healthcare workers in managing patients with preeclampsia/eclampsia in Dar-es-salaam public health facilities. **Methodology**: This was a descriptive cross-sectional study involving 30 public health facilities in Dar es Salaam that offer reproductive and child services. Checklist was used to assess availability of instruments and drugs in the health facilities and, a structured questionnaire was used to assess knowledge of the healthcare workers. To assess knowledge of the healthcare workers, a score in the questionnaire of 8 - 17 marks was for adequate knowledge and a score less than 8 were for inadequate knowledge. **Results**: All the public health facilities had working blood pressure machines and stethoscopes for blood pressure screening, less than half had dipsticks for detection of protein in urine. Availability of drugs for treating preeclampsia and eclampsia in the health facilities was low, less than half of had magnesium sulphate for controlling and prevention of seizures. Availability of antihypertensives was generally low only 40% of health facilities had methyldopa, 37% nifedipine and 17% hydrallazine. Availability of antihypertensives was lower in dispensaries compared to higher level facilities. Guidelines for managing patients with preeclampsia/eclampsia were available in 70% of all the health facilities. Primigravidity was the most mentioned risk factor. Overall more than half of the healthcare workers had adequate knowledge in screening for risk factors, symptoms of severe preeclampsia and offer appropriate treatment. **Conclusion**: The study has revealed that public health facilities lack essential supplies for screening and managing patients with preeclampsia and eclampsia. Availability of essential drugs for patients with preeclampsia/eclampsia is low in health facilities especially in the lower level of care. Majority of the healthcare workers have adequate knowledge to manage patients with preeclampsia and eclampsia.

176.   Magadula JJ, Mulholland DA, & Crouch NR. Journal of Advanced Scientific Research. *Journal of Advanced Scientific Research***. 2012; 3(4).**

Phytochemical investigations of the root bark of Antidesma venosum (Euphorbiaceae) afforded presqualene alcohol (1), presqualene acetate (2) together with friedelin; epifriedelanol, betulinic acid, toddaculin, α-tocopherol and pheophytin A. This is the first report of compound 2 to be isolated from the natural source. Furthermore, presqualene acetate (2) can be obtained in large amounts from this source, making it a good source of material for biosynthetic studies

177.   Magadula JJ, Mulholland DA, & Crouch NR. The Isolation of Important Biosynthetic Intermediate; Presqualene Alcohol and Its Acetate Derivative from *Antidesma Venosum. Journal of Advanced Scientific Research***.2012;** *3***(4):***32-35*

Phytochemical investigations of the root bark of *Antidesma venosum* (Euphorbiaceae) afforded presqualene alcohol (**1**), presqualene acetate (**2**) together with friedelin; *epi*friedelanol, betulinic acid, toddaculin, α-tocopherol and pheophytin A. This is the first report of compound **2** to be isolated from the natural source. Furthermore, presqualene

acetate (**2**) can be obtained in large amounts from this source, making it a good source of material for biosynthetic studies.

178. **Magadula JJ, Otieno JN, Nondo RS, Kirimuhuzya C, Kadukuli E, & Orodho JA. Anti-Mycobacterial and Toxicity Activities of Some Priority Medicinal Plants from Lake Victoria Basin, Tanzania. 2012.**

Aims: This study has evaluated ethanol extracts from five medicinal plants selected through ethnobotanical study from Lake Victoria basin, Tanzania for their in vitro antimycobacterial activity against two Mycobacterium species and cytotoxicity against brine shrimp larvae. Study Design: Laboratory experimental tests. Place and Duration of Study: Institute of Traditional Medicine, Muhimbili University of Health and Allied Sciences, P.O. Box 65001, Dar es Salaam, Tanzania, between July 2010 and July 2011. Methodology: Five medicinal plants were selected from the priority list obtained from Lake Victoria basin, Tanzanian side. Collection, processing and drying of plant samples were done in the field with the assistance of a botanist while extraction and concentration of plant samples to obtain crude extracts were done in the laboratory following standard procedures. The plants included in this study are Antidesma membranaceum, Crassocephalum manii, Entada abyssinica, Croton dichogamus and Rubia cordifolia. The two fold microdilution **method** was used to determine the MIC values of extracts againsttwo Mycobacterium marker strains (Mycobacterium indicus pranii and Mycobacterium madagascariense). The cytotoxicity of plant extract was evaluated against brine shrimp larvae. Furthermore, the extracts were screened phytochemicaly to establish the group of compounds responsible for the activity. Results: Among the tested extracts, the stem bark of A. membranaceum and C. manii showed moderate to mild activity against M. indicus pranii (MIC = 0.3125 mg/ml) and M. madagascariense (MIC = 0.625 mg/ml) respectively. Furthermore, A. membranaceum exhibited significant toxicity activity with LC50 value of 36.134 μg/ml against brine shrimp larvae. Other plants were moderately active when tested in vitro against the above organisms. Phytochemical screening of extracts indicated the presence of different classes of compounds. **Conclusion:** This study has shown the potential of the priority medicinal plant extracts to be the source of possible lead compounds and anti-TB drug candidates needed for the management of Tuberculosis. Isolation of active principles from active fractions will be further undertaken.

179. **Magadula JJ, Otieno JN, Nondo RS, Kirimuhuzya C, Kadukuli E, Orodho JA, & Okemo P. Anti-Mycobacterial and Toxicity Activities of Some Priority Medicinal Plants from Lake Victoria Basin, Tanzania.** *European Journal of Medicinal Plants*. **2012;*2*(2):125-131.**

Aims: This study has evaluated ethanol extracts from five medicinal plants selected through ethnobotanical study from Lake Victoria basin, Tanzania for their in vitro antimycobacterial activity against two Mycobacterium species and cytotoxicity against brine shrimp larvae. Study Design: Laboratory experimental tests. Place and Duration of Study: Institute of Traditional Medicine, Muhimbili University of Health and Allied Sciences, P.O. Box 65001, Dar es Salaam, Tanzania, between July 2010 and July 2011. **Methodology**: Five medicinal

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180. **Magadula JJ. Bioactive benzophenones from stem bark and fruit hulls of Garcinia semseii Verdc.2012.**

In this study, the ethanol extracts of the stem bark and fruit hulls of *Garcinia semseii* were investigated for their biological potentials in two assays, namely antioxidant and cytotoxic activities. The crude extracts showed significant activities which necessitated the isolation of active ingredients. Hence, column chromatographic analyses and structural characterization revealed the presence of three semsinones A-C (**1-3**) from the stem bark and two guttiferones A (**4**) and K (**5**) from the fruit hulls. All compounds indicated remarkable activity against four human cancer cell lines with CC_{50} values ranging from 1.97-16.11 µg/ml while in the antioxidant assay, the guttiferones A and K displayed significant antioxidant activities in DPPH, ORAC and AGEs assays. The promising activities observed may further suggest a possibility of manipulating these compounds for structural activity relationship or structural synthesis may be considered for the aim of increasing the bio-efficacy of isolated compounds.

181. **Magambo M. Ct scan findings in patients presenting with headache at the radiology department, muhimbili national hospital. Master of Medicine (Radiology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background It is estimated that more than one hundred thousand people suffer from headache all over the world. Headache is one of the main sources of discomfort. The IHS classifies headache into primary (without any organic cause) or secondary (with an established cause an established cause). Primary headache includes migraine, cluster. With these types of headaches no imaging modality has proved to be necessary. With current

literature, the migraine headache can be investigated with MRI and gives positive results. For secondary type of headache hemorrhage has been established as one of the factors. This is attributed to hypertension which is on the rise in Tanzania. Other factors include brain atrophy and tumors which can be primary or secondary. **Objectives** To evaluate the causes of secondary headache by the use of CT scan at MNH in 2011. This will help to determine the most prevalent cause of headache in patients. Also to determine the most prevalent cause of headache in general and the pattern of presentation on the imaging modality. **Methodology** This was an observational study whereby a sample of 85 subjects were taken. Characteristic of the type of headache was noted as documented in the request form. The underlying conditions were outlined. Evaluation for the cause of headache was done using a helical PHILLI Collected data was analyzed using SPSS programme version 15. For the continuous data mean and standard deviation were considered while for the categorical was by proportion and percentage. The association between headache and the risk factors will be established using chi square and linear regression to establish the statistical significance. **Results:**The study included 85 patients, with more females than males. The study showed that the prevalence of positive findings among patients that presented with headache was 31.9%. The most prevalent pathology found was sinusitis which was located in the maxillary sinus. Among the CT scan findings and the suspected diagnosis, brain metastasis showed to have strong correlation. Both sinusitis, brain atrophy and brain infection had positive correlation and brain infarction had negative correlation between the clinical deduced diagnosis and the CT scan findings. Some study subjects had pre existing morbidity and the most frequent one was hypertension. No significant difference was noted among patients who had hypertension and those who had not as far as the CT SCAN findings (P 4.254). There were neurological complaints apart from headache and the commonest one documented was loss of consciousness. This however did not have an effect on the CT scan findings whether normal or abnormal (P 0.016). **Conclusion** CT scan has a role in determining the cause of headache. Primary headache is more common than secondary headache. More emphasis should be put to women presenting with headache. The commonest cause of secondary headache is maxillary sinusitis.PS CT 8 planner scan machine (Phillips, Eindhelsen, Netherlands). Collected data was analyzed using SPSS programme version 15. For the continuous data mean and standard deviation were considered while for the categorical was by proportion and percentage. The association between headache and the risk factors will be established using chi square and linear regression to establish the statistical significance. **Results** The study included 85 patients, with more females than males. The study showed that the prevalence of positive findings among patients that presented with headache was 31.9%. The most prevalent pathology found was sinusitis which was located in the maxillary sinus. Among the CT scan findings and the suspected diagnosis, brain metastasis showed to have strong correlation. Both sinusitis, brain atrophy and brain infection had positive correlation and brain infarction had negative correlation between the clinical deduced diagnosis and the CT scan findings. Some study subjects had pre existing morbidity and the most frequent one was hypertension. No significant difference was noted among patients who had hypertension and those who had not as far as the CT SCAN findings (P 4.254). There were neurological complaints apart from headache and the commonest one documented was loss of consciousness. This however did not have an effect on the CT scan findings whether normal or abnormal (P 0.016).

Conclusion CT scan has a role in determining the cause of headache. Primary headache is more common than secondary headache. More emphasis should be put to women presenting with headache. The commonest cause of secondary headache is maxillary sinusitis.

182. **Mageda K, Leyna GH, & Mmbaga EJ.High Initial HIV/AIDS-related mortality and-its predictors among patients on antiretroviral therapy in the Kagera Region of Tanzania: a five-year retrospective cohort study.** *AIDS research and treatment*, *2012*.

We examined mortality rates and its predictors from a five years retrospective cohort data of HIV/AIDs patients attending care and treatment clinic in Biharamulo Tanzania. Cox regression analysis was used to identify predictors of mortality. Of the 546 patient records retrieved, the mean age was 37 years with median CD4 count of 156 cells. The mortality rate was 4.32/100 person years at risk with males having three times higher mortality compared to females. Starting Antiretroviral treatment with advanced disease state, body weight below 45 kegs, WHO stage 4 disease, and CD4 cells below 50 were main predictors of mortality. Promoting early voluntary counselling and testing should be given a priority to facilitate timely start of treatment.

183. **Magesa D. Perceived barriers to access available health services among men who have sex with men in dar es salaam 2012. Master of Medicine (Community Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Men who have sex with men (MSM) continue to be highly affected with the HIV infection worldwide. Studies have shown that organization of health care system and how the MSM perceive it, play a major role in granting or denying them access to health care services. Little is known in Tanzania with regards to barriers of MSM accessing health services in Tanzania. The study was geared towards determining the proportion of MSM who accessed health care and disclose their sexual orientations to health care workers (HCW). It also intended to find out the anticipated barriers from HCW's if they were to disclose their sexual orientations to them and look into the types of social networks used when facing various challenges. The study employed both quantitative and qualitative methods. Participants were enrolled in the study Respondent Driven Sampling .Quantitative data was entered and analyzed using the Statistical Package for the Social Sciences v.20. Qualitative data was collected using in-depth interviews read and interpreted to identify themes and create categories. These were manually analyzed and interpreted according to the study objectives. Majority of MSM (87.7%) in this study accessed health care services when sick, only 3.4% did nothing because they had no money to pay for the services. Only a third of them had ever disclosed their sexual orientations to HCW's, due to perceived lack of confidentiality, fear of stigma and discrimination, shame and mistreatment at the health facilities and fear of HCW's reaction after disclosure of their sexual orientations. MSM need to be empowered to overcome their perceived fears on HCW's and health facilities. Efforts should be put in breaking the cycle of wrong information and perceptions MSM have on health care worker's knowledge on dealing with same sex practices' health related problems.

184. **Makani J & Marche S. Classifying organizations by knowledge intensity–**

necessary next-steps. *Journal of Knowledge Management*, 2012; *16*(2): 243-266.

Purpose : This study aims to empirically explore the key elements for classifying and differentiating knowledge-intensive organizations (KIOs) from other traditional organizations. **Design/methodology/approach :**The study's conceptual framework is based on the prevailing propositions from the literature on KIOs and is explored using a survey of knowledge management (KM) professionals, a purposely selected community of practice (CoP). **Findings :**The results suggest that organizations can generally be divided into two groups – KIOs and non-KIOs, and there appear to be some clear factors that differentiate KIOs from non-KIOs according to the CoP. **Research limitations/implications:** This study lays a foundation for the systematic development and evaluation of KIOs and their KM practices. The results from this study can stimulate issue formulation and hypothesis generation for investigation by KM researchers and academics. The study focused on a few types of organizations drawn from the literature which may limit the generalizability of the results. However, restricting the study to the core organizations identified in the literature provided the authors with leverage for an in-depth empirical exploration of these organizations' characteristics. **Practical implications:** To a KM practitioner this study aids in delineating the different elements to keep in mind when designing or evaluating KM practices in KIOs. **Originality/value:** This paper is among the early works to empirically explore KIOs. It advances a framework of how to recognize the knowledge-intense factors defining KIOs, thereby providing the required foundation for analyzing KM practices in KIOs. Also by identifying the core dimensions defining knowledge intensity, the study underscores the importance of the relations between workers, the community (organization) of which they are members, and the conceptions the workers have of their activities as presented in the theory of organizations as activity systems. While the importance of knowledge has often been demonstrated within work groups or for particular organizational processes, this study has demonstrated a useful foundation for analyzing an organization as a whole.

185.   **Makubi A, Soka D, & Makani J. Moyamoya Disease, a Rare Cause of Recurrent Strokes in an African Sickle Cell Child: Does hydroxyurea have a Role in this Context?.** *International Journal of Child Health and Nutrition*, 2012; *1*(1): 82-85.
Background: Neurological complications are a significant cause of morbidity and mortality in sickle cell patients with reported incidence of stroke in Africa as high as 1·3/100 patient per year(1, 2) . There is an association between sickle cell disease (as well as other hemoglobinopathies) and Moyamoya disease(3). Data on the occurrence of this condition in African sickle patient are scare. Likewise the role of hydroxyurea among patients with both sickle cell anemia and Moyamoya disease in preventing stroke has not yet been studied in Africa.**Case presentation**: In the present report, we describe an African child who had a recurrent stroke. She was later diagnosed as having Moyamoya disease while already receiving hydroxyurea.**Conclusion:** Moyamoya disease is a rare condition associated with recurrent stroke in African sickle children. The role of hydroxyurea in this context is still unclear.

186.   **Makubi AN, Meda C, Magesa A, Minja P, Mlalasi J, Salum Z, Kweka RE, Rwehabura J , Quaresh , Magesa PM , Robert D, Makani J & Kaaya E. Audit of**

clinical-laboratory practices in haematology and blood transfusion at Muhimbili National Hospital in Tanzania. *Tanzania Journal of Health Research*, 2012; *14*(4).

In Tanzania, there is paucity of data for monitoring laboratory medicine including haematology. This therefore calls for audits of practices in haematology and blood transfusion in order to provide appraise practice and devise strategies that would result in improved quality of health care services. This descriptive cross-sectional study which audited laboratory practice in haematology and blood transfusion at Muhimbili National Hospital (MNH) aimed at assessing the pre-analytical stage of laboratory investigations including laboratory request forms and handling specimen processing in the haematology laboratory and assessing the chain from donor selection, blood component processing to administration of blood during transfusion. A national standard checklist was used to audit the laboratory request forms (LRF), phlebotomists' practices on handling and assessing the from donor selection to administration of blood during transfusion. Both interview and observations were used. A total of 195 LRF were audited and 100% of had incomplete information such as patients' identification numbers, time sample ordered, reason for request, summary of clinical assessment and differential diagnoses. The labelling of specimens was poorly done by phlebotomists/clinicians in 82% of the specimens. Also 65% (132/202) of the blood samples delivered in the haematology laboratory did not contain the recommended volume of blood. There was no laboratory request form specific for ordering blood and there were no guidelines for indication of blood transfusion in the wards/clinics. The blood transfusion laboratory section was not participating in external quality assessment and the hospital transfusion committee was not in operation. It is recommended that a referral hospital like MNH should have a transfusion committee to provide an active forum to facilitate communication between those involved with transfusion, monitor, coordinate and audit blood transfusion practices as per national guidelines.

187. **Makubi AN, Meda C, Magesa A, Minja P, Mlalasi J, Salum Z, Kweka RE,Rwehabura J,Quaresh A, Magesa PM, Robert D, Makani J, & Kaaya E. Audit of clinical-laboratory practices in haematology and blood transfusion at Muhimbili National Hospital in Tanzania.** *Tanzania Journal of Health Research*. 2012; *14*(4).

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189.   **Makubi AN, Mugusi F, Magesa PM, & Roberts D. Risk factors for anaemia among HIV infected children attending care and treatment clinic at Muhimbili National Hospital in Dar es Salaam, Tanzania.** *Tanzania Journal of Health Research.***2012;** *14***(1).**
There is paucity of data describing the risk factors for anaemia among HIV infected children in Tanzania. This cross sectional study was carried out to determine the contributing factors for anaemia among HIV-infected children attending Muhimbili National Hospital in Dar es

Salaam. Both univariate and multivariate logistic regression analyses were performed to identify possible factors associated with anaemia in HIV-infected children. A total of 75 (44%) patients among 167 recruited HIV-infected children aged 6 months to 59 months of were found to be anaemic (Hg<11g/dl). Multivariate logistic regression demonstrated that not being on HAART (OR 3.40, 95%CI (1.20-9.60), having CD4% <25% (OR 2.30, 95%CI (1.20-34.60), having a history of tuberculosis (TB) (OR 3.23, 95%CI (1.10-9.70) and having hookworm infestation (OR 5.97, 95%CI (1.92-18.4) were independent risk factors for anaemia among HIV infected children. The analyses also showed that being HIV positive for ≥ 2.5 years resulted into a low risk of severe anaemia compared to being HIV positive for < 2.5 years. Taking multivitamins (OR 0.07, 95%, CI (0.020-0.30) and antihelminthics (OR 0.27, 95%CI (0.10-0.74) were also protective against anaemia in children. Similar factors (with exception of using antihelmintics) were associated with severe anaemia. In conclusion the factors associated with anaemia in HIV infected children were multifactorial in nature. Efforts to correct anaemia in HIV infected children should include use of HAART and treatment of infections such as TB and hookworms.

190. **Makuru M. Assessiment of vaccines distribution system in public healthcare facilities in coast region, Tanzania. Master of Science (Pharmaceutical Management) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background: Extended Programme on Immunization performance is among the four main indicators selected for general budget support to the health sector. The declining trend in performance of the immunization program is a major concern, routine immunization coverage in Tanzania declined from 94% in 2004 to 85% in 2009(MOHSW, EPI REVIEW 2010) Vaccination is one method that has been proven effective in preventing the transmission of infectious diseases. However to be effective a number of elements in a vaccination program need to be implemented properly, including cold chain management, vaccine management, logistic management and waste management. Failure to properly implement these can reduce the level of protection that is expected from a vaccination program. **Objectives** The study examined current distribution system of vaccines from second level which is Regional stores, third level which is District stores to fourth level which is health facility and storage practices. **Methodology** It was a cross-sectional survey, staff responsible for vaccine distribution system and storage were interviewed about their knowledge and practices of vaccine distribution, handling and storage. Data collection started in April to 16th June 2012. Data was from 40 selected healthcare facilities and 5 warehouses in Coast region based on geographic representation. Vaccine storage conditions were also assessed and determined at different levels. Availability of 6 tracer vaccines for the past 10 months was assessed and this aided in assessing inventory management and stock control of vaccines at the health facilities**. Results** Availability of 6 tracer vaccines during the time of survey was high at regional vaccine store (100%), followed by district vaccine stores (93.3%) and low at healthcare facilities (82%). Stocks out duration were more at healthcare facilities level (72 days) than district vaccine stores (33 days). Most of the parameters of storage conditions were not met by the XIII facilities. Knowledge level of healthcare givers was inadequate. The study reveals that all personnel involved in handling and storage of vaccines were non pharmaceutical personnel. **Conclusions & recommendations:** Managing effective distribution system at public health facilities is associated with many challenges/problems including inadequate vehicles for distribution especially in lower level, poor storage

conditions, unreliable electricity and lack/delay of gas, no involvement of pharmaceutical personnel in program, no quantification at low facility level and lack of on job training. It is recommended that MOHSW & PMORALG should strengthen distribution system. MOHSW/EPI needs to involve pharmaceutical personnel in the program.

191.   **Manangwa S. Prevalence of malaria infection among school children following wide scaleup of malaria interventions in kisarawe district, Tanzania. Masters of Science (Tropical Diseases Control) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: A study among primary school children in Kisarawe district by Otito in 1994 showed that the prevalence of malaria parasitemia and anemia was 24.3% and was 86.1% respectively. The use of Insecticides Treated Nets (ITNs) and Artemisinin-based Combination Therapies (ACTs) has the potential of interrupting malaria transmission thus changing the epidemiology of malaria in endemic areas such as Kisarawe. Following scaling up of these interventions, it is not known how much they have changed the epidemiology of malaria in the Kisarawe district, in particular among primary school children. **Objective:** This study aimed to determine the malaria parasite rate and hemoglobin level among primary school children in Kisarawe district after wide scale use of ITNs and ACTs. **Methodology:** A descriptive cross sectional study of 300 school children was carried out in Kisarawe district, a holoendemic area for malaria. A random cluster sampling and simple random sampling methods were used to obtain schools and participants. Finger prick blood samples were collected for malaria parasite detection and hemoglobin level. ITNs and ACTs use were also assessed. The main outcome was proportion of school-aged children with asymptomatic malaria parasite infection and anemia as well as ITNs and ACTs use. **Results**: A total of 300 pupils in standard four to seven with mean age 12.4 years, range 8 – 17 years participated in the survey in both steps. The prevalence of asymptomatic malaria was very low, only 9 (3.0%) [95% CI (1.38, 5.20)] had malaria parasites and anemia was 10.3% [95% CI (7.1, 14.0)]. The overall use of ITNs is 83.7% [95% CI (79.0, 87.6)] but 75.9% [95% CI (70.3, 81.2)] were reported to use ITNs last night and the proportion of ACTs use for treatment of malaria was 86% [95% CI (81.6, 89.7)]. There was no association between anemia and history of malaria, use of ITNs, use of ACTs, age groups and sex. **Conclusion:** There is a significant decline in asymptomatic malaria from 24.3% in 1994 to 3% in 2012 which is the evidence of wide scaled up of ITNs and ACTs use as intervention of malaria. Decline in malaria could have also reduced the prevalence of anemia since it is the one among major cause of anemia. More effort on scaling up ITNs and ACTs intervention and sustainability are needed for elimination of the disease. However further studies with large sample size are needed to explore the prevalence of asymptomatic malaria as well as possible causes of existing anemia.

192.   **Mandal T. Role of imaging in patients with congenital heart diseases, attending pediatric cardiac clinic at Muhimbili National Hospital. Master of (Radiology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: Congenital heart disease (CHD) afflicts a large number of children every year worldwide. Anderson J.R. et al estimates the incidence of CHD to be approximately 8: 1000 live births [1]. The incidence of CHD in Tanzania was found to be 7: 1000 live births [2]. Chest imaging is an important modality in the diagnosis of congenital heart diseases along

with clinical presentations. Certain imaging investigations such as plain chest X ray (CXR) and echocardiography (ECHO) are used to diagnose as well as to differentiate the type of CHD in our set up, although currently cardiac magnetic resonance imaging (MRI) is one of the most important imaging modality used to diagnose and classify CHD. **objective:** Role of imaging in congenital heart disease patients who attended Cardiac clinic in Pediatric department at MNH from June to December 2011.**methods:** This was a hospital based descriptive cross sectional study whereby a convenient sample of 150 patients were obtained from a list of all CHD patients who attended Cardiac clinic in Pediatrics department at MNH, Dar es salaam, Tanzania from June to December 2011. All patients were investigated by using CXR and ECHO. The collected data was analyzed using SPSS version 15. Statistical level of significance was set at $p < 0.05$. **results:** Male: female ratio of the study population was 1.2: 1, no association was found between sex and various types of CHDs. A total of seven different types of CHDs were found as well as others who presented with multiple defects, among these VSD was seen in 34.7 % of patients. Association between maternal alcohol consumption with VSD was found. The sensitivity of CXR for cardiac enlargement was 53%. 43.3% of clinical diagnosis was similar to the final Radiological diagnosis. **conclusion:** VSD being the commonest type of CHD in this study, left sided cardiac enlargement was the commonest imaging finding. Sensitivity of CXR is higher to pick aortic and pulmonary artery enlargement compared to chamber enlargement. Male and female are almost equally affected by CHD. For diagnosis of CHD, clinical findings should be combined with CXR and echocardiography findings.. **recommendation:** Digitalization of x ray unit. To conduct similar studies taking larger sample size and including peripheral hospitals. Regular quality control of the imaging unit. Along with CXR and echocardiography more advanced imaging modalities like cardiac MRI should be used to diagnose the complex CHDs.

193. **Mann PJ, Munseri P, Kaluwa B, Missanga M, Lwakatare J, Hoelscher M, & Kroidl A, High prevalence of ECG variation and abnormalities in young and healthy TaMoVac 01 HIV vaccine trial volunteers from Tanzania.** *Retrovirology.***2012;** *9***(Suppl 2): P114**.

Background: Vaccinia immunizations have caused peri-/myocarditis. As a result, volunteers receiving Modified Vaccinia Ankara(MVA) are monitored with ECGs. Early Repolarization Syndrome(ERS) has been reported in 1-2% and Left Ventricular Hypertrophy(LVH) in <10% of young, healthy populations across different ethnicities. These changes have been described as normal ECG variations, and according to early reviews, are more frequent in African and Asian populations. A prevalence of 90% has been reported for ST-Elevation in young males in several studies from industrialized and developing countries. **Methods :**ECG was performed in healthy HIV negative volunteers during screening for the Phase II ”TaMoVac01” HIV Vaccine Trial in Dar es Salaam and Mbeya, Tanzania. ECG variations that could potentially interfere with the later interpretation of myocarditis/pericarditis were confirmed by a panel of international cardiologists and led to exclusion from the study. These were ST-segment elevation, T-wave abnormalities, signs of LVH and ERS.**Results:**263 Volunteers (mean age 24.4 years, 63.5% males) had a baseline ECG evaluation performed. 19% of ECGs showed ERS, 20.3% showed LVH and 77% showed ST-elevation. 22.1% of volunteers were screened out due to ECG findings, none of whom had a history of cardiac disease, although one participant had a systolic murmur which led to echocardiogram.

Dilation of the left ventricle was diagnosed. **Conclusion:** Although the prevalence of ST elevation was no higher than expected in young males, ERS and LVH was far more common than the literature suggested in this cohort of clinically healthy, young Tanzanians. Exclusions were due to the presence of more than one abnormality. None had symptoms that were clinically relevant, although a significant cardiac finding was revealed through echocardiogram in one participant. The clinical benefit of ECG screening in the context of vaccine studies in healthy volunteers remains to be determined, but it is clear from this study that it added considerably to the number of screenouts.

194.   **Mann PJ, Munseri P, Kaluwa B, Missanga M, Lwakatare J, Hoelscher M, Bakari M, Janabi M, Maboko L, Sandström E & Kroidl A. High prevalence of ECG variations and abnormalities in young and healthy TaMoVac 01 HIV vaccine trial volunteers from Tanzania.** *Retrovirology*.**2012;***9*(**2**)**:P114.**

Background Vaccinia immunizations have caused peri-/myocarditis. As a result, volunteers receiving Modified Vaccinia Ankara (MVA) are monitored with ECGs. Early Repolarization Syndrome(ERS) has been reported in 1-2% and Left Ventricular Hypertrophy(LVH) in <10% of young, healthy populations across different ethnicities. These changes have been described as normal ECG variations, and according to early reviews, are more frequent in African and Asian populations. A prevalence of 90% has been reported for ST-Elevation in young males in several studies from industrialized and developing countries. **Methods:** ECG was performed in healthy HIV negative volunteers during screening for the Phase II "TaMoVac01" HIV Vaccine Trial in DarEsSalaam and Mbeya, Tanzania. ECG variations that could potentially interfere with the later interpretation of myocarditis/pericarditis were confirmed by a panel of international cardiologists and led to exclusion from the study. These were ST-segment elevation, T-wave abnormalities, signs of LVH and ERS. **Results:** 263 Volunteers (mean age 24.4 years, 63.5% males) had a baseline ECG evaluation performed. 19% of ECGs showed ERS, 20.3% showed LVH and 77% showed ST-elevation. 22.1% of volunteers were screened out due to ECG findings, none of whom had a history of cardiac disease, although one participant had a systolic murmur which led to echocardiogram. Dilation of the left ventricle was diagnosed. **Conclusion:** Although the prevalence of ST elevation was no higher than expected in young males, ERS and LVH was far more common than the literature suggested in this cohort of clinically healthy, young Tanzanians. Exclusions were due to the presence of more than one abnormality. None ha symptoms that were clinically relevant, although a significant cardiac finding was revealed through echocardiogram in one participant. The clinical benefit of ECG screening in the context of vaccine studies in healthy volunteers remains to be determined, but it is clear from this study that it added considerably to the number of screenouts.

195.   **Manyahi J.** B**acteriological spectrum of post operative wound infections and their antibiogram in a tertiary hospital, dar es salaam, Tanzania. Master of Medicine (Microbiology and Immunology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.
Background: Surgical site infection (SSI) is among the most common problem for patients who undergo operative procedures. It remains a common and widespread problem

contributing to morbidity and mortality; partly attributed to increase in infections due to antimicrobial resistant bacterial pathogens. In Tanzania there has been limited data regarding the magnitude of SSIs due to antimicrobial resistant pathogens as well as the resistant pattern to antibiotics commonly used in the treatment of these infections. **Objective**: To determine the spectrum of bacteria isolates from postoperative wound infections and their antimicrobial susceptibility patterns at Muhimbili National Hospital (MNH) and Muhimbili Orthopedic Institute (MOI). **Methodology:** This was a descriptive cross sectional study which was conducted among patients with post operative wound infections in the general surgery and obstetrics/gynecology wards at MNH and Orthopedics and Trauma unit at MOI. The study participants were consecutively recruited in general surgery, obstetrics/gynecology wards at MNH and orthopedics and trauma wards at MOI from September 2011 to February, 2012. Structured questionnaires were used to collect social demographic characteristics, clinical history and operative information from patients and their case notes. Culturing for colony characteristics followed by Gram stain was used for provisional identity of pathogenic bacteria. Further identification was done by a set of biochemical tests, API 20E, and VITEK. Antimicrobial susceptibility pattern of isolated bacterial pathogens was determined by Kirby Bauer disc diffusion method. **Results:** *Pseudomonas aeruginosa* was the most frequently isolated pathogenic organism from post operative wound infections. Most of the Gram negative bacteria isolated were multiply resistant to antimicrobial agents tested; but all were sensitive to carbapenems. Eighty eight percent (88%) of enteric gram negative rods were multi-drug resistance. ESBLs production was detected in 92.3% of *Escherichia coli* and 69% of *Klebsiella pneumoniae*. Forty four percent (44%) of the 18 *S. aureus* isolates obtained were MRSA. **Conclusion and recommendation:** *Pseudomonas aeruginosa* was the most common isolate from SSI. Most of gram negative isolates were multiply resistant to commonly prescribed antimicrobial agents. Also there was an increase in ESBLs producing Enterobacteriaceae as well as MRSA strains. Routine culture should be performed whenever SSI is suspected and choice of antibiotics for treatment of SSIs should be guided by routine antimicrobial sensitivity (including MRSA and ESBL screening) testing. Ciprofloxacin should replace first line antibiotics for empirical treatment of SSIs; and strict guidelines for antibiotics prescriptions in treatment of SSIs should be established.

196.   **Maro G. Assessment of health facility compliance with standards and perception of adolescents to quality of sexual and reproductive health services in kilindi, tanga Tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Promoting healthy practices during adolescence and taking steps for better protection of young people from health risks is critical to the future of countries' health. Young people aged 15-24years account for 60% of the new HIV infection in sub Sahara Africa. The risk of dying from pregnancy-related causes is much higher for adolescents than for older women. Quality of Sexual and Reproductive Health (SRH) services is poor in most areas in rural settings leading to low utilization of services. The study aim at assessing health facility compliance with standards and perception of adolescents to quality of sexual and reproductive health services in Kilindi, Tanga Tanzania. **Objectives** Main Objective of this study was to assess health facilities compliance with standards and perception of adolescents

to quality of sexual and reproductive health services in Kilindi, Tanga Tanzania with Specific objectives of determining quality of SRH service in relation to MoHSW standard guidelines in Kilindi District, to assess adolescents perception towards quality of SRH services offered in Health facilities in Kilindi District and to assess attitudes of health workers towards adolescents SRH services in Kilindi District **Materials and Methods** A multi-stage sampling strategy was employed to select the study sample in this cross sectional community and facility based study. Three hundred (300) young people were interviewed while 14-health facilities were assessed. Data were generated using structured interviews and standard serviqual questionnaire and analyzed using stata version 12 statistical packages. Serviqual questionnaires were analyzed using standard serviqual analysis stages where the five quality dimensions of tangibility of service, assurance, empathy, responsiveness and reliability gape scores were assessed. **Results** Quality of SRH services was perceived low with average gap score of 4.57 among all five-quality dimensions. Health facilities also showed very low scores of 2. of functioning fully following the seven standards for provision of Youth friendly services. Knowledge of SRH was high among young people who had higher education (p <0.001). Young people with advanced age also had higher knowledge of STIs. Health care providers had no enough training on youth friendly SRH services. **Conclusion and recommendations** Quality of SRH services offered by existing health facilities to young people in Kilindi is very low regardless of awareness of young people on key SRH services available at health facilities. It is important for the program and policy makers to ensure standards set for services reflect ability of facilities to offer them 57 out of 4 in terms

197.   **Marum E, Taegtmeyer M , Parekh B, Mugo N, Lembariti S, Phiri M, Moore J, Cheng AS."What took you so long?" The impact of pepfar on the expansion of HIV testing and counseling services in Africa.***Journal of Acquired Immune Deficiency Syndromes***, (2012); 60 (3): S63-S69.**

HIV testing and counseling services in Africa began in the early 1990s, with limited availability and coverage. Fears of stigma and discrimination, complex laboratory systems, and lack of available care and treatment services hampered expansion. Use of rapid point-of-care tests, introduction of services to prevent mother-to-child transmission, and increasing provision of antiretroviral drugs were key events in the late 1990s and early 2000s that facilitated the expansion of HIV testing and counseling services. Innovations in service delivery included providing HIV testing in both clinical and community sites, including mobile and home testing. Promotional campaigns were conducted in many countries, and evolutions in policies and guidance facilitated expansion and uptake. Support from President's Emergency Plan for AIDS Relief and national governments, other donors, and the Global Fund for AIDS, Tuberculosis, and Malaria contributed to significant increases in the numbers of persons tested in many countries. Quality of both testing and counseling, limited number of health care workers, uptake by couples, and effectiveness of linkages and referral systems remain challenges. Expansion of antiretroviral treatment, especially in light of the evidence that treatment contributes to prevention of transmission, will require greater yet strategic coverage of testing services, especially in clinical settings and in combination with other highimpact HIV prevention strategies. Continued support from President's Emergency Plan for AIDS Relief, governments, and other donors is required for the expansion of testing

needed to achieve international targets for the scale-up of treatment and universal access to knowledge of HIV status.

198.   Masalu JR, Kikwilu E.N, Kahabuka FK, Mtaya M, Senkoro A.R. Socio-demographic and behavioural correlates of oral health related quality of life among tanzanian adults: A national pathfinder survey *Tanzania Journal of Health Research*, **(2012); 14 (3).**

In response to the growing recognition of quality of life measurement in health care, indicators that address the social and psychological consequences of oral disorders have been developed to complement conventional clinical assessment. The objective of this study was to determine sociodemographic and behavioural correlates of oral health related quality of life (OHRQoL) among Tanzanian adults. The national pathfinder survey methodology described in the WHO Oral Health Surveys - Basic Methods was used to obtain a total of 1,759 Tanzanian adults aged 18 years and above. In line with the pathfinder methodology clusters were purposively selected to represent cities, towns and rural areas. In each cluster individuals were stratified by age and sex. The outcome variable was the OHRQoL in terms of oral impacts on daily performances (OIDP). Frequency distribution, bivariate analyses, and generalized linear models using log binomial regression models were performed by SPSS version 15. About half (49.1%) of the respondents reported at least one oral impact during a period of three months before the survey. Difficulty in chewing was the most prevalent impact affecting 39.9% of participants. A higher proportion of those who reported poor conditions of teeth had difficulties in chewing and sleeping was often interrupted. Multivariate analysis indicated that those who perceived their teeth conditions to be good (PR=0.38; CI: 0.32-0.44), were of younger age (PR=0.84; CI: 0.77-0.90), and had visited a dentist during the past five years or more (PR=0.84; CI: 0.77-0.90) and were less likely to have an oral impact. On the other hand those who restricted their sugar consumption (PR=1.12; CI: 1.030.1.22) were more likely to have an impact on at least one daily performance. It is concluded that the prevalence of OIDP was high while perceived teeth conditions and age varied with OHRQoL in terms of OIDP in the expected direction. Those who visited the dental clinic in the recent past had more impacts than those who did not. The findings of this study confirm the usefulness of subjective indicators in explaining peoples' suffering. In this regard it is recommended that in the next national pathfinder survey traditional clinical oral health indicators should be complemented with subjective indicators in order to obtain triangulated data for planning oral health services in Tanzania.

199.   Masalu JR, Aboud M, Moshi MJ, Mugusi F, Kamuhabwa A, Mgimwa N & Macfarlane S. B. An institutional research agenda: Focusing university expertise in Tanzania on national health priorities. *Journal of public health policy***.2012; 33: S186-S201.**

A well-articulated institutional health research agenda can assist essential contributors and intended beneficiaries to visualize the link between research and community health needs, systems outcomes, and national development. In 2011, Tanzania's Muhimbili University of Health and Allied Sciences (MUHAS) published a university-wide research agenda. In

developing the agenda, MUHAS leadership drew on research expertise in its five health professional schools and two institutes, its own research relevant documents, national development priorities, and published literature. We describe the process the university underwent to form the agenda and present its content. We assess MUHAS's research strengths and targets for new development by analyzing faculty publications over a five-year period before setting the agenda. We discuss implementation challenges and lessons for improving the process when updating the agenda. We intend that our description of this agenda-setting process will be useful to other institutions embarking on similar efforts to align research activities and funding with national priorities to improve health and development.

200.   **Masalu JR, Aboud M, Moshi MJ, Mugusi F, Kamuhabwa A, Mgimwa N. M, Phyllis F A J, Goodell E, Kaaya E, and Sarah B Macfarlane & Macfarlane S B. An institutional research agenda: Focusing university expertise in Tanzania on national health priorities.** *Journal of public health policy*. **2012; S186-S201.**

Background : A well-articulated institutional health research agenda can assist essential contributors and intended beneficiaries to visualize the link between research and community health needs, systems outcomes, and national development. In 2011, Tanzania's Muhimbili University of Health and Allied Sciences (MUHAS) published a university-wide research agenda. In developing the agenda, MUHAS leadership drew on research expertise in its five health professional schools and two institutes, its own research relevant documents, national development priorities, and published literature. We describe the process the university underwent to form the agenda and present its content. We assess MUHAS's research strengths and targets for new development by analyzing faculty publications over a five-year period before setting the agenda. We discuss implementation challenges and lessons for improving the process when updating the agenda. We intend that our description of this agenda-setting process will be useful to other institutions embarking on similar efforts to align research activities and funding with national priorities to improve health and development.

201.   **Mashamba V. Otorhinolarygological trauma among patients with head and neck injury admitted at Muhimbili national hospital dar es salaam, Tanzania**. **Master of medicine (Otorhinolaryngology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.
Introduction:The Ear, Throat and face region is the area in the body that is commonly involved inhead and neck injury. Trauma to this region is often associated with mortality and morbidity and varying degree of physical and functional damage.In Muhimbili National Hospital more than 1200 patients with head and neck injury are admitted annually and ORL region is likely to be ignored. Fractures of the facial bones can result in complications, such as sinusitis, facial deformity, and injury to the eye. Conditions like chronic otitis media can lead into various intracranial complications and hearing loss. **Aim**: The study aimed at determining the prevalence Otorhinolaryngological trauma among patients with head and Neck injury admitted at Muhimbili National Hospital, Dar es Salaam, Tanzania from May 2011 to February 2012. **Materials and methods**: This study was conducted at Muhimbili

National Hospital in four departments: Oral surgery department, Emergence medicine Department, Neural surgery department and Otorhinolaryngology department, It was a prospective crosssectional descriptive hospital based study. 235 patients who were diagnosed of having head and neck injuries in the respective departments were recruited. Information on age, sex and cause of injury was taken from the case notes .Each patient was then examined for the presence of ear, face and throat injuries, using the available bed side instruments. Data was analysed using the SPSS program. **Results:** Out of 235 patients, 121 (51.5%) were males and 114 (48.5%) were females, where, majority, 176 (74.9%) were of age group 21-40. Out of 235 patients,116(49.4%) had trauma in the ORL region whereby majority(56.8%) were in the age group 21-40 and males had higher proportion 70(57.9%) as compared to females 46(40.4%). Among patients who had trauma in the ORL region, majority had facial injuries 86 (74.1%) and occurred commonly on the age group 21-40 and majority were males 52 (75.3%). Among patients who had trauma in the ORL region, majority involved in road traffic accidents 75 (64.7%) and most of them were in the age group 21-40 (65.1%) and majority were males 47 (67.1%). **Conclusion: The** overall prevalence of Otorhinolaryngological trauma among head and neck injured patients attended at Muhimbili National hospital Dar es Salaam was noted to be high. It was higher among 20-41 years and in males.

202.   **Masika GM, Wettergren L, Kohi TW, & von Essen, L. Health-related quality of life and needs of care and support of adult Tanzanians with cancer: a mixed-methods study.** *Health and quality of life outcomes***.2012;** *10***(1): 133.**

Background: Cancer is among the three leading causes of death in low income countries and the highest increase with regard to incidence figures for cancer diseases are found in these countries. This is the first report of the health-related quality of life (HRQOL) and needs of care and support of adult Tanzanians with cancer. **Methods:** A mixed-methods design was used. The study was conducted at Ocean Road Cancer Institute (ORCI) in Dar es Salaam, Tanzania. One hundred and one patients with a variety of cancer diagnoses treated and cared for at ORCI answered the Kiswahili version of the EORTC QLQ-C30 investigating HRQOL. Thirty-two of the patients participated in focus group interviews discussing needs of care and support. Data from focus group interviews were analyzed with content analysis. **Results**: The findings show that the patients, both women and men, report a low quality of life, especially with regard to physical, role, and social function and a high level of symptoms and problems especially with financial difficulties and pain. Financial difficulties are reported to a remarkably high extent by both women and men. The patients, both women and men report least problems with emotional function. A content analysis of the interview data revealed needs of food and water, hygienic needs, emotional needs, spiritual needs, financial needs, and needs of closeness to cancer care and treatment services. **Conclusion:** The high score for pain points out that ORCI is facing severe challenges regarding care and treatment. However, when considering this finding it should be noted that the pain subscale of the Kiswahili version of the EORTC QLQ-C30 did not reach acceptable internal consistency and showed less than satisfactory convergent validity. This also applies to the subscales cognitive function and global health/quality of life. Attention should be drawn to meet the identified needs of Tanzanian cancer patients while hospitalized but also when at home. Increased

accessibility of mosquito nets, pads, and pain-killers would help to fulfil some needs.

203.   Masumo R, Bardsen A, Mashoto K, Åstrøm AN. Child- and family impacts of infants' oral conditions in Tanzania and Uganda- a cross sectional study *BMC Research Notes***, (2012); 5 art. no. 538 .**

Background: Early childhood dental caries impacts on the quality of life of children and their families. This study set out to assess the psychometric properties of an oral health related quality of life, OHRQoL, measure, based on items emanating from the Child-and Family impact sections of the Early Childhood Oral Health Impact Scale (ECOHIS), in Kiswahili and Luganda speaking communities. It was hypothesized that the Child- and Family impact scores would discriminate between children with and without clinically defined dental problems and reported good and bad oral health. Method. Kiswahili and Luganda versions of the Child- and Family impact scores were derived through translation in pilot studies. Totals of 1221 and 816 child/caretaker pairs attending health care facilities in Manyara, Tanzania and Kampala, Uganda, were recruited into the study. After caretakers completed the interview, their children underwent oral clinical examination. Results: Internal consistency reliability (Cronbach's alpha) was > 0.80 with respect to the Child impact score and 0.79 regarding the Family impact score. Multiple variable logistic- and Poisson regression analyses revealed that the Kiswahili and Luganda versions of the Child- and Family impact score associated in the expected direction with child's oral diseases as with their reported health and oral health status. In Manyara, multiple logistic regression revealed that the ORs of reporting Child impacts were 1.8 (95% CI 1.0-3.4) and 2.2 (1.3-3.4) among caretakers who confirmed linear hypoplasia and teething symptoms, respectively. In Kampala, the ORs for reporting Child impacts were 2.3 (95% CI 1.3-3.9), 1.7 (95% CI 1.1-2.5), 1.6 (95% CI 1.2-2.3) and 2.7 (95% CI 1.3-5.8) among those who confirmed teeth present, hypoplasia, teething symptoms and tooth bud extractions, respectively. The odds ratios for reporting Family impacts were 2.7 (95% CI 1.5-4.7), 1.5 (95% CI 1.1- 2.1) and 4.6 (95% CI 2.0-10.7) if reporting LEH, teething symptoms and toothbud experience, respectively. Conclusion: The Child and Family impact scores demonstrated acceptable internal consistency reliability and reproducibility whereas the discriminative validity was more ambiguous. The OHRQoL scores should be developed further and tested among Kiswahili and Luganda speaking caretakers.

204.   Masumo R, Bardsen A, Mashoto K, Astrom AN. Prevalence and socio-behavioral influence of early childhood caries, ECC, and feeding habits among 6 - 36 months old children in Uganda and Tanzania*BMC Oral Health***, (2012); 12 (1): art. no. 24 .**

Background: Early childhood caries (ECC) is a serious problem that has remained unexplored in sub-Saharan Africa. This study aimed to identify possible socio-behavioral correlates of ECC focusing 6-36 months old children and their caretakers.**Methods:** Cross sectional studies were conducted in a high fluoride rural area, Manyara, Tanzania and a low fluoride urban area, Kampala, Uganda. Totals of 1221 and 816 child - caretaker pairs attending health care facilities for growth monitoring were recruited in Manyara and

Kampala, respectively. All caretakers completed face to face interviews at the health care facility. Children underwent oral clinical examination whereby ECC and Enamel hypoplasia were recorded using the dmft (WHO 1997) and the DDE index (FDI 1992).Results: The prevalence of ECC was 3.7% in Manyara and 17.6% in Kampala. According to multiple logistic regression analyses, received oral health information from health worker was the strongest determinant of ECC in Manyara, adjusted OR 0.3, 95% CI 0.09 - 0.93. In Kampala, visible plaque, high sugar intake and presence of enamel hypoplasia associated with ECC, adjusted ORs 2.8 (95% CI 1.61- 4.95), 3.0 (95% CI 1.39 - 6.34) and 2.3 (95% CI 1.36 - 3.95).**Conclusion:** Oral health education aimed at caretakers of 6-36 months, including health care workers' information regarding the detrimental consequences for oral health of frequent sugar consumption and poor oral hygiene is important for prevention of ECC in Tanzania and Uganda.

205.   **Mathews C, Aarø LE, Grimsrud A , Flisher AJ, Kaaya S, Onya H, Schaalma H , Wubs, A, Mukoma W, KleppK.-I. Effects of the SATZ teacher-led school HIV prevention programmes on adolescent sexual behaviour: Cluster randomised controlled trials in three sub-Saharan African sites** *International Health*, **(2012); 4 (2): 111-122.**

In this study, the effects on young adolescent sexual risk behaviour of teacher-led school HIV prevention programmes were examined in two sites in South Africa (Cape Town and Mankweng) and one site in Tanzania (Dar es Salaam). In Cape Town, Dar es Salaam and Mankweng, 26, 24 and 30 schools, respectively, were randomly allocated to intervention or comparison groups. Primary outcomes were delayed sexual debut and condom use among adolescents aged 12-14 years (grade 8 in South Africa and grades 5 and 6 in Tanzania). In total, 5352, 4197 and 2590 students participated at baseline in 2004 in Cape Town, Dar es Salaam and Mankweng, respectively, and 73% (n. =. 3926), 88% (n. =. 3693) and 83% (n. =. 2142) were retained 12-15 months later. At baseline, 13% (n. =. 224), 5% (n. =. 100) and 17% (n. =. 164) had had their sexual debut, and 44% (n. =. 122), 20% (n. =. 17) and 37% (n. =. 57) of these used a condom at last sex, respectively. In Dar es Salaam, students in the intervention were less likely to have their sexual debut during the study (OR 0.65, 95% CI 0.48-0.87). In Cape Town and Mankweng, the intervention had no impact. The current interventions were effective at delaying sexual debut in Dar es Salaam but not in South Africa, where they need to be supplemented with programmes to change the environment in which adolescents make decisions about sexual behaviour.

206.   **Mayige M, Kagaruki G, Ramaiya K, & Swai A. Non communicable diseases in Tanzania: a call for urgent action.** *Tanzania Journal of Health Research*.**2012;** *13*(**5**).

Globally there is evidence of the growing burden of Non Communicable diseases (NCDs) especially in developing countries including Tanzania. This paper summarises the review of published papers on the magnitude of Non Communicable Diseases in the country. Current opportunities for management and control of NCDs are also explored. In this review diseases such as diabetes and hypertension have been shown to have increased over the years. Prevalence of risk factors such as obesity, dyslipidemia and smoking has been shown to be high with clear gender and urban rural differences. Generally there is paucity of national

representative data on the burden of risk factors and prevalence of non-communicable diseases. The main risk factors for NCDs namely smoking, alcohol intake, unhealthy diet and low physical activity are prevalent in both rural and urban communities. The socio-demographic and economic transition has a big role in the current rise of non-communicable diseases in Tanzania. There are initiatives to control the burden of non-communicable diseases in the country. However there is need to focus more on primary prevention at population level targeting interventions to reduce exposure to tobacco, reduce alcohol intake, reduce salt intake, promote healthy diets and physical activity. For the prevention and control of NCDs, there needs to be a continuum from primary to tertiary prevention and a scope of interventions from the community level up to the national level. Community-based interventions are needed targeting the risk factors for primary prevention. In addition, secondary prevention measures are needed targeting those at high risk to ensure that they are identified early through a high risk targeted screening for early identification and appropriate care. Effective policies are needed to support such interventions.

207.   Mbugi EV, Kayunze KA., Katale BZ, Kendall S, Good L, Kibik GS, Keyyu JD, Godfrey-Faussett P & Matee MI. 'One Health'infectious diseases surveillance in Tanzania: Are we all on board the same flight? *Onderstepoort Journal of Veterinary Research*.2012; *79*(2): 01-07.
Infectious diseases account for nearly 40% of the burden of human mortality and morbidity in low-income countries, of which 7% is attributable to zoonoses and 13% to recently emerging diseases from animals. One of the strategic approaches for effective surveillance, monitoring and control of infectious diseases compromising health in both humans and animals could be through a combination of multiple disciplines. The approach can be achieved through a joint effort from stakeholders comprising health professionals (medical and veterinary), social, economic, agricultural, environmental and other interested parties. With resource scarcity in terms of number of staff, skills and facility in low-income countries, participatory multi-sectoral and multidisciplinary approaches in limiting the burden of zoonotic diseases could be worthwhile. We review challenging issues that may limit the 'One Health' approach for infectious diseases surveillance in Tanzania with a focus on Health Policy and how best the human and animal health systems could be complemented or linked to suit the community in need for disease control under the theme's context.

208.   Mbugi, E. V., Katale, B. Z., Kendall, S., Good, L., Kibiki, G. S., Keyyu, J. D, Godfrey-Faussett P, Helden PV & Matee MI.Tuberculosis cross-species transmission in Tanzania: Towards a One-Health concept. *Onderstepoort Journal of Veterinary Research*.2012; *79*(2): 01-06.

For centuries, tuberculosis, which is a chronic infection caused by the bacillus *Mycobacterium tuberculosis* has remained a global health problem. The global burden of tuberculosis has increased, particularly in the Southern African region, mainly due to HIV, and inadequate health systems which has in turn given rise to emergent drug resistant tuberculosis (TB) strains. Bovine tuberculosis (BTB) has also emerged as a significant disease with the tendency for inter-species spread. The extent of interspecies BTB transmission both in urban and rural communities has not been adequately assessed. The

phenomenon is of particular importance in rural communities where people share habitats with livestock and wildlife (particularly in areas near national parks and game reserves). Aerosol and oral intake are the major routes of transmission from diseased to healthy individuals, with health care workers often contracting infection nosocomially. Although TB control has increasingly been achieved in high-income countries, the disease, like other poverty-related infections, has continued to be a disaster in countries with low income economies. Transmission of infections occurs not only amongst humans but also between animals and humans (and occasionally vice versa) necessitating assessment of the extent of transmission at their interface. This review explores tuberculosis as a disease of humans which can cross-transmit between humans, livestock and wildlife. The review also addresses issues underlying the use of molecular biology, genetic sequencing and bioinformatics as t tools to understand the extent of inter-species cross-transmission of TB in a 'One Health' context.

209.   Mbunda F, Mchembe MD, Chalya PL, Rambau P, Mshana SE, Kidenya BR, Gilyoma JM. Experiences with Surgical treatment of chronic lower limb ulcers at a Tertiary hospital in northwestern Tanzania: A prospective review of 300 cases *BMC Dermatology*, (2012); 12 art. No. 17.

Background: Chronic lower limb ulcers constitute a major public health problem of great important all over the world and contribute significantly to high morbidity and long-term disabilities. There is paucity of information regarding chronic lower limb ulcers in our setting; therefore it was necessary to conduct this study to establish the patterns and outcome of chronic lower limb ulcers and to identify predictors of outcome in our local setting.Methods: This was a descriptive prospective study of patients with chronic lower limb ulcers conducted at Bugando Medical Centre between November 2010 and April 2012. Ethical approval to conduct the study was sought from relevant authorities. Statistical data analysis was done using SPSS version 17.0 and STATA version 11.0.Results: A total of 300 patients were studied. Their ages ranged from 3 months to 85 years (median 32 years). The male to female ratio was 2:1. The median duration of illness was 44 days. Traumatic ulcer was the most frequent type of ulcer accounting for 60.3% of patients. The median duration of illness was 44 days. The leg was commonly affected in 33.7% of cases and the right side (48.7%) was frequently involved. Out of 300 patients, 212 (70.7%) had positive aerobic bacterial growth within 48 hours of incubation. Pseudomonas aeruginosa (25.5%) was the most frequent gram negative bacteria isolated, whereas gram positive bacteria commonly isolated was Staphylococcus aureus (13.7%). Twenty (6.7%) patients were HIV positive with a median CD4+ count of 350 cells/μl. Mycological investigation was not performed. Bony involvement was radiologically reported in 83.0% of cases. Histopathological examination performed in 56 patients revealed malignancy in 20 (35.7%) patients, of which malignant melanoma (45.0%) was the most common histopathological type. The vast majority of patients, 270 (90.0%) were treated surgically, and surgical debridement was the most common surgical procedure performed in 24.1% of cases. Limb amputation rate was 8.7%. Postoperative complication rate was 58.3% of which surgical site infection (77.5%) was the most common post-operative complications. The median length of hospital stay was 23 days. Mortality rate was 4.3%. Out of the two hundred and eighty-seven (95.7%) survivors, 253

(91.6%) were treated successfully and discharged well (healed). After discharge, only 35.5% of cases were available for follow up at the end of study period.Conclusion: Chronic lower limb ulcers remain a major public health problem in this part of Tanzania. The majority of patients in our environment present late when the disease is already in advanced stages. Early recognition and aggressive treatment of the acute phase of chronic lower limb ulcers at the peripheral hospitals and close follow-up are urgently needed to improve outcomes of these patients in our environment.

210. **Mbwambo ZH, Magadula JJ, Gatto J & Richomme P. Phytochemical and pharmacological investigations of Garcinia volkensii Engl.** *Spatula DD-Peer Reviewed Journal on Complementary Medicine and Drug Discovery***. 2012;** *2***(1): 1-7.**

Aim: The aim of this study is to investigate the biological potential of extracts and isolated compounds from *G. volkensii* using three different bioassays, namely antibacterial, cytotoxicity and antioxidant. **Methods:** The extracts and pure compounds were obtained from the stem bark of *G. volkensii* using standard procedures. Antibacterial activity of the extracts and morelloflavone (1), was determined against standard strains of Bacillus anthracis, Bacillus cereus, Bacillus subtilis, Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa, Shigella flaxineri, Staphylococcus aereus, Streptococcus fecalis, Salmonela typhimirium and Vibrio cholera. The cytotoxicity potential of extracts and compound 1 was evaluated against brine shrimp larvae, whereas the antioxidant activity was determined using using 1,1-diphenyl-2-picrylhydrazyl (DPPH) and Oxygen Radical Absorbance Capacity (ORAC) assays. Furthermore, the anti-AGEs (Advanced Glycation Endproducts) activity was determined using an automated liquid handling workstation. The isolation of pure compounds was carried out using column chromatography with silica gel as a stationery phase and organic solvents of different polarities as mobile phases. **Results:** The crude extract and morelloflavone (1) exhibited higher antibacterial activity having MIC values in the range of 0.049 - >2.50 mg/ml. The BST results indicate that all extracts and morelloflavone (1) exhibited LC50 value > 100 µg/ml. In the antioxidant assays, both extracts and morelloflavone (1) showed activities higher than that of standard drugs. **Conclusion**: These data suggests that G. volkensii could be a potential source of antibacterial and antioxidant agents. The result gives scientific support to its use by the indigenous people in managing conditions associated with HIV-related secondary infections.

211. **Mbwile G. Growth and pubertal development among hiv infected children aged 8-18 years in dar es saalam**. **Master of Medicine (Pediatric and Child Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Advances in management of HIV-infected infants and children have been remarkable, majority of infected children are now surviving into adolescence. Several studies have shown that growth and pubertal development is often impaired among children with HIV and AIDS. Abnormalities include early deficits in height and weight, and delay in skeletal maturation. Onset of menarche and pubertal development are also delayed. The magnitudes of delayed puberty among HIV infected children in Tanzania have not been studied; however there is one unpublished study, which evaluated the growth and pubertal

development parameters in the general population. Assessment of the onset and progression of sexual maturation is important in patients with HIV because this information has immediate clinical application in the interpretation of endocrine and growth status. **Objective** To assess growth and pubertal development among HIV infected children aged 8-18 in Dar es Salaam. **Study design and Setting** This was a cross section hospital based study at Care and treatment clinics (CTC) municipal Hospitals in Dar es Salaam. **Methodology** After obtaining informed consent data was collected using a structured questionnaire. Anthropometric measurements of growth and Tanner stages of sexual development of children with HIV and AIDS aged between 8 and 18 years were assessed. Blood was taken to assess CD4 count. Both female and male were classified as having puberty when they are at Tanner stage 2 or greater for breast and genital respectively and pubic hair development in both sexes. Data was analyzed using STATA version 10 statistical packages. **Results** During the study period, 330 HIV infected children were recruited out of whom 183 (55.4 %) were female. The median age of the study populations was 12.0 years. Median weight was 32.0 (IQR 25-45) kg and girls were significantly heavier and had higher BMI than boys. All participants enrolled had HIV which was confirmed and were on ART. Median duration of ART was 48 (IQR 30-62) month. Majority of the participants were in WHO stage III and had CD4 count above 500cells/ul. HIV infected children were found in Tanner stage 2 at an advanced age compared to the reference population. The median age at menarche was 15 (IQR 14-16) years compared to the reference population, which was 13.0 (IQR 12-15) years. Among HIV infected females there was no significant difference in weight, height and BMI compared to the reference population when they entered Tanner stage 2. Males in the reference population were in Tanner stage 2 with higher weight and BMI and they were taller compared with the reference population. In univariable and multivariable analysis advanced age was associated with onset of Tanner stage 2 or more. **Conclusion and recommendation** Children infected with HIV and AIDS have significant delay in growth and sexual maturation. Considering these findings monitoring of growth and pubertal development should be highly emphasized in this population, it should be part of the comprehensive package. Matched case control studies of HIV-infected and uninfected children are needed to better quantify the delay in pubertal onset and to compare the pace of pubertal maturation.

212.   **Mcdonald CM , Kupka R, Manji KP , Okuma J , Bosch RJ, Aboud S, Kisenge R, Spiegelman D, Fawzi WW, Duggan CP. Predictors of stunting, wasting and underweight among Tanzanian children born to HIV-infected women***European Journal of Clinical Nutrition***, (2012); 66 (11): 1265-1276.**

Background/Objectives: Children born to human immunodeficiency virus (HIV)-infected women are susceptible to undernutrition, but modifiable risk factors and the time course of the development of undernutrition have not been well characterized. The objective of this study was to identify maternal, socioeconomic and child characteristics that are associated with stunting, wasting and underweight among Tanzanian children born to HIV-infected mothers, followed from 6 weeks of age for 24 months.Subjects/Methods:Maternal and socioeconomic characteristics were recorded during pregnancy, data pertaining to the infants birth were collected immediately after delivery, morbidity histories and anthropometric measurements were performed monthly. Multivariate Cox proportional hazards methods

were used to assess the association between potential predictors and the time to first episode of stunting, wasting and underweight.Results:A total of 2387 infants (54.0% male) were enrolled and followed for a median duration of 21.2 months. The respective prevalence of prematurity (37 weeks) and low birth weight (2500 g) was 15.2% and 7.0%; 11.3% of infants were HIV-positive at 6 weeks. Median time to first episode of stunting, wasting and underweight was 8.7, 7.2 and 7.0 months, respectively. Low maternal education, few household possessions, low infant birth weight, child HIV infection and male sex were all independent predictors of stunting, wasting and underweight. In addition, preterm infants were more likely to become wasted and underweight, whereas those with a low Apgar score at birth were more likely to become stunted.Conclusions:Interventions to improve maternal education and nutritional status, reduce mother-to-child transmission of HIV, and increase birth weight may lower the risk of undernutrition among children born to HIV-infected women.

213.   Mcharazo A. Hatibu Z.. The role of electronic records management in developing trustworthy electronic records in judicial systems: an overview Presented at SCECSAL XXth Conference hosted by KLA on 4th-8th June 2012 venue LAICO REGENCY HoTEL Nairobi, Kenya.

Records Management is now an essential part of governmental structure in industrialized countries, and has recently also become a significant issue in developing countries. While in many developed countries electronic information or evidence is recognized in judicial systems, some laws in developing countries do not have provisions recognizing electronic documents as admissible evidence. Apart from that, the records are not properly managed due to a number of challenges such as shortage of qualified personnel, lack of training, and shortage of storage facilities. As a result, records are not properly managed. If records are not properly managed, how can they be trusted as reliable and authentic sources of information? This paper explores some of the answers to the challenges and looks critically on environmental scanning of Judicial electronic information, legal and Judicial system of Tanzania: information provision and flow, developing appropriate retention schedules, legal issues to consider in going paperless, electronic record trustworthy and characteristics. As a solution to the challenges, the paper recommends proper handling of electronic records by record managers by taking into account the institutions legal and operational needs; ensure the integrity, authenticity and validity of electronics records; and adhere to retention and disposal schedules.

214.   Mcharo B. Motorcycle crash: injuries pattern and associated factors among patients treated at muhimbili orthopaedic institute (moi) Master of Medicine (Orthopaedic and Traumatology) Dissertation 2012. Muhimbili University of Health and Allied Sciences.Dar es salaam.
Road Traffic injuries are of major health problem. In recent years there has been an increase in motorcycling as means of transport in Dar es Salaam and Tanzania as whole. It is believed that motorcycle is also a source of employment and income to young people. This increase in motorcycling has been accompanied by an increase of motorcycle crash injuries. Despite the alarming increase of motorcycle crash injuries, little is known about the pattern of injuries

and associated factors of motorcycle crash in the local setting. This study sought to identify the pattern and factors associated with motorcycle crash injuries among the victims treated at Muhimbili Orthopaedic Institute. This was a descriptive cross sectional study involving motorcycle crash injury victims treated at the emergency department of MOI from 15th March, 2011 to 15th September, 2011. A structured questionnaire was used to collect the information from the study participants in a face to face interview. Data on demographic factors, injury patterns, use of helmet and license possession were recorded. The injuries were grouped according to anatomical location. Data were entered into the statistical package for social studies (SPSS) program (version 15) for clearing, coding and statistical analysis. P-value of 0.05 was considered significant. In the period of six months a total of 2429 road traffic injury victims were treated at the emergency department of MOI out of who 886(36.5%) were motorcycle crash injury victims. The study included 722 motorcycle crash injury victims, 625 (86.6%) were males and 97 (13.4%) females with a mean age of 33.9 years (SD=13.1), ranging from 13 to 90 years. Majority (65.0%) motorcycle crash injury victims were between the age of 20 and 40 years. The extremity injuries 520 (72.0%) and head injuries 246 (34.1%) were the commonest injuries. The commonest musculoskeletal injury (66.8%) was fracture, with tibia-fibula fracture comprising the largest proportion (30.4%). There were 116 (16.1%) of motorcycle crash injury victims who sustained injury in more than one body regions. The collision between motorcycle and motor vehicle was the most frequently reported collision (50.3%) followed by collision between motorcycle and pedestrian (27.4%). Helmet use was reported in only 44.9% of motorcycle crash injury victims including rider (61.8%) and passenger (12.6%). 49.9% of riders possessed license and its possession significantly influenced the use of helmet among riders Motorcycle crash is major problem at Muhimbili Orthopaedic Institute Dar es Salaam and the majority of those who are involved in motorcycle crashes are youth. The majority of the injuries involved the extremity and head injuries. Riding license and use of helmet are still not widely used. And the collision between a motorcycle and motor vehicle was the most recorded. Since motorcycle crashes are preventable and associated factors causing injuries are reducible necessary laws and restrictive regulations should be put in place. Also the educational programs on road safety should be implemented in primary schools.

215.   **Mdegela MH, Muganyizi PS, Pembe AB, Simba DO, & van Roosmalen J. How rational are indications for emergency caesarean section in a tertiary hospital in Tanzania?.** *Tanzania Journal of Health Research*, 2012; *14 :*(4).

The rate of caesarean section (CS) at Muhimbili National Hospital (MNH) in Tanzania has been on progressive increase for past three decades. Concerns have been raised if this increase is justified by rational decisions but no study so far has investigated this problem. The aim of the study was to find out whether decisions made for CS comply with a set of locally made standards, with an assumption that if the standards are met, then the increase in CS rate seen at MNH is genuine. The five most common indications for CS were identified from the obstetric electronic data base. Most common indications included obstructed labour, cephalopelvic disproportion (CPD), failure to progress, repeat CS and foetal distress. Criteria for the best practice for each indication were developed based on the National guidelines and local expert consensus. Information extracted from the case notes, antenatal cards and

partographs were compared to the standard audit criteria and the decision judged as standard or substandard. Three hundred forty five women had a decision made for emergency CS. Repeat CS was the most frequent indication (30.2%), followed by obstructed labour (14.4%) and foetal distress (13.6%). Audit of 324 women's files showed that 30% of women had substandard decisions for CS mostly in the foetal distress group (59.1%) and least in the repeat CS group (9.1%). Among the 324 mothers with decision for emergency CS, 279 (86.1%) delivered by CS as decided and 45 (13.9%) delivered vaginally before CS could be performed. Women who delivered vaginally after decision for CS and the nulliparous women had significantly more substandard decisions compared to those delivered by CS and parous women respectively. In conclusion, a substantial proportion of decisions for emergency CS made in the hospital is substandard and may contain women in whom surgical intervention could be avoided. This calls for a need to improve quality of assessment and decision before performing CS.

216.   Mdoe P. Quality of partogram recordings and perinatal outcomes at muhimbili national hospital, tanzania. Master of Medicine in Obstetrics and Gynecology Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Introduction: The management of labor using partogram is the standard way of improving both maternal and perinatal outcomes. The partogram increases the quality and regularity of all observations on the fetus and the mother in labor and aids early recognition of problems in both mother and fetus. Correct recording of labor parameters in the partogram is a reliable tool to estimate midwives' operation. Tanzania has high maternal and perinatal mortality rates. One third of stillbirths takes place during delivery and is largely avoidable. It is estimated that 40% of stillbirths are associated with substandard fetal heart monitoring during labor. Objective; This study aimed at assessing the quality of partogram recordings and compare with fetal outcomes among women delivering at Muhimbili National Hospital. Methodology; It was a crossectional study in which partograms of women whose labor was monitored using partogram delivered in the hospital were reviewed immediately after delivery. The study was conducted from 1st September to 30th November 2011. Using a checklist, recordings of parameters of labor in partogram, fetal outcomes (Apgar score at 5 minute, still birth and admission to neonatal ward for special care) and immediate maternal outcomes (PPH, perineal tear, visceral injuries following cesarean section) were assessed. Partogram recordings of labor parameters were judged as standard if standard recorded or substandard if not recorded as per standard protocols. Results; Partogram was used in all women who were admitted in labor ward with spontaneous labor. A total of 1,051 partograms were reviewed during the study time. Only 8.9% of partograms had all parameters with standard recordings. The most unrecorded parameter was maternal pulse rate. Most (81.4%) of partograms had substandard recordings of uterine contraction. There were 53 newborns with Apgar score less than 7 at 5 minutes and 17 fresh stillbirths. Substandard fetal heart rate recording in the partogram is significantly associated with Apgar score less than 7 at 5 minute and stillbirths. (P-value<0.001, Chi-square 15.92). Majority (79.5%) had spontaneous vaginal delivery and 18.6% delivered by cesarean section. Though there were a trend of association but statistically substandard partogram recordings were not associated with immediate adverse maternal outcomes. Conclusion: This study as other studies conducted as where found high proportion of substandard partogram recordings.

Substandard recordings of fetal heart rate and uterine contractions were significantly associated with adverse fetal outcomes. Supervisory mechanisms and on job training on partogram use are recommended as a way of improving labor monitoring and standard recordings. This will improve both fetal and maternal outcomes.**Methodology** A total of 185 men above 45 years of age were recruited, blood sample were analyzed at the MUHAS-Microbiology laboratory, by both qualitative PSA method, and quantitative PSA ELISA assay. Participants filled in questionnaires from which the BMI data, smoking status and alcohol consumption behaviors were obtained. Data were analyzed using SPSS version 17. **Results** Using PSA ELISA as a gold standard, the rapid PSA test showed sensitivity of 95.2%, specificity of 82.4%, PPV and PNV of 55.5% and 82.4% respectively. The BMI correlate with PSA level ($r= 0.908$) likewise obesity was strongly associated with elevated PSA level, with a relative risk of 1.24. On the other hand, other risk factors (smoking status and alcohol consumption) showed negative association with PSA level. Their relative risks were 0.38 and 0.39 respectively **Conclusion** Rapid PSA test could be used for mass screening of prostate cancer so as to increase access of the test to most of Tanzanian men. Obesity, smoking and alcohol consumption are risk factors that could interfere with PSA screening.

217.   **Mwakigonja AR, Torres LMM, Mwakyoma HA, & Kaaya EE. Cervical cytological changes in HIV-infected patients attending care and treatment clinic at Muhimbili National Hospital, Dar es Salaam, Tanzania.** *Infectious agents and cancer*.**2012;** *7*(1), 3.

Background: Tanzania is among Sub-Saharan countries mostly affected by the HIV and AIDS pandemic, females being more vulnerable than males. HIV infected women appear to have a higher rate of persistent infection by high risk types of human papillomavirus (HPV) strongly associated with high-grade squamous intraepithelial lesions (HSIL) and invasive cervical carcinoma. Furthermore, although HIV infection and cervical cancer are major public health problems, the frequency and HIV/HPV association of cervical cancer and HSIL is not well documented in Tanzania, thus limiting the development of preventive and therapeutic strategies.**Methods:** A prospective unmatched, case-control study of HIV-seropositive, ≥ 18 years of age and consenting nonpregnant patients attending the care and treatment center (CTC) at Muhimbili National Hoospital (MNH) as cases was done between 2005 and 2006. HIV seronegative, non-pregnant and consenting women recruited from the Cervical Cancer Screening unit (CCSU) at ORCI were used as controls while those who did not consent to study participation and/or individuals under < 18 years were excluded. Pap smears were collected for routine cytodiagnosis and P53 immunohistochemistry (IHC). Cervical lesions were classified according to the Modified Bethesda System. **Results:** A total of 170 participants from the two centers were recruited including 50 HIV-seronegative controls were from the CCSU. Ages ranged from 20-66 years (mean 40.5 years) for cases and 20-69 years (mean 41.6 years) for controls. The age group 36-45 years was the most affected by HIV (39.2%, n = 47). Cervicitis, squamous intraepithelial lesions (SIL) and carcinoma constituted 28.3% (n = 34), 38.3% (n = 46) and 5.8% (n = 7) respectively among cases, and 28% (n = 14), 34% (n = 17) and 2% (n = 1) for controls, although this was not statistically significant (P-value = 0.61). IHC showed that p53 was not detectable in HPV + Pap smears and cell blocks indicating possible degradation.**Conclusions:** The frequency of SIL and carcinoma appeared to be higher among HIV-infected women on HAART compared

to seronegative controls and as expected increased with age. HIV seropositive patients appeared to present earlier with SIL compared to those HIV seronegative suggesting a role of HIV in altering the natural history of HPV infection and cervical lesions. The absence of p53 immunoreactivity in HPV + lesions is indicative of the ability of HPV E6 proteins to interact with the tumor suppressor gene and pave way for viral-induced oncogenesis in the studied Tanzanian women.

218. **Mfangavo H. A clinical audit of discharge summaries: conformity to set guidelines in the department of psychiatry and mental health at muhimbili national hospital dar es salaam tanzania. Master of Science in Clinical Psychology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Patients" records are the most basic clinical tools that are required in every consultation. Discharge summary as a document collect patient"s information about inpatients care. The primary function is to support continuity of care as the patient returns to next health provider. Improvement in the care of mentally ill patients may be enhanced by improving discharge summaries writing in terms of its contents and timing. There is paucity of data that shows deficits in writing discharge summaries in the developing countries including Tanzania. Systematically reviewing and auditing care against explicit criteria and set of guidelines is a quality improvement process that seeks to improve the patient care and outcomes. Implementing best-practice guidelines for managing mental illnesses is demanding but rewarding. Identifying deficits in writing discharge summaries as done in this clinical audit is pertinent to ensure improvement of quality of patients" care and good outcome. **Objective:** To determine the extent to which discharge summaries conform to the guideline for best practice of mental health service delivery in Department of Psychiatry and Mental Health at Muhimbili National Hospital (MNH) **Study site and design:** A cross sectional retrospective, clinical audit of a discharge summary looking at the contents and timing of discharge summary writing was conducted in the Department of Psychiatry and Mental Health at the MNH **Methods:** A chart review of all new admission discharge summaries in 2010 was done. A total of 200 planned discharge summaries were reviewed. Data was collected using a discharge check list that was extracted from guideline for best practice of mental health service delivery at MNH. The conformity level was considered at a cutoff point of ≥88% of overall contents of discharge summary as from other studies. The results were tabulated, grouped and statistically analyzed using the descriptive statistics reported as proportions, frequencies, and comparative statistic using Pearson Chi square/fisher"s exact test to detect whether there is a significant statistical difference between different categorical variables. The P value of less than or equal to 0.05 was considered statistically significant for differences examined.**Results:** This study found that, of 200 systematically selected planned discharge summaries; "documented review with patient diagnosis" 100% (n=200) and "documented date of return to outpatient clinic" 90.82% (n=178) are the only two items that were in conformity with standard discharge guidelines. The other ten items studied were found not conforming to standard guidelines. Again to determine the timing of discharge summary writing, the results of this study have identified that about 93% (n=186) of the discharge summaries were written within two weeks of admission while others were before/after two weeks of admission. **Conclusion and**

Recommendations: Implementing good clinical practice in metal health in the department of psychiatry and mental health at MNH remains a challenge for clinicians. Discharging clinician‴s should follow standard guidelines for good clinical practice as agreed by the department to reduce areas of deficits in clinical practice in mental health. Interventions are needed to ensure clinicians are conforming to the standard guidelines when writing discharge summaries.

219.   **Mfinanga SG, Kivuyo SL, Ezekiel L, Ngadaya E, Mghamba J & Ramaiya K. Public health concern along side with global initiative on the priority action for "silent uprising epidemic" on Non-Communicable Diseases in Tanzania.** *Tanzania Journal of Health Research.***2012;** *13***(5).**

Tanzania is already facing challenges caused by existing burden of communicable diseases, and the growing trend of non-communicable diseases (NCDs), which raises a lot of concerns and challenges. The objective of this review is to provide broad insight of the "silent epidemic" of NCDs, existing policies, strategies and interventions, and recommendations on prioritized actions. A review of existing literature including published articles, technical reports, and proceedings from national and international NCDs meetings was carried out. The burden, existing interventions, socio-economic impact, lessons learnt, and potential for expanding cost effective interventions in Tanzania were explored. Challenges to catch up with global momentum on NCD agenda were identified and discussed. The review has indicated that the burden of NCDs and its underlying risk factors in Tanzania is alarming, and affects people of all socio-economic status. The costs of health care for managing NCDs are high, and thus impoverishing the already poor people. The country leadership has a high political commitment; there are policies and strategies, which need to be implemented to address the growing NCD burden. In conclusion, NCDs in Tanzania are a silent rising health burden and has enormous impact on an individual and country's social-economical status. From the experience of other countries, interventions for NCDs are affordable, feasible and some are income generating. Multi-sectoral approach, involving national and international partners has a unique role in intensifying action on NCDs. Tanzania should strategize on implementation research on how to adapt the interventions and apply multi-sectoral approach to control and prevent NCDs in the country

220.   **Mgelea E. Validity of clinical and immunological monitoring to detect virological failure in hiv infected children on antiretroviral therapy in dar es salaam, tanzania, 2012**. Master of Medicine (Pediatrics and Child Health) **Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: Globally, it is estimated that 2 million children under the age of 15 years are living with human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) and the majority reside in sub-Saharan Africa, South and Southeast Asia. In Tanzania, it is estimated that around 160,000 children are living with HIV and more than 11,000 children are on antiretroviral therapy (ART). The treatments response monitoring is primarily by using clinical and immunological parameters to detect virological failure. The validity of clinical and immunological monitoring to detect virological failure in children receiving ART is not well documented. **Objective**: To determine the validity of clinical and

immunologic monitoring in detecting virological failure among HIV infected children on ART in Dar es Salaam. **Methods**: The study is health facility based cross sectional study of HIV infected children attending care and treatment clinics, who were receiving ART for at least six months. We screened 485 children on ART in Dar es Salaam for enrollment. 218 met inclusion criteria and blood samples were taken for viral load (VL) testing. Two hundreds and seventeen results were available for analysis. One VL results was inconclusive. The viral load testing was performed using Roche Cobas Amplicor HIV-1 RNA monitor version 1.5 assay (Roche Diagnostics, USA). Plasma VL below 400 copies/ml indicates good response to ART while Plasma VL ≥401 copies/ml defined Virological failure. SPSS version 17.0 and Epi Info Version 6.0. (CDC, Atlanta, USA) were used for statistical analysis. Chi square test was used to analyse categorical variables. Logistic regression was used to determine predictor of virological failure. **Results**: Two hundred and eighteen children were included in the study. Overall mean age of the children was 10.6 years (range 1-16 years). Of 217 children with available viral load results, 124 (57.1%) had virological failure. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of clinical criteria were 12.9%, 90.3%, 64.0% and 43.8% respectively. The immunological criteria had sensitivity, specificity PPV and NPV of 22.6%, 73.1%, were 53.3% and 41.4% respectively. The combined clinical and immunological criteria has sensitivity of 25.8%, specificity 69.9%, while PPV and NVP were 53.3% and 41.4% respectively. Children who received NVP based regimens were more likely to have virological failure compared to other regimens, OR=2, 95% CI (1.20-3.64), *p=0.03*. **Conclusion**: Virological failure was highest followed by immunological and clinical failures. This study demonstrated a poor performance of current recommended clinical and immunological criteria to monitor HIV-infected children on ART. Children who were on NVP-based regimens had a higher risk of developing virological failure than those who were in other regimens. **Recommendations**: Improving access to viral load testing is feasible approach at this stage for early and reliable identification of virological failure in children on ART in order to make informed decision on switching to second line regimen. Regular surveillance on resistance test is recommended to detect early emergence of HIV drug resistance.

221. **Mghamba F. Adherence to arv and its association with immunestatus among hiv infected children aged 2-14 years in dar es salaam. Master of Medicine (Paediatric and Child Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Adherence is particularly critical with antiretroviral drugs in treatment of paediatric HIV infection where adherence of more than 95% is necessary to maximize the benefit of antiretroviral drugs. Studies on adherence in developed world have demonstrated that higher level of drugs adherence is associated with improved virological, immunological and clinical outcome. Despite the benefit of antiretroviral drugs in paediatric HIV infection, there are consequences to non adherence including disease progression, failure of viral suppression, decrease in CD4 cell count, drug resistance, risk of transmission of resistant virus and limited treatment options. It is therefore important to identify children with non adherence in order to intervene before developing drug resistance and treatment failure. **Objective** The aim of this study was to determine proportion of good adherence to ARV measured by caretaker report, medication return, plasma nevirapine concentration and its association with immune status among HIV-infected children in Dar es Salaam.

Methodology A cross-sectional study was conducted between May and October 2011 in three Municipal hospitals (Mwananyamala, Temeke and Amana) in Dar es Salaam region. A total of 300 children aged 2-14 years on nevirapine based ARV regimen for at least six month were enrolled consecutively as they attend CTC. The study involved assessment of nutritional status and adherence to ARV. A single blood sample for CD4 count/percent and nevirapine plasma concentration was taken on the day of assessment. CD4 count was determined using flow cytometry and nevirapine plasma concentration was determined using reversed phase High Performance Liquid Chromatography (HPLC/UV). Proportions were used to summarise categorical variables and Chi square test as well as Fisher's exact test were used to test for statistical difference between these variables. Mean and standard deviation was used to summarise continuous variables. A logistic regression model was used to assess the independent predictors of the outcome. **Results** A total of 300 children met inclusion criteria, the mean age (SD) of these children was 8(3) years and 50.7% were female. Caretaker report and medication return showed good adherence (98% and 97%) respectively. However adherence assessed by nevirapine plasma concentration was 85%significantly lower than that of caretaker report and medication return (p<0.001). Furthermore, the agreement between nevirapine plasma concentration and medication return and between nevirapine plasma concentration and self report were weak (k=0.131) (k=0.09) respectively. This means that care taker report and medication return reflected good adherence to ARV's which was contrary to what was found when using nevirapine plasma concentrations. Nevirapine plasma concentration below 3μg/ml was associated with immunosuppression (p=0.021) while medication return >5% of prescribed dose and caretaker reported missed dose were not associated with immunosuppression (p=0.474), (p=0.569) respectively. Therefore, nevirapine plasma concentration could be a predictor of adherence and correlate with immunosuppression when compared to medication return and caretaker report. Other independent factors associated with immune status were infections (OR=2.02, CI=1.01- 3.41), Age of the child (OR=6.00, CI=2.96-12.17) and duration of ARV use (OR=6.79, CI=2.69-17.2).**Conclusions.** Nevirapine plasma concentration is a good predictor of adherence and correlate well with immunosuppression. Caretaker report and medication return were poor predictors of adherence. Non adherence by nevirapine plasma concentration was high (15%) suggesting that in every 10 children on ARV 2 did not adhere to medication. This is alarming considering the management of HIV and AIDS in paediatric patients

222. **Mgunya A. Assessment of risk factors for cardiovascular diseases among hiv infected patients attending muhimbili national hospital care and treatment clinic. Master of Medicine (Internal Medicine) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Mortality due to cardiovascular disease among HIV patients is a concern in both developed and developing countries. The increased cardiovascular events is suspected to be due to the metabolic complications atributed by HIV virus itself and antiretroviral drugs. The CVD risk factors noted to be increased among HIV patients include dyslipidemia, obesity, hypertension, diabetes,excessive alcohol intake and cigarette smoking. But the data is sparse on the magnitude and distribution of these risk factors among HIV patients in Tanzania. **Objective** This study was aimed at assesing the risk factors for cardiovascular

diseases among HIV infected patients attending Muhimbili National Hospital Care and Treatment Clinic. **Methods** A hospital based cross - sectional study was conducted among HIV patients aged 30 years and above attending MNH Care and Treatment Clinic.The study was conducted between August and December 2011.Interviews were done using a structured questionaire followed by a clinical assessment. Fasting blood samples were collected for determination of fasting blood glucose and lipids parameters. Quantitative CVD risk was calculated using Q risk 2011 mathematical model. **Results** A total of 370 patients were analysed, with 69% being females. The mean age of the study subjets was 40years (+ 8.13) with range of 30-65 years. Seventy four percent of the patients were on HAART. The overall prevalence of dyslipidemia was 82% . The prevalence of hypertriglyceridemia, hypercholesterolemia, incresed LDL and low HDL were 36% ,42%, 53% and 50% respectively.The prevalence of dysglycermia was 16% with prevalence of impared fasting blood glucose and overt DM at 10% and 7% respectively. HAART use was vii significantly associted with increased levels of total cholestrol, triglycerides, LDL, HTN, impared fasting blood glucose and DM . Obesity and Low HDL were more prevalent among HIV patient who were not on HAART.Patients on PI containing regimes had higher prevalenc of CVD risk factors compared to patients on non PI containing regimen. Overal CVD risk of developing a cardiovascular event in 10years using 2011 mathematical model was in the low levels(<10%) with a median (IQR) of 1.2% (0.4-4). **Conclusions**: There is a high prevalence of risk factors for cardiovascular diseases among HIV patients at Muhimbili National Hospital Care and Treatment Clinic. HAART use was significantly associated with increased levels of total cholestrol, triglycerides, LDL, HTN, DM and impared fasting blood glucose. Using 2011 mathematical model risk for CVD is low in this study population.

223.   **Mhada T V, Fredrick F, Matee M I, & Massawe A, Neonatal sepsis at Muhimbili National Hospital, Dar es Salaam, Tanzania; aetiology, antimicrobial sensitivity pattern and clinical outcome.** *BMC public health.* **2012;** *12*(**1**)**: 904.**
Background: Neonatal sepsis contributes significantly to morbidity and mortality among young infants. The aetiological agents as well as their susceptibility to antimicrobial agents are dynamic. This study determined aetiology, antimicrobial susceptibility and clinical outcome of neonatal sepsis at Muhimbili National Hospital. **Methods:** Three hundred and thirty neonates admitted at the Muhimbili National Hospital neonatal ward between October, 2009 and January, 2010 were recruited. Standardized questionnaires were used to obtain demographic and clinical information. Blood and pus samples were cultured on MacConkey, blood and chocolate agars and bacteria were identified based on characteristic morphology, gram stain appearance and standard commercially prepared biochemical tests. Antimicrobial sensitivity testing was performed for ampicillin, cloxacillin, gentamicin, amikacin, cefuroxime and ceftriaxone on Mueller Hinton agar using the Kirby Bauer diffusion method. **Results:**Culture proven sepsis was noted in 24% (74/330) of the study participants. Isolated bacterial pathogens were predominantly *Staphylococcus aureus*, *Klebsiella spp* and *Escherichia coli. Klebsiella spp* 32.7% (17/52) was the predominant blood culture isolate in neonates aged below seven days while *Staphylococcus aureus* 54.5% (12/22) was commonest among those aged above seven days. *Staphylococcus aureus* was the predominant pus swabs isolate for both neonates aged 0–6 days 42.2% (98/232) and 7–28 days 52.3% (34/65). Resistance of blood culture isolates was high to ampicillin 81.1%

(60/74) and cloxacillin 78.4% (58/74), moderate to ceftriaxone 14.9% (11/74) and cefuroxime 18.9% (14/74), and low to amikacin 1.3% (1/74). Isolates from swabs had high resistance to ampicillin 89.9% (267/297) and cloxacillin 85.2 (253/297), moderate resistance to ceftriaxone 38.0% (113/297) and cefuroxime 36.0% (107/297), and low resistance to amikacin 4.7% (14/297). Sepsis was higher in neonates with fever and hypothermia (p=0.02), skin pustules (p<0.001), umbilical pus discharge and abdominal wall hyperemia (p=0.04). Presence of skin pustules was an independent predictor of sepsis OR 0.26, 95% CI (0.10-0.66) p=0.004. The overall death rate was 13.9% (46/330), being higher in neonates with sepsis 24.3% (18/74) than those without 10.9% (28/256), p=0.003.**Conclusions:**_Staphylococcus aureus_ was predominant isolate followed by _Klebsiella_ and _Escherichia coli_. There was high resistance to ampicillin and cloxacillin. Mortality rate due to neonatal sepsis was high in our setting. Routine antimicrobial surveillance should guide the choice of antibiotics for empirical treatment of neonatal sepsis.

224.   **Michael E. Use of contraceptives methods among women in stable marital relations attending health facilities in kahama district, shinyanga region, Tanzania. Master of Public Health Dissertation 2012.** _Muhimbili University of Health and Allied Sciences.Dar es salaam._

Background: Kahama district in Shinyanga region has Contraceptive Prevalence Rate (CPR) of 16%, which is far below the national average of 27%. Little is known on factors contributing to the low level of utilization of contraceptives in Kahama district, and particularly among women in stable marital relations. **Objectives:** To determine the prevalence of current use of contraceptive methods among women in stable marital relations attending health facilities; describe the types of contraceptive methods used among women in stable marital relations attending health facilities; assess socio-cultural factors (beliefs including religious, husband's approval, and spouse communication) in relation to use of contraceptive methods among women in stable marital relations attending health facilities; determine the association between socio–demographic factors (age, occupation, education level, access, number of children) and use of contraceptive methods among women in stable marital relations attending health facilities. **Methods:** A cross-sectional study on contraceptive methods use was conducted among 314 women and 20 service providers in ten wards from ten health facilities. Data were collected using structured and in-depth interview questionnaires. Information gathered included socio-demographic, socio – cultural characteristics, accessibility of contraceptive methods, current use and access to information. **Results:** Thirty five percent of women in stable marital relations reported to be using contraceptive methods. Highest (58%) use of contraceptives was reported among women in formal employment. Factors found to be significantly associated with contraceptive use were: education level, occupation, traditional cultural beliefs, and support from husband/partners and access to information while religion, decision maker on desired number of children in the family were not found to be significantly associated with the use of contraceptive methods. **Conclusion:** Prevalence of contraceptive use among women in stable marital relations is 34.5% than that in the general population of wom Kahama district (16%, 2011 district report). Socio-demographic factors like education level and occupation were found to influence the use of contraceptive methods among women in stable marital relations. Moreover, socio-cultural factors like religious beliefs and husband/partner support were also crucial in influencing the use of contraceptive methods. **Recommendations:**

District Health Management teams should develop interventions that will enable women in stable marital relations to understand the importance of using contraceptive methods. Since this study did not involve men, further studies are needed to determine the extent of use of contraceptive methods among men and associated factors.en with the age of 15 -49 years in

225. **Mikindo T. Attracting low level trained health workers in the rural areas: insights from discrete choice experiment. Masters of Public Health (MPH) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam***.**

Background: One of the biggest challenges that policy makers face in the health sector in Tanzania is how to attract qualified human resources to the rural and remote parts of Tanzania. Currently the government has been able to only employ 35% of needed work force. The distribution of the employed health workers is characterized by geographical imbalance, attributed by reluctance to work in remote and rural. In addressing the gap, the government has increased training of lower carder health workers. However, less is known on how the newly trained lower carders would respond to known job attributes(incentiveswhile eliciting choices for particular place; particularly their attraction to rural and remote areas. **Objective:** To determine the important financial and non-financial incentives that would attract low level trained health workers to work in rural and remote areas. **Methodology:** A cross sectional explorative study using experimental economics design of discrete choices was conducted among 195 Low level final year students at Musoma Clinical Assistants School, Tarime and Geita Nursing Schools. The study investigated the incentive (attributes) package that attracts low level trained health workers in rural areas. A multivariate binary logit model was used to estimate the extent to which Low level trained health workers were willing to tradeoff between the five job attributes (net monthly pay, provision of basic housing, opportunities to upgrade their qualifications, availability of medicines and other supplies and good leadership and management) and the selection of either rural or urban job. **Results:** Most Low Level Trained Health workers" were willing to tradeoff job attributes in favor of provision of upgrading training in exchange of a rural job, OR=0.83(0.7- 11), with P value =0.037, had statistically significant influence on Low Level trained health workers" preferences. Further analysis of sub-groups showed almost similar results, with significantly influencing selection of rural jobs by students who resides in rural areas. Ranking of the attributes by using simple ordering and the DCE models, ware not statistically different, P-values = 1.573. **Conclusions:** Provision of upgrading training is more likely to attract to Low Level health workers to work in rural areas. However combining provision of training with increase in net monthly pay and/ or availability of medicines can enhance the chances of low level health workers tochoose a rural job.

226. **Minzi OM, Buma D, Kagashe GA. Self-initiation of antiretroviral therapy in the developing world: The involvement of private pharmacies in an HIV program** *Drug, Healthcare and Patient Safety***, (2012); 4 (1): 27-31.**

Background: Self-initiation to antiretroviral treatment (ART) exposes the patient to the risk of drug toxicity, poor adherence to treatment, and escalates the development of drug resistance. Objectives: To determine the sources of antiretroviral (ARV) drugs by unregistered human immunodeficiency virus (HIV)-infected patients and the extent of ARV

self-medication. **Methods:** Simulated clients were used to investigate availability and ARV dispensing practice in the private pharmacies in Dar Es Salaam, Tanzania. A total of 480 HIV-infected patients qualifying to start ART were interviewed to find out their previous use of ARV drugs prior to visiting the HIV clinics. Venous blood (2 mL) was collected from each patient who indicated not to have used ARVs in the past (n = 450). Blood samples were analyzed for the presence and levels of nevirapine (NVP). **Results:** Only 5.1% (23/451) of pharmacies were found stocking ARVs drugs, among which 4.0% were retail. Drug dispensers in nearly all (15/18) retail pharmacies which stocked ARVs were willing to sell ARVs without prescription. Out of 450 enrolled patients, only 2.7% (12) stated that they had been receiving ARV drugs from HIV clinics but interrupted the ART treatment due to various reasons. From 450 patients, only 10% had quantifiable NVP concentrations in the blood, despite stating in an interview that they had not recently used ARVs. Conclusion: Prior use of ARV drugs outside HIV clinics was rare among patients attending those centers. However, the results show that some patients could access and use ARV drugs from private pharmacies without undergoing ART eligibility assessment in HIV clinics.

227.   Minzi OM, Ngaimisi E, Shewiyo DH, Sasi P & Ignace AM. Inter-laboratory development and cross validation of a chromatographic method for determination of lumefantrine in human plasma-A proficient capacity assessment of bioanalytical laboratories in East Africa. *J Anal Bioanal Techniques*,2012; *3*(131): 2, 1-5

Background: Bioanalytical laboratories in developing countries face many challenges. The objective of this work was to assess the capacity of bioanalytical laboratories in emerging countries in setting and validating analytical methods. An HPLC method for determination of lumefantrine in human plasma was used to assess three medical university laboratories of Tanzania, Uganda and Kenya. **Methodology:** Bioanalytical experts from Analytical Clinical Concept, Leidersbach, in Germany (ACC GmbH) developed the HPLC method and assigned the 3 laboratories to set up and validate the method. The laboratories were tasked to determine the concentrations of blinded plasma samples spiked with lumefantrine and had to submit their analysis reports to ACC for evaluation within 6 weeks. Each laboratory was provided with reference standard, internal standard columns and precolumns. Spiked plasma samples were shipped under dry ice from Germany to "Gesellschaft fuer Internationale Zusammenarbeit" (GIZ) local ofice of each participating country. All other requirements were procured by individual laboratories. **Results:** The results from Muhas Bioanalytical Laboratory (Tanzania) met the criteria set by ACC laboratory. The results were within the range set by ACC laboratory and most calibration curves had good linearity with coeficient of correlation always > 0.990. The inter-day precision and accuracy (Relative standard deviation=RD of recovery) were always < 15%. The relative deviation of the results obtained compared to assigned concentrations for blinded plasma samples were between -15% and -25%. The Laboratory met the stipulated time line and the obtained validation results were within the range set by the ACC experts. The results from other laboratories were also satisfactory**. Conclusion**: The results indicate that with further little infrastructural and technical assistance the capacity of these bioanalytical laboratories in conducting bio-analyses will be more strengthened and can serve as centers for training bioanalytics and

running bioequivalence studies in the region.

228. **Mkony CA, O'Sullivan PS, Owibingire SS, Fyfe MV, Omer S, Freeman P , Makubi A , Mloka DA, Portillo CJ, Leyna GH, Tarimo E, Kaaya EE, MacFarlane SB. Teaching and educational scholarship in Tanzania: Faculty initiative to improve performance of health professions' students***Journal of Public Health Policy***, (2012) ; 33 (1): S150-S170.**

Well-educated and competent health professionals influence the health system in which they work to improve health outcomes, through clinical care and community interventions, and by raising standards of practice and supervision. To prepare these individuals, training institutions must ensure that their faculty members, who design and deliver education, are effective teachers. We describe the experience of the Muhimbili University of Health and Allied Sciences (MUHAS) in encouraging improvements in the teaching capacity of its faculty and postgraduate students triggered by a major institutional transition to competency-based education. We employed a multi-stage process that started by identifying the teaching and learning needs and challenges of MUHAS students and faculty. Collaborating with the University of California San Francisco (UCSF), MUHAS responded to these needs by introducing faculty to competency-based curricula and later to strategies for long term continuing improvement. We demonstrate that teaching faculty members are keen for local institutional support to enable them to enhance their skills as educators, and that they have been able to sustain a program of faculty development for their peers.

229. **Mkumbo R. PAttern of hearing impairment among patients with hearing loss attending at the orl department of muhimbili national hospital. Master of Medicine (Otorhinolaryngology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Introduction: Hearing loss is a world health problem with significant physical and psychosocial repercussions. Although there is no cure for certain forms of hearing loss, many patients can be helped, especially when the problem is recognized early. It has been estimated that at least 50 percent of the burden of hearing loss could be prevented by primary, secondary and tertiary preventive measures. **Aim**: To determine the pattern of hearing impairment among patients with hearing loss attending the ORL department at Muhimbili National Hospital, Dar es Salaam, Tanzania. The study was an analytical cross-sectional hospital based, conducted at MNH, the largest referral hospital in Tanzania which serves the largest number of Tanzanian population. It is also the referral hospital for all patients from Tanzania Mainland and Zanzibar. The MNH also serves as the teaching hospital for Muhimbili University of Health and Allied Sciences. **Materials and methods**: In this study, 187 patients with hearing loss were recruited from ORL department (including the wards and clinic).Information was collected by using data collection forms and was filled by the researcher. Otological examination was done by the researcher, tympanometry and audiometry tests were done by an audiologist to assess hearing disorders. The data was analyzed using the SPSS program. **Results:** Out of 187 patients with hearing loss, 51.9% were males and 48.1% were females. The majority of patients (32.6%) were concentrated in the age group of 19-36 years and the age group of 0-18 years (26.2%). Results also show the

majority of patients (85%) had bilateral hearing loss and 15% had unilateral hearing loss, where as 8% had hearing loss of right ear and 7% the left ear. The sensorineural type of hearing loss was prevalent in 79.3%, followed by the conductive hearing loss (14.1%) and mixed hearing loss type found in 6.6% of patients. 15.9% had unilateral mild hearing loss, also unilateral moderate severe had 15.9% and only 4.4% had bilateral profound hearing loss. **Conclusion:** In overall the pattern of hearing loss as seen at MNH, most of the patients have bilateral hearing loss with mild to moderate severity. Sensorineural was the dominating type of hearing loss seen, followed by conductive and mixed.

230. **Mloka DA, Omer S, Mkony CA, Kisenge RR, Macfarlane SB, & O'Sullivan PS. Health professions educators as agents of change in Tanzania: Creativity to implement new curricula.** *Journal of public health policy***.2012;33: S171-S185.**

Muhimbili University of Health and Allied Sciences (MUHAS) strives to instill in its graduates skills and competencies appropriate to serving the Tanzanian population well. MUHAS leadership, working in collaboration with educators from the University of California San Francisco (UCSF), selected and trained an interdisciplinary group of faculty members to promote effective teaching. We describe the development of this group of faculty change agents – now known as the Health Professions Educators Group (HPEG). The HPEG invigorated the education environment at MUHAS by: engaging many colleagues in special training events that introduced new methods for teaching and assessment; encouraging innovation; and developing strong mentoring relationships. HPEG members piloted courses in education to prepare all postgraduate students as peer educators, teaching assistants, and as candidates for faculty future appointments. Creation of a 'teaching commons' reinforces the new focus on innovative teaching as faculty members share experiences and gain recognition for their contributions to quality education.

231. **Mmbaga EJ, Dodo MJ, Leyna GH, Moen K & Leshabari MT. Sexual Practices and Perceived Susceptibility to HIV Infection among Men Who have Sex with Men in Dar Es Salaam, Mainland Tanzania.** *Journal of AIDS & Clinical Research***.2012;** *3***: p1-6**

This paper is the first in mainland Tanzania to report on sexual practices and HIV perceived risk of Men who have Sex with Men (MSM). A total of 150 MSM with a mean age of 21.3 were recruited using a respondent-driven sampling. Their median age at first anal sex was 12.2 and their median number of lifetime sexual partners was 35. The majority (94.0%) of the respondents reported more than two sex partners in the three months preceding the survey, and 32.0% reported involvement in heterosexual relationships. Two-thirds of the participants had low HIV perceived risk, which was associated with involvement in heterosexual relationships (AOR, 3.6, 95% CI: 1.0-15.0), lower condom use (AOR, 0.3, 95% CI: 0.2-0.7), alcohol consumption (AOR, 6.0, 95% CI: 2.3-16.9) and lower likelihood of ever having been tested for HIV (AOR, 0.3, 95% CI: 0.1-0.9). Focuses in HIV prevention have excluded MSM and our results indicate the need to consider this group in HIV programming in Tanzania.

232. **Mmbaga EJ. Leonard F, & Leyna GH. Incidence and predictors of adolescent's**

early sexual debut after three decades of HIV interventions in Tanzania: a time to debut analysis. *PloS one*.2012; *7*(7): e41700 .

Purpose: To determine the incidence and predictors of adolescent's early sexual debut after three decades of HIV interventions in Tanzania. **Methods:** In a cross-section study of adolescents aged 16–19 residing in Morogoro Municipality, information on socio-demographic, parental-and-peer communication, and sexual behaviors were collected. Cox-regression analysis was used to examine predictors of time to sexual debut. Results: A total of 316 adolescents with mean age of 17.5±0.9 were recruited. Half (48.7%) of adolescent were sexually active with mean age at sexual debut of 14.6±2.3. Of these, 57.8% had sex before their 15th birthday with incidence of early sexual debut of 17.4/1000 person-years at risk. Adolescent family characteristics, peer pressure, alcohol use, parental and peer communication were key predictors of early sexual debut. **Conclusion:** Parental and peer communication strategies works calling for efforts to increase its scope to reach all adolescents alongside promoting family stability and reducing adolescent alcohol consumption.

233. Mnyika KS, Masatu MC, Klepp KI. Perceptions of AIDS risk and condom use among out-of-school adolescents in Moshi rural district, northern Tanzania.*East African journal of public health*, (2012); 9 (2): 53-57.

To determine the magnitude of perceived AIDS risk among out-of-school adolescents in Moshi rural district of Kilimanjaro region, northern Tanzania. A cross-sectional study involving face-to-face interviews with out-of-school adolescents in eleven rural villages in Moshi district, northern Tanzania. We found that of the 668 adolescents (10-19 years of age) surveyed, 45.4% were sexually active and significantly more men than women reported being sexually active (55.85 versus 23.0%, OR = 0.24, 95% CI = 0.16 to 0.34). Adolescents who had travelled to Moshi town or out of Tanzania were significantly more likely to be sexually active compared with those who have never travelled. Despite perception of AIDS risk, a large majority (70.5%) of sexually active adolescents reported having multiple sexual partners. Adolescents who perceived being at AIDS risk were less likely to report having multiple sexual partners and were more likely to report having used a condom at the last sexual intercourse. These findings indicate that adolescents in this rural population are still practising high risk sexual behaviours suggesting the need for youth-targeted intervention programmes in rural Tanzania.

234.   Mnyika KS, Makwaya CK, Lyamuya EF, Nyamuryekung'e K, Ndyetabura FE, Dahoma MU,Ali S, & Mzee, S. (2012). Prevalence of HIV-1 infection in Zanzibar: results from a national HIV-1 serosurvey 2002. *East African journal of public health*.2012; *9*(3): 123-127.
Objective: To determine the prevalence of HIV-1 infection in Pemba and Zanzibar islands.**Methods**: We used an interviewer-administered questionnaire that consisted of pre-coded and open-ended questions consisting of 29 items. The questionnaire was developed in English and translated into Swahili language before use. The questionnaire was pilot tested and modified before use. A total of 30 Shehias were randomly selected for the survey out of

a total of 248 Shehias. A Shehia is the smallest government administrative unit in Pemba and Zanzibar that consists of two to three villages. The study sample was obtained through cluster random sampling of 76 households from each Shehia. Informed consent was sought from the Head of household and from each potential eligible participant. Eligibililty criteria included all persons aged 12 years and above who slept overnight in the selected household at the time of the study. Exclusion criteria included non-residents of Zanzibar and Pemba such as tourists, Informed consent from persons below the age of 18 years were witnessed and ratified by their parents, guardians, caretakers or neighbours. All consenting participants were included in the study sample. Blood sports were collected using filters and tested for HIV-1 using ELISA test at the Zanzibar Reference Laboratory. Samples found positive for ELISA were subjected to a 2nd ELISA test.**Results**: The total number of persons who participated in the survey was 5852 out of 5868 eligible persons giving the overall response rate of 99.7%. Of the 5852 persons who participated in the survey, 41% (N = 2414) were males and 59% N = 3455) were females. The overall mean age of the study population was 30.4 years with age ranging from 12-65 years. The overall prevalence of HIV-1 infection was 0.6% with more women being significantly affected than men (0.9% versus 0.2%; adjusted OR = 2.88, 95% CI = 1.16-7.12). Of the 5852 persons who participated in the survey, 5.7% admitted having had casual partner in the past 6 months and of these 19.6% reported having used a condom during the most recent casual sex.**Conclusion:** We conclude that HIV-1 infection in Zanzibar is still low and women are more affected than men.

235.   **Mnyika KS, Makwaya CK, Lyamuya EF, Nyamuryekung'e K, Ndyetabura FE, Dahoma MU, & Mzee S. Prevalence of HIV-1 infection in Zanzibar: results from a national HIV-1 serosurvey 2002.** *East African journal of public health*.**2012;** *9*(3):123-127.**

Objective: To determine the prevalence of HIV-1 infection in Pemba and Zanzibar island. **Methods:** We used an interviewer-administered questionnaire that consisted of pre-coded and open-ended questions consisting of 29 items. The questionnaire was developed in English and translated into Swahili language before use. The questionnaire was pilot tested and modified before use. A total of 30 Shehias were randomly selected for the survey out of a total of 248 Shehias. A Shehia is the smallest government administrative unit in Pemba and Zanzibar that consists of two to three villages. The study sample was obtained through cluster random sampling of 76 households from each Shehia. Informed consent was sought from the Head of household and from each potential eligible participant. Eligibililty criteria included all persons aged 12 years and above who slept overnight in the selected household at the time of the study. Exclusion criteria included non-residents of Zanzibar and Pemba such as tourists, Informed consent from persons below the age of 18 years were witnessed and ratified by their parents, guardians, caretakers or neighbours. All consenting participants were included in the study sample. Blood sports were collected using filters and tested for HIV-1 using ELISA test at the Zanzibar Reference Laboratory. Samples found positive for ELISA were subjected to a 2nd ELISA test. **Results**: The total number of persons who participated in the survey was 5852 out of 5868 eligible persons giving the overall response rate of 99.7%. Of the 5852 persons who participated in the survey, 41% (N = 2414) were males and 59% N = 3455) were females. The overall mean age of the study population was

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236. **Mnyika KS, Makwaya CK, Lyamuya, EF, Nyamuryekung'e K, Ndyetabura FE, Dahoma MU,Ali S, & Mzee S. Prevalence of HIV-1 infection in Zanzibar: results from a national HIV-1 serosurvey 2002.** *East African journal of public health*.**2012;** *9*(3): 123-127.

Objective: To determine the prevalence of HIV-1 infection in Pemba and Zanzibar islands.**Methods:** We used an interviewer-administered questionnaire that consisted of pre-coded and open-ended questions consisting of 29 items. The questionnaire was developed in English and translated into Swahili language before use. The questionnaire was pilot tested and modified before use. A total of 30 Shehias were randomly selected for the survey out of a total of 248 Shehias. A Shehia is the smallest government administrative unit in Pemba and Zanzibar that consists of two to three villages. The study sample was obtained through cluster random sampling of 76 households from each Shehia. Informed consent was sought from the Head of household and from each potential eligible participant. Eligibililty criteria included all persons aged 12 years and above who slept overnight in the selected household at the time of the study. Exclusion criteria included non-residents of Zanzibar and Pemba such as tourists, Informed consent from persons below the age of 18 years were witnessed and ratified by their parents, guardians, caretakers or neighbours. All consenting participants were included in the study sample. Blood sports were collected using filters and tested for HIV-1 using ELISA test at the Zanzibar Reference Laboratory. Samples found positive for ELISA were subjected to a 2nd ELISA test. **Results:** The total number of persons who participated in the survey was 5852 out of 5868 eligible persons giving the overall response rate of 99.7%. Of the 5852 persons who participated in the survey, 41% (N = 2414) were males and 59% N = 3455) were females. The overall mean age of the study population was 30.4 years with age ranging from 12-65 years. The overall prevalence of HIV-1 infection was 0.6% with more women being significantly affected than men (0.9% versus 0.2%; adjusted OR = 2.88, 95% CI = 1.16-7.12). Of the 5852 persons who participated in the survey, 5.7% admitted having had casual partner in the past 6 months and of these 19.6% reported having used a condom during the most recent casual sex.**Conclusion:** We conclude that HIV-1 infection in Zanzibar is still low and women are more affected than men.

237. **Mnyika KS, Masatu MC, & Klepp KI. Perceptions of AIDS risk and condom use among out-of-school adolescents in Moshi rural district, northern Tanzania.** *East African journal of public health*.**2012;** *9*(2): 53-57.

Objective: To determine the magnitude of perceived AIDS risk among out-of-school adolescents in Moshi rural district of Kilimanjaro region, northern Tanzania. **Methods:** A cross-sectional study involving face-to-face interviews with out-of-school adolescents in

eleven rural villages in Moshi district, northern Tanzania. **Results**: We found that of the 668 adolescents (10-19 years of age) surveyed, 45.4% were sexually active and significantly more men than women reported being sexually active (55.85 versus 23.0%, OR = 0.24, 95% CI = 0.16 to 0.34). Adolescents who had travelled to Moshi town or out of Tanzania were significantly more likely to be sexually active compared with those who have never travelled. Despite perception of AIDS risk, a large majority (70.5%) of sexually active adolescents reported having multiple sexual partners. Adolescents who perceived being at AIDS risk were less likely to report having multiple sexual partners and were more likely to report having used a condom at the last sexual intercourse. **Conclusion:** These findings indicate that adolescents in this rural population are still practising high risk sexual behaviours suggesting the need for youth-targeted intervention programmes in rural Tanzania.

238.   **Moen BE, Sakwari G, Mamuya SH, Kayumba AV, Larsson L, Pehrson C, Mashalla YJ, & Bråtveit M. (2012). Respiratory inflammation among workers exposed to airborne dust with endotoxins in a coffee curing factory.** *Journal of Occupational and Environmental Medicine*.**2012;** *54***(7): 847-850.**

Objective: To study dust exposure and inflammatory reactions in the respiratory tract among coffee curing workers in Tanzania. **Methods:** A cross-sectional study was conducted in a Tanzanian coffee curing factory. Coffee workers (n = 15) were compared with unexposed controls (n = 18); all workers were nonsmokers. Exhaled nitric oxide was examined using an electrochemistry-based NIOX MINO device. Personal air samples were analyzed for total dust and endotoxins, using gravimetric analysis and the chromogenic Limulus amebocyte lysate endpoint assay, respectively. Results: Total dust levels ranged from 0.2 to 27.9 mg/m^3, and endotoxin levels ranged from 42 to 75,083 endotoxin units/m^3. Concentrations of exhaled nitric oxide, analyzed by linear regression and adjusted for age (β = 0.57; 95% confidence interval, 0.08 to 1.06; P = 0.02), was higher among coffee workers than among the control group**. Conclusion**: The results indicate a relationship between the coffee dust and signs of respiratory inflammation.

239.   **Moen K, Aggleton P, Leshabari MT & Middelthon AL. Not at all so hard-to-reach: same-sex attracted men in Dar es Salaam.** *Culture, health & sexuality*, **2012;***14***(2), 195-208.**

Based on research in Tanzania, this paper critically examines the widely circulating notion that African same-sex attracted men are hard-to-reach individuals and populations. Despite expectations to the contrary, it was neither time consuming nor difficult to identify and get to know same-sex attracted men in Dar es Salaam. On the contrary, a large and diverse group of such men could readily be encountered, befriended and involved in HIV-related research. The fieldwork was characterised by communicative openness and the researcher was treated with immense kindliness, hospitality and inclusivity. While we may not be in a position to say that the situation is identical everywhere else, we find reason to caution against accepting and propagating unexplained, unexamined and unverified claims to the effect that same-sex attracted men in Africa cannot be reached. We argue that such claims contribute to stigmatise

same-sex attracted men and to hinder much-needed HIV-related research and programming.

240.   **Mohamed N. Association between pmtct services utilization among hiv positive mothers and hiv status of their hiv-exposed children in mtwara district, Tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam***.**

Background: Although without any intervention in PMTCT up to 80% of HIV exposed children could not be infected with HIV, PMTCT interventions provide a critical opportunity to prevent vertical transmission of HIV from mother to child during pregnancy, labour and delivery and/or during breastfeeding. **Objectives:** The objective of the study therefore was to determine the association between utilization of PMTCT services among HIV positive mothers with children aged 6 to 24 months and HIV status of their exposed children attending post-natal clinics in Mtwara Rural District. **Material and Methods:** The study was carried out between July and August 2012. Analytical cross sectional study using structured questionnaire among 130 HIV positive mothers who had children aged between 6 to 24 months was employed. Random sampling of Health Facilities were done followed by conveniently sampling to select participants, where all HIV positive mothers (who fulfilled the inclusion criteria) who attended the clinic during the time of data collection were consecutively included in the study till the sample size reached. **Results:** About 10% of children born by mothers who knew their HIV positive status before pregnancy and they were on ARV treatment were infected with HIV compared to 50% of children born by mothers who were not on ART treatment before pregnancy ($\chi 2$ =4.3, p = 0.038). Transmission rate of HIV from mother to child among mothers who received ARV's for PMTCT during pregnancy was 15.5% compared to 58.8% of mothers who do not received ARV's for PMTCT during pregnancy. Regardless of intervention, the prevalence of HIV among exposed children who had mixed feeding was 36.1% while for those who were exclusively breastfed/formula fed was 13.8% ($\chi 2$ = 8.077, p = 0.004). **Conclusions and Recommendations**: Reduction of MTCT of HIV is possible with effective PMTCT interventions, including access to ARV's for PMTCT by mothers during pregnancy, labour, and during lactation period and also for exposed children from birth till when they stopped breastfed or proven to be HIV infected. Appropriate infant feeding practices is also crucial in reduction of MTCT. Strategies to address programmatic challenges of lower ANC attendance, low facility delivery and low post-natal care attendance in rural Tanzania which contribute to low uptake of ARV prophylaxis for PMTCT during pregnancy, labour and after delivery observed in this study are essential.

241.   **Morbach S , Furchert H , Gröblinghoff U, Hoffmeier H, Kersten K, Klauke G-T , Klemp U, Roden T, Icks A , Haastert B , Rümenapf G , Abbas ZG , Bharara M , Armstrong DG. Long-term prognosis of diabetic foot patients and their limbs: Amputation and death over the course of a decade** *Diabetes Care***, (2012); 35 (10): 2021-2027.**

Objective - There is a dearth of long-term data regarding patient and limb survival in patients with diabetic foot ulcers (DFUs). The purpose of our study was therefore to prospectively investigate the limb and person survival of DFU patients during a follow-up

period of more than 10 years. **Research design and methods** - Two hundred forty-seven patients with DFUs and without previous major amputation consecutively presenting to a single diabetes center between June 1998 and December 1999 were included in this study and followed up until May 2011. Mean patient age was 68.8 ± 10.9 years, 58.7% were male, and 55.5%had peripheral arterial disease (PAD). Times to first major amputation and to death were analyzed with Kaplan- Meier curves and Cox multiple regression. **Results** - A first major amputation occurred in 38 patients (15.4%) during follow-up. All but one of these patients had evidence of PAD at inclusion in the study, and 51.4% had severe PAD [anklebrachial pressure index ≤0.4]). Age (hazard ratio [HR] per year, 1.05 [95% CI, 1.01-1.10]), being on dialysis (3.51 [1.02-12.07]), and PAD (35.34 [4.81-259.79]) were significant predictors for first major amputation. Cumulative mortalities at years 1, 3, 5, and 10 were 15.4, 33.1, 45.8, and 70.4%, respectively. Significant predictors for death were age (HR per year, 1.08 [95% CI, 1.06-1.10]), male sex ([1.18-2.32]), chronic renal insufficiency (1.83 [1.25-2.66]), dialysis (6.43 [3.14-13.16]), and PAD (1.44 [1.05-1.98]). **Conclusions -** Although long-term limb salvage in this modern series of diabetic foot patients is favorable, long-term survival remains poor, especially among patients with PAD or renal insufficiency.

242.   **Moremi N, Mshana S E, Kamugisha E, Kataraihya J, Tappe D, Vogel U, & Claus, H. Predominance of methicillin resistant Staphylococcus aureus-ST88 and new ST1797 causing wound infection and abscesses.** *The Journal of Infection in Developing Countries* **2012:** *6*(08), 620-625.

Introduction: Although there has been a worldwide emergence and spread of methicillin-resistant *Staphylococcus aureus* (MRSA), little is known about the molecular epidemiology of MRSA in Tanzania.**Methodology**: In this study, we characterized MRSA strains isolated from clinical specimens at the Bugando Medical Centre, Tanzania, between January and December 2008. Of 160 *S. aureus* isolates from 600 clinical specimens, 24 (15%) were found to be MRSA. Besides molecular screening for the Panton Valentine leukocidin (PVL) genes by PCR, MRSA strains were further characterized by Multi-Locus Sequence Typing (MLST) and *spa* typing.**Results:** Despite considerable genetic diversity, the *spa* types t690 (29.1%) and t7231 (41.6%), as well as the sequence types (ST) 88 (54.2%) and 1797 (29.1%), were dominant among clinical isolates. The PVL genes were detected in 4 isolates; of these, 3 were found in ST 88 and one in ST1820. Resistance to erythromycin, clindamicin, gentamicin, tetracycline and co-trimoxazole was found in 45.8%, 62.5%, 41.6%, 45.8% and 50% of the strains, respectively.**Conclusion:** We present the first thorough typing of MRSA at a Tanzanian hospital. Despite considerable genetic diversity, ST88 was dominant among clinical isolates at the Bugando Medical Centre. Active and standardized surveillance of nosocomial MRSA infection should be conducted in the future to analyse the infection and transmission rates and implement effective control measures.

243.   **Mori AT & Kaale EA.Priority setting for the implementation of artemisinin-based combination therapy policy in Tanzania: evaluation against the accountability for reasonableness framework.** *Implement Sci.***2012;** *7*: 18.

Background: Priority setting for artemisinin-based antimalarial drugs has become an integral part of malaria treatment policy change in malaria-endemic countries. Although

these drugs are more efficacious, they are also more costly than the failing drugs. When Tanzania changed its National Malaria Treatment Policy in 2006, priority setting was an inevitable challenge. Artemether-lumefantrine was prioritised as the first-line drug for the management of uncomplicated malaria to be available at a subsidized price at public and faith-based healthcare facilities. **Methods**: This paper describes the priority-setting process, which involved the selection of a new first-line antimalarial drug in the implementation of artemisinin-based combination therapy policy. These descriptions were further evaluated against the four conditions of the accountability for reasonableness framework. According to this framework, fair decisions must satisfy a set of publicity, relevance, appeals, and revision and enforcement conditions. In-depth interviews were held with key informants using pretested interview guides, supplemented with a review of the treatment guideline. Purposeful sampling was used in order to explore the perceptions of people with different backgrounds and perspectives. The analysis followed an editing organising style. **Results**: Publicity: The selection decision of artemether-lumefantrine but not the rationale behind it was publicized through radio, television, and newspaper channels in the national language, Swahili. Relevance: The decision was grounded on evidences of clinical efficacy, safety, affordability, and formulation profile. Stakeholders were not adequately involved. There was neither an appeals mechanism to challenge the decision nor enforcement mechanisms to guarantee fairness of the decision outcomes. **Conclusions**: The priority-setting decision to use artemether-lumefantrine as the first-line antimalarial drug failed to satisfy the four conditions of the accountability for reasonableness framework. In our understanding, this is the first study to evaluate priority-setting decisions for new drugs in Tanzania against the accountability for reasonableness framework. In addition to the demand for enhanced stakeholder involvement, publicity, and transparency, the study also calls for the institution of formal appeals, revision, and regulatory mechanisms in the future change of malaria treatment policies.

244.   **Mori AT, Robberstad B. Pharmacoeconomics and its implication on priority-setting for essential medicines in Tanzania: A systematic review** *BMC Medical Informatics and Decision Making*, (2012); 12 (1): art. no. 110 .

Background: Due to escalating treatment costs, pharmacoeconomic analysis has been assigned a key role in the quest for increased efficiency in resource allocation for drug therapies in high-income countries. The extent to which pharmacoeconomic analysis is employed in the same role in low-income countries is less well established. This systematic review identifies and briefly describes pharmacoeconomic studies which have been conducted in Tanzania and further assesses their influence in the selection of essential medicines. Methods. Pubmed, Embase, Cinahl and Cochrane databases were searched using economic evaluation, cost-effectiveness analysis, cost-benefit analysis AND Tanzania as search terms. We also scanned reference lists and searched in Google to identify other relevant articles. Only articles reporting full economic evaluations about drug therapies and vaccines conducted in Tanzania were included. The national essential medicine list and other relevant policy documents related to the identified articles were screened for information regarding the use of economic evaluation as a criterion for medicine selection. Results: Twelve pharmacoeconomic studies which met our inclusion criteria were identified. Seven

studies were on HIV/AIDS, malaria and diarrhoea, the three highest ranked diseases on the disease burden in Tanzania. Six studies were on preventive and treatment interventions targeting pregnant women and children under the age of five years. The national essential medicine list and the other identified policy documents do not state the use of economic evaluation as one of the criteria which has influenced the listing of the drugs. Conclusion: Country specific pharmacoeconomic analyses are too scarce and inconsistently used to have had a significant influence on the selection of essential medicines in Tanzania. More studies are required to fill the existing gap and to explore whether decision-makers have the ability to interpret and utilise pharmacoeconomic evidence. Relevant health authorities in Tanzania should also consider how to apply pharmacoeconomic analyses more consistently in the future priority-setting decisions for selection of essential medicines.

245.   **Moshi MJ, Mahunnah RL, Haule EE, & Mwangomo DT. A study of antimicrobial activity, acute toxicity and cytoprotective effect of a polyherbal extract in a rat ethanol-HCl gastric ulcer model. 2012.**

Background: The decoction of the aerial parts of Rhynchosia recinosa (A.Rich.) Bak. [Fabaceae] is used in combination with the stem barks of Ozoroa insignis Del. (Anacardiaceae), Maytenus senegalensis (Lam.) Excell. [Celastraceae] Entada abyssinica Steud. ex A.Rich [Fabaceae] and Lannea schimperi (Hochst.)Engl. [Anacardiaceae] as a traditional remedy for managing peptic ulcers. However, the safety and efficacy of this polyherbal preparation has not been evaluated. This study reports on the phytochemical profile and some biological activities of the individual plant extracts and a combination of extracts of the five plants. Methods A mixture of 80% ethanol extracts of R. recinosa, O. insignis, M. senegalensis, E. abyssinica and L. schimperi at doses of 100, 200, 400 and 800 mg/kg body wt were evaluated for ability to protect Sprague Dawley rats from gastric ulceration by an ethanol-HCl mixture. Cytoprotective effect was assessed by comparison with a negative control group given 1% tween 80 in normal saline and a positive control group given 40 mg/kg body wt pantoprazole.The individual extracts and their combinations were also tested for antibacterial activity against four Gram negative bacteria; Escherichia coli (ATCC 25922), Salmonella typhi (NCTC 8385), Vibrio cholerae (clinical isolate), and Klebsiella pneumoniae (clinical isolate) using the microdilution **method**: In addition the extracts were evaluated for brine shrimp toxicity and acute toxicity in mice. Phytochemical tests were done using standard methods to determine the presence of tannins, saponins, steroids, cardiac glycosides, flavonoids, alkaloids and terpenoids in the individual plant extracts and in the mixed extract of the five plants. **Results**: The combined ethanolic extracts of the 5 plants caused a dose-dependent protection against ethanol/HCl induced ulceration of rat gastric mucosa, reaching 81.7% mean protection as compared to 87.5% protection by 40 mg/kg body wt pantoprazole. Both the individual plant extracts and the mixed extracts of 5 plants exhibited weak to moderate antibacterial activity against four G-ve bacteria. Despite Ozoroa insignis being toxic to mice at doses above 1000 mg/kg body wt, the other plant extracts and the combined extract of the 5 plants were tolerated by mice up to 5000 mg/kg body wt. The brine shrimp test results showed the same pattern of toxicity with Ozoroa insignis being the most toxic (LC50 = 10. 63 μg/ml). Phytochemical tests showed that the combined extract of the five plants contained tannins, saponins, steroids, cardiac glycosides,

flavonoids and terpenoids. Flavonoids, tannins and terpenoids are known to have antioxidant activity. **Conclusion**: The combined extract of the five plants exhibited a dose-dependent protective activity in the rat ethanol-HCl gastric ulcer model. The extracts also exhibited weak antibacterial activity against four Gram negative bacteria and low acute toxicity in mice and brine shrimps. Although the results support claims by traditional healers who use a decoction of the five plants for treatment of peptic ulcers, more models of gastric ulceration and proper animal toxicity studies are needed to validate possible clinical use of the polyherbal extract. It is also evident that the doses of the crude extracts showing protection of the gastric mucosa are too large for realistic translation to direct clinical application, but further studies using bioassay guided fractionation are important to either identify more practical fractions or active compound/s.

246.   **Moshi MJ, Mbwambo ZH, Kayombo EJ, Kapingu M , Muze L, Ndunguru GT, & Mulokozi A. Promotion of community based commercial cultivation of herbal medicines and packaging of herbal nutritional supplements. 2012.**

The devastation resulting from immunodeficiency in HIV/AIDS patients predisposes patients to a multitude of opportunistic infections, ranging from bacterial, fungal, viral, and protozoa infections and malignancies such as Kaposi's sarcoma and non-Hodgikin's lymphomas. The availability of antiretroviral drugs (ARVs), which reduce viral load and help to restore the immune system, has given hope to those who can afford them. However, for the majority of people the availability of ARVs is a luxury that they can not afford. The only available option is to deal with the emerging opportunistic infections so as to reduce illness episodes. The availability of easily accessible and cheap drugs for the treatment of opportunistic infections would be of great relief to patients. Another important component in the management of HIV/AIDS patients is availability of adequate nutrition that ensures maintenance of good health and constant repair of the ailing immune system. The use of herbal medicines could contribute significantly towards the treatment of opportunistic infections and supply of nutritional supplements to cope with the devastation of immunodeficiency. It is generally acknowledged that traditional herbal medicinal preparations provide an easily accessible, and possibly cheap alternative therapy to a number of patients with various disease conditions (1). The search for potential herbal medicines that can be used for the treatment of HIV/AIDS is an option that has been considered by a number of researchers since the onset of the pandemic (2, 3). Apart from directly catering for the needs of the patients the plants could also serve as a means for generating income, and thus alleviate income poverty in line with aspirations of the Tanzania National Strategy for Growth and Reduction of Poverty (NSGRP). This project aimed to promote local cheap processing, packaging, and developing simple herbal preparations to add value to herbal medicines with therapeutic and nutritional potential, and in so doing enhance marketability of the products thus creating a source of income, and contribute to reduction of income poverty. This project targeted 3 plants *Hibiscus sabdariffa, Moringa oleifera*, and *Aloe vera*. These three plants are reputed for their medicinal and nutritional properties and are being suggested as valuable plants that can be used as a source for nutritional supplements, particularly for HIV/AIDS patients who would also derive the benefit of protection from opportunistic

infections.

247.   Moshi MJ, Mbwambo ZH, Kayombo EJ, Kapingu MC, Muze L, Ndunguru GT, & Mulokozi A .Promotion of community based commercial cultivation of herbal medicines and packaging of herbal nutritional supplements. 2012.

Background: The decoction of the aerial parts of Rhynchosia recinosa (A.Rich.) Bak. [Fabaceae] is used in combination with the stem barks of Ozoroa insignis Del. (Anacardiaceae), Maytenus senegalensis (Lam.) Excell. [Celastraceae] Entada abyssinica Steud. ex A.Rich [Fabaceae] and Lannea schimperi (Hochst.)Engl. [Anacardiaceae] as a traditional remedy for managing peptic ulcers. However, the safety and efficacy of this polyherbal preparation has not been evaluated. This study reports on the phytochemical profile and some biological activities of the individual plant extracts and a combination of extracts of the five plants. **Methods**: A mixture of 80% ethanol extracts of R. recinosa, O. insignis, M. senegalensis, E. abyssinica and L. schimperi at doses of 100, 200, 400 and 800 mg/kg body wt were evaluated for ability to protect Sprague Dawley rats from gastric ulceration by an ethanol-HCl mixture. Cytoprotective effect was assessed by comparison with a negative control group given 1% tween 80 in normal saline and a positive control group given 40 mg/kg body wt pantoprazole.The individual extracts and their combinations were also tested for antibacterial activity against four Gram negative bacteria; Escherichia coli (ATCC 25922), Salmonella typhi (NCTC 8385), Vibrio cholerae (clinical isolate), and Klebsiella pneumoniae (clinical isolate) using the microdilution method. In addition the extracts were evaluated for brine shrimp toxicity and acute toxicity in mice. Phytochemical tests were done using standard methods to determine the presence of tannins, saponins, steroids, cardiac glycosides, flavonoids, alkaloids and terpenoids in the individual plant extracts and in the mixed extract of the five plants**. Results**: The combined ethanolic extracts of the 5 plants caused a dose-dependent protection against ethanol/HCl induced ulceration of rat gastric mucosa, reaching 81.7% mean protection as compared to 87.5% protection by 40 mg/kg body wt pantoprazole. Both the individual plant extracts and the mixed extracts of 5 plants exhibited weak to moderate antibacterial activity against four G-ve bacteria. Despite Ozoroa insignis being toxic to mice at doses above 1000 mg/kg body wt, the other plant extracts and the combined extract of the 5 plants were tolerated by mice up to 5000 mg/kg body wt. The brine shrimp test results showed the same pattern of toxicity with Ozoroa insignis being the most toxic (LC50 = 10. 63 µg/ml). Phytochemical tests showed that the combined extract of the five plants contained tannins, saponins, steroids, cardiac glycosides, flavonoids and terpenoids. Flavonoids, tannins and terpenoids are known to have antioxidant activity. **Conclusion:** The combined extract of the five plants exhibited a dose-dependent protective activity in the rat ethanol-HCl gastric ulcer model. The extracts also exhibited weak antibacterial activity against four Gram negative bacteria and low acute toxicity in mice and brine shrimps. Although the results support claims by traditional healers who use a decoction of the five plants for treatment of peptic ulcers, more models of gastric ulceration and proper animal toxicity studies are needed to validate possible clinical use of the polyherbal extract. It is also evident that the doses of the crude extracts showing protection of

the gastric mucosa are too large for realistic translation to direct clinical application, but further studies using bioassay guided fractionation are important to either identify more practical fractions or active compound/s.

248. **Moshi MJ, Otieno DF, & Weisheit A. Ethnomedicine of the Kagera Region, north western Tanzania. Part 3: plants used in traditional medicine in Kikuku village, Muleba District.** *Journal of ethnobiology and ethnomedicine.***2012;** *8*(1):1-11.

Background: The Kagera region of north western Tanzania has a rich culture of traditional medicine use and practice. Traditional medicines are the mainstay of healthcare in this region and are known to support the management of many illnesses such as malaria, bacterial infections, epilepsy, gynecological problems and others. However, most of the plants being used have either not been documented or evaluated for safety and efficacy or both. This study, the sixth of an ongoing series, reports on the medicinal plants that are used at Kikuku village, Muleba District. **Methodology**: A semi-structured questionnaire was used to collect information on the common/local names of the plants, parts of the plants used, diseases treated, methods of preparing the herbal remedies, dosage of the remedies administered, frequency and duration of treatment and toxicity of the medicines. A literature review was carried out for information on the ethnomedical uses of the reported plants. **Results**: A total of 49 plant species belonging to 47 genera and 24 plant families were documented. The family Euphorbiaceae and Asteraceae had the highest representation. The plants are used for the treatment of skin conditions (10 plants; 20%), bacterial infections and wounds (14 plants; 28.6%), malaria (14 plants; 28.6%), gastrointestinal disorders (11 plants; 22.4%), gynecological problems including infertility (8 plants; 16.3%), hypertension (5 plants; 10.2%), viral infections (7 plants; 14.3%), chest problems (5 plants; 10.2%), diabetes (3 plants; 6.1%), cancer (2 plants; 4.1%), inflammatory conditions (arthritis, rheumatism), HIV and AIDS, and hernia each treated by 1 plant (3 plants in total; 6.1%). Information obtained from the literature indicate that 25 (51.0%) of the therapeutic claims are supported by laboratory results or have similar claims of ethnomedical use from other countries. **Conclusion**: Herbal remedies comprise an important and effective component of the healthcare system in Kikuku village with plants in the families Euphorbiaceae and Asteraceae comprising an important part of plants used in the indigenous healthcare management in the village. Malaria and bacterial infections dominate the list of diseases that are managed using traditional medicines.

249. **Moshi MJ, Otieno DF, & Weisheit A. Ethnomedicine of the Kagera Region, north western Tanzania. Part 3: plants used in traditional medicine in Kikuku village, Muleba District. J Ethnobiol Ethnomed. 2012; 8: 14.**

Background: The Kagera region of north western Tanzania has a rich culture of traditional medicine use and practice. Traditional medicines are the mainstay of healthcare in this region and are known to support the management of many illnesses such as malaria, bacterial infections, epilepsy, gynecological problems and others. However, most of the plants being used have either not been documented or evaluated for safety and efficacy or both. This study, the sixth of an ongoing series, reports on the medicinal plants that are used at Kikuku village,

Muleba District. **Methodology**: A semi-structured questionnaire was used to collect information on the common/local names of the plants, parts of the plants used, diseases treated, methods of preparing the herbal remedies, dosage of the remedies administered, frequency and duration of treatment and toxicity of the medicines. A literature review was carried out for information on the ethnomedical uses of the reported plants. **Results**: A total of 49 plant species belonging to 47 genera and 24 plant families were documented. The family Euphorbiaceae and Asteraceae had the highest representation. The plants are used for the treatment of skin conditions (10 plants; 20%), bacterial infections and wounds (14 plants; 28.6%), malaria (14 plants; 28.6%), gastrointestinal disorders (11 plants; 22.4%), gynecological problems including infertility (8 plants;16.3%), hypertension (5 plants; 10.2%), viral infections (7 plants; 14.3%), chest problems (5 plants; 10.2%), diabetes (3 plants; 6.1%), cancer (2 plants; 4.1%), inflammatory conditions (arthritis, rheumatism), HIV and AIDS, and herniaeach treated by 1 plant (3 plants in total; 6.1%). Information obtained from the literature indicate that 25 (51.0%) of the therapeutic claims are supported by laboratory results or have similar claims of ethnomedical use from other countries. **Conclusion**: Herbal remedies comprise an important and effective component of the healthcare system in Kikuku village with plants in the families Euphorbiaceae and Asteraceae comprising an important part of plants used in the indigenous healthcare management in the village. Malaria and bacterial infections dominate the list of diseases that are managed using traditional medicines.

250.   **Moshiro R. Risk factors associated with injuries among children below 18 years attending health facilities in dar es salaam, Tanzania. Master of Medicine (Pediatrics and Child Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background Injuries are the leading cause of death and disability among children and youth worldwide. Approximately 950,000 children die every year as a result of injuries and violence. WHO identifies burns, falls, Road Traffic Injuries (RTIs), poisoning and drowning as the major causes of injuries in Children. In Tanzania 2.5% and 4.3% person were reported to have been injured during the previous one year in urban and rural areas respectively. Among these, 37% were below 14 years. The risk factors for injuries that have been documented elsewhere include socioeconomic status, maternal education, maternal age, marital status, number of children in the house, and overcrowding. However, there is limited data on factors associated with injuries among children in our setting. **Objective** To determine risk factors associated with injuries among children below 18 years seen at various health facilities in Dar es Salaam, Tanzania **Materials and Methods** A hospital based case control study was conducted from August 2011 to October 2011 in six selected health facilities in Dar es Salaam. Data were collected using a structured questionnaire. Cases were children below 18 years who had suffered injuries. Controls were children below 18 years who had visited the same health facilities with other problems apart from injury. Recruitment was done at the outpatient department. Parents/guardians of selected cases and controls were interviewed by trained research assistants. Data analysis was performed using SPSS version 17. Univariate, and multivariate analyses were done for both child and parental/guardian factors. Logistic regression models were built to identify independent determinants of injuries. Both unadjusted and adjusted odds ratio with corresponding 95% confidence intervals were reported. All the analyses were two-tailed and significance was set at 5%

level. **Results** A total of 492 cases and 492 controls were included in the study. Younger parents/guardians {Adjusted odds ratio (AOR)= 0.95; 95% CI (0.92-0.97)}, more than six people in the same house {AOR= 1.8; 95% CI (1.3-2.6)}, more than three children in the house {AOR= 1.6; 95% CI (1.1-2.2)}, absence of parent/guardian at time of injury occurrence {AOR= 1.6; 95% CI (1.1-2.3)} middle {AOR=1.5; 95%CI (1.0-2.1)} and low socio-economic status {AOR= 1.6; 95% CI (1.1–2.4)} were independent risk factors for injury. Falls (32%), burns (26%), Road Traffic Injuries (14%) and cuts (10%) were the major types of injuries identified. More than two thirds of these injuries occurred at home. **Conclusion and Recommendations** Inadequate supervision, overcrowding, having more than 3 children in the house, lower socio-economic status and low maternal age were significant risk factors. Falls, burns, RTIs and cuts were the main types of injuries in Dar es Salaam. Local programmes for injury prevention need to take into account improved household, child supervision and other identified risk factors to be able to curb the childhood injuries. Schools should also teach students on road safety. Further community studies are needed to identify magnitude of injuries for proper planning of interventions.

251.   **Moyo SJ, Steinbakk M, Aboud S, Mkopi N, Kasubi M, Blomberg B,Manji K, Lyamuya EF, Maselle S, & Langeland N, Penicillin resistance and serotype distribution of Streptococcus pneumoniae in nasopharyngeal carrier children under 5 years of age in Dar es Salaam, Tanzania.** *Journal of medical microbiology*.**2012;** *61*(**7**): **952-959.**

This study aimed to determine the magnitude of nasopharyngeal carriage, antimicrobial resistance and serotype distribution of *Streptococcus pneumoniae* in healthy children under 5 years of age in Tanzania. Nasopharyngeal swabs were obtained from 300 healthy children attending a child health clinic at Muhimbili National Hospital in Dar es Salaam, Tanzania. *S. pneumoniae* was isolated and identified using conventional methods. Antimicrobial susceptibility testing was performed using the Kirby–Bauer disc diffusion method. Penicillin MICs and serotypes were determined by an agar gradient diffusion method and the Quellung reaction, respectively. A total of 105 samples (35.0%) were positive for *S. pneumoniae* and 115 serotypes were detected (ten specimens yielded two serotypes each). Overall, 78 of 115 isolates (67.8%) were penicillin-non-susceptible pneumococci (PNSP). The resistance levels of *S. pneumoniae* to trimethoprim–sulfamethoxazole, tetracycline, erythromycin, chloramphenicol and ceftriaxone were 82.6, 10.4, 6.0, 3.5 and 0.0%, respectively. Multidrug resistance was detected in 19 isolates (16.5%). The most prevalent serotypes were 19F (*n=*25, 21.7%), 6B (*n=*15, 13.0%), 9V (*n=*14, 12.2%) and 13 (*n=*14, 12.2%). Of the 64 pneumococcal isolates potentially covered by the seven-valent pneumococcal conjugate vaccine (PCV7), 44 (68.8%) were PNSP. A high prevalence of PNSP, common pneumococcal serotypes circulating worldwide, was found, and many of the resistant pneumococci strains are covered by the PCV7. These findings indicate that the carriage rate of such resistant strains could be influenced by an appropriate vaccination programme in the study setting and by reinforcing regulations on the rational use of antimicrobial agents.

252.   **Mrema EJ, Rubino FM, Brambilla G, Moretto A, Tsatsakis AM, Colosio C. Persistent organochlorinated pesticides and mechanisms of their toxicity** *Toxicology***(2012).**

Persistent organic pollutants comprised of organic chemicals like polychlorinated biphenyls,

dibenzo-p-dioxins, dibenzofurans and organochlorinated pesticides which have many characteristics in common. Once released in the environment they resist physical, biological, chemical and photochemical breakdown processes and thus persist in the environment. They are subject to long transboundary air pollution transport. They accumulate in the food chain due to their lipophilicity, bioaccumulation and biomagnification properties. Human exposure occurs through inhalation of air, ingestion of food and skin contact. Because most of them bioaccumulate and remain preferentially in fat, their long-term effects are still a matter of public health concern. They are condemned for health adverse effects such as cancer, reproductive defects, neurobehavioral abnormalities, endocrine and immunological toxicity. These effects can be elicited via a number of mechanisms among others include disruption of endocrine system, oxidation stress and epigenetic. However most of the mechanisms are not clear thus a number of studies are ongoing trying to elucidate them. In this review, the underlying possible mechanisms of action and their possible roles in adverse developmental and reproductive processes are discussed and where possible a linkage is made to some existing epidemiological data. Both genomic and nongenomic pathways are used to describe these effects. Understanding of these mechanisms will enable development of strategies to protect the public by reducing these adverse effects. This review is limited to persistent organochlorinated pesticides (OCPs) such as dichlorodiphenyltrichloroethane (DDT) and its metabolites, hexachlorobenzene (HCB), beta-hexachlorocyclohexane (β-HCH) and endosulfan.

253.   **Mrita F. Short-term outcome of patients with closed comminuted femoral shaft fracture treated with locking intramedullary sign nail at muhimbili orthopaedic institute (moi). Master of Medicine in Orthopaedics and Traumatology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Comminuted femoral shaft fractures are complex fracture to treat because of increased risk of limb length discrepancies and malrotation deformities. Currently the interlocking intramedullary nail is recommended treatment for comminuted femoral shaft fractures by many international centers. The SIGN nail program commenced at MOI in October 2008. In this program, unstable comminuted femoral shaft fractures are treated by using interlocking intramedullary SIGN nail. Although anecdotal experience has been positive, the outcome of treatment has not been scientifically evaluated **Objectives** :We evaluated the short-term outcome of patients with closed comminuted femoral shaft fracture treated with locking intramedullary nail at MOI-2011 **Methodolgy**: A cohort study was done on adult patients with closed comminuted femoral shaft fractures admitted at MOI and being treated by interlocking intramedullary SIGN nail. Ninety one patients met our study inclusion criteria but 11 were lost followup, so we reviewed 80 patients who completed follow ups. A researcher used a structured questionnaire to interview the participants. These patients were operated by either antegrade or retrograde SIGN nail. Immediately post operatively control radiographs, the lowerlimb length and malrotation deformity were assessed. Then each patient was followed up for a minimum of 18 weeks post operatively. In followup visits, state of the wound, limb length discrepancy, malrotation deformity, range of motion of the knee joint and callus formation were assessed. The obtained data were analyzed by SPSS version 16. **Results** Comminuted femoral shaft fracture accounted for 20.3% of all adult femoral shaft fractures admitted at MOI. Deep wound infection occurred in 2.5%. Shortening of 2-

3cm was seen in 3.8% of patients. No patient has shortening of more than 3cm. External rotation deformity of more than 20 degrees occurred in 6.3%. Internal rotation deformity of more than 15 degrees was seen in 7.9%. Knee flexion of less than 90 degree was encountered in 7.5% of patients. By 12th week 68.8% of patients had callus formation and 95% of patients had union by 18th week. **Conclusion** SIGN nail appears to be an effective treatment for comminuted femoral shaft fractures in developing countries where image intensifiers and fracture tables are not readily available. They have excellent to good outcomes in rate of callus formation, limb length and limb alignment outcomes.

254.   Mselle LT, Evjen-Olsen B, Moland KM, Polit PC, Mvungi A & Kohi TW. (2012). "Hoping for a Normal Life Again": Reintegration After Fistula Repair in Rural Tanzania. *J Obstet Gynaecol Can*,**2012; 34(10): 927-938.**

Objective: To explore women's expectations, worries, and hopes related to returning to their family and community after fistula repair. **Methods:** We used a concurrent mixed methods design with a hospital survey and qualitative interviews. One hundred fifty-one women completed a questionnaire, eight were interviewed in hospital after fistula repair, and one woman was followed up at home for six months during the reintegration phase. **Results:** Women were concerned about where they could live and about not being accepted by their husbands and in-laws. While 51% feared that their husbands would not accept them despite full recovery, 53% said their parents would accept them. In the qualitative study women wished to live with their parents, whereas almost one half (49.7%) of the women in the quantitative study, who had lived with fistula for a shorter time, wished to live with their husbands. All women hoped to have children in the future, although many women, especially those with no children, were worried about whether they could bear children in the future. Despite fears related to economic survival and social acceptance, women were optimistic about regaining a normal social life. **Conclusion:** Women's expectations of going home after fistula repair are linked to their history of living with obstetric fistula. For women who have lived with a fistula for many years, reintegration involves re-establishing an identity that is clean and respected. To facilitate this transition, fistula repair needs to be accompanied by psychological and social rehabilitation and assistance in returning to reproductive capabilities.

255.   Mtenzi J. Drug cost implications of treating hiv/ aids patients with mental illness at Muhimbili national hospital, Tanzania.   Master of Science in Pharmaceutical Management Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam*.
Background Tanzanian patients suffering with HIV/AIDS or mental illness are treated free of charge as per the Ministry of Health and Social welfare (MOHSW) cost sharing policy of 1993. The exemption of cost sharing for HIV/AIDS patients put a severe financial burden on the government to provide free treatment and care to an estimated 1.8 million patients. Although there are many checks and balances to quantify the national drug use and expenditure of antiretroviral (ARV) and TB drugs; there is no parallel system of quantifying the expenditure associated with the other drugs used to manage HIV related co morbidities such as mental illness which is also exempted. **Objective** The study was conducted to

determine drug cost implications associated with the treatment of HIV patients with mental illness as compared to those with HIV alone. **Methodology** Prescription data was retrieved from the MNH JEEVA electronic data base for all the attendees of MHN HIV Clinic from January 2008 to December 2010.The drug cost prices were obtained from the Medical Store Department (MSD) and the July 2010 government subsidised price list was used. One United States dollar (US$) was set to be equivalent to 1,600 Tsh. Retrieved Data was exported into Excel and data analysed using SPSS and R- Statistical Computing Software. **Results** A total of 1913 out of 1987 (96.7%) patient's data were analyzed. The majority of the clinic attendees were from Kinondoni district Dar es Salaam (51.2%). The mean age for the patient was 43.2 (range 18-85 years). The majority of patients were female and married, 69.7% and 51.3%, respectively. First visit to emergency medicine and psychiatry departments contributed 41% and 25% respectively of previously undiagnosed HIV infected persons. The total drug cost for the study period was US$ 906,450.5 (Tsh1, 450,320,800). The average drug expenditure cost per person per year (PPY) was US$ 204. 1 (Tsh 326,540.7). The majority of patients were on first line ARV regimens (98.4%) and the total cost for antiretrovirals (ARVs) was US$ 804,449.5 (Tsh 1,287,119,205). The cost for PPY for patients on ARV alone was US$ 197.0 (Tsh 315,261.9). The total cost for mental illness drugs for the study period was US$ 6,943.5 (Tsh 11,109,629) with Amitriptyline being the most commonly prescribed mental illness drug at 55.9%. The proportion of attendees that were prescribed drugs for the management of mental illness in the study period was 16.5%, with 8.5% of these being for the management of severe mental illness. Patients with HIV and mental illness had a significantly higher mean drug expenditure cost per person years of US$ 278. 6 (Tsh 445,717.5), compared with patients with HIV alone whose mean cost was US$ 226. 7 (Tsh 362,664.6/=) [p-value <0.0001]. There was no significant difference in the number of HIV patients with mental illness on first line ARV regimens compared to second line regimens. Switching HIV/ mental illness patients onto second line ARV regimens significantly increased the drug cost per person years from US$ 198.5 to US$ 1,108.0 (Tsh 317,657.8 to 1,772,801.6 [p-value <0.0001]. **Conclusions and Recommendation** Mental illness develops in a significant proportion of HIV patients at MNH. Drugs used to manage co- morbid HIV/mentally ill patients have a significant impact on the cost of treating these patients, making this group of HIV patients a more expensive group with respect to drug costs. The high contribution of first case psychiatry presentation in identifying HIV infected persons strongly advocates that psychiatric care should be part and parcel of routine HIV care and treatment programs at Muhimbili National Hospital (MNH).

256.   **Mtonga R. Age and gender distribution of road car crash mortalities between June 2007 and November 2008 in Lusaka, Zambia. Injury prevention. 2012; 18(1): A212-A212.**

Background Road Car Crashes (RCC) are the leading cause of injury-related deaths in Lusaka. From a total of 614 injury-related deaths during the study, 166(27%) with 145(87%) males and 21(13%) were due to RCC. Predominantly children and young adults were affected at 116(87%). **Objective** To Audit Road Car Crash mortality between June 2007 and November 2008 captured at the Lusaka Death Registry. **Methods** This retrospective study, done at the Lusaka City Death Registry, employed Certificates of Deaths, Burial Permits and

Postmortem record involving RCC in Lusaka. **Results** A total of 166 made up 145 Males and 21 Females RCC deaths occurred. The 20–35 year bracket contributed 71(43%) with 26(16%) deaths in seniors 65 years of age or older. Adults between 36 and 50 years brought in 32(19%) deaths, 24(14%) happened in school going children between 7 and 19 years of age while 21(13%) involved children below the age of 6 years. Only 8(5%) deaths happened in the 50–65 years category. **Contribution to the Field** Understanding the age and gender distribution of RCC may help in making interventions to reduce RCC, a preventable cause of mortality in Lusaka. The children, young adults and elderly need to be targeted reduce the RCC carnage in the city. Mortuary data can help monitor, evaluate and inform policies.

257. **Mtowa A. Factors contributing to delay in seeking referral treatment among breast cancer patients at ocean road cancer institute and muhimbili national hospital dar es salaam, Tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Cancer is reported to be the second-leading cause of death and disability in the world. Breast cancer is the second leading cause of cancer mortality among women in Tanzania. Delay in seeking treatment contributes in breast cancer patients' presentation at the tertiary hospitals when cancer is at an advanced stage and leads to poor prognosis. The general objective of this study was to explore factors which contribute to delay in seeking referral for cancer treatment among breast cancer patients at the Ocean Road Cancer Institute and Muhimbili National Hospitals. **Methods:** This was a cross sectional study, done at the two tertiary hospitals; Ocean Road Cancer Institute and Muhimbili National Hospital in Dar es Salaam. All 142 breast cancer patients who attended clinics at the tertiary hospitals during the study period were included. A questionnaire was used to interview the respondents. Delay was measured in terms of the time from the diagnosis to the time of seeking treatment at the tertiary hospitals. Cross tabulations were done and Chi-square was used to compare proportions with $p \leq 0.05$ considered to be significant, Tables were used to summarize the findings. **Results:** In total, 142 study participants were included with a mean age was 53 years and 82% were married, 30 employed. About 41% of the study participants delayed for more than three months, 48% reported at the tertiary hospitals when cancer is at stage III. Main reasons for delay in seeking treatment were; cost (34%), distance to ORCI/MNH 15%, receiving treatment at the traditional healers (37%) and misinformation about treatment offered at ORCI/MNH (14%). Martital status were signigicantly associated with delay in seeking health care (**OR=0.35 and 95%CI (0.15 , 081**). **Conclusions**: Cost, use of traditional healers and distance to tertiary hospitals were associated with breast cancer patient delay in seeking care. This study provides very imperative information which will assist the Ministry of Health and Social Welfare to design strategies that will enable breast cancer patients to present early for treatment after being diagnosed.

258. **Mubyazi GM, Mwisongo AJ, Makundi EA, Pallangyo K, Malebo HM, Mshana JM,Senkoro KP,Kisinza WN,Ipuge Y,Hiza P,Magesa SM,Kitua AY, & Malecela MN. Analysis of Cost Impact of HIV/AIDS on Health Service Provision in Nine Regions, Tanzania: Methodological Challenges and Lessons for Policy.** *Rwanda Journal of Health Sciences*.**2012;** *1*(**1): 8-20**.

Background: Tanzania is one of African countries that have since 1983 been facing the human immuno-deficiency virus-acquired immune-deficiency syndrome (HIV-AIDS) pandemic, thereby, drawing attention to the general public, the governmental and non-governmental organizations and government's partner development agencies. Due to few socio-economic studies done so far to evaluate the impact this pandemic, a study was designed and undertaken in 2001 to analyse how this disease had impacted on health service provision in Tanzania from a cost perspective.**Methods**: The study involved a review of health service management information documents at selected health facilities in nine regions within mainland Tanzania, interviews with health service workers (HWs) at selected health facilities and health managers at district and regional levels as well as focus group discussions with people living with HIV/AIDS (PLWA).**Findings**: We noted that on average, HIV/AIDS caused 72% of all the deaths recorded at the study hospitals. The health management information system (HMIS) missed some data in relation to HIV/AIDS services, including the costs of such services which limited the investigators' ability to determine the actual costs impact. Using their experience, health managers and HWs reported substantial amounts of funds, labour time, supplies and other resources to have been spent on HIV/AIDS preventive and curative services. The frontline HWs reported to face a problem of identifying the PLWA among those who presented multiple illness conditions at HF levels which means sometimes the services given to such people could not be separated for easy costing from services delivered to other categories of the patients. Such respondents and their superiors (i.e. Health managers) testified that PLWA were being screened and receiving treatment. HWs were concerned with spending much time on counselling PLWA, attending home-based care, sick-leaves and funeral ceremonies either after their relatives or co-staff have died of AIDS, lowering time for delivering services to other patients. HWs together with their superiors at district and regional levels reported increasing shortages of essential supplies, office-working space and other facilities at HF levels, although actual costs of such items were not documented.**Conclusion**: The cost impact of HIV/AIDS to the health sector is undoubtedly high even though it is not easy to establish the cost of each service delivered to PLWA in Tanzania. As adopted in the present study, designers of methods for analysing impacts of diseases like this should consider a mixture of both quantitative and qualitative techniques. Meanwhile concerted measures are needed to improve health service record keeping so as enhancing data usability for research and rational management decision-making purposes.

259. **Mubyazi GM, Mwisongo AJ, Makundi EA, Pallangyo K, Malebo HM, Mshana JM,** *Senkoro KP, Kisinza WN, Ipuge Y, Hiza P, Magesa SM, Kitu AY,* **& Malecela MN. Analysis of Cost Impact of HIV/AIDS on Health Service Provision in Nine Regions, Tanzania: Methodological Challenges and Lessons for Policy.** *Rwanda Journal of Health Sciences*.**2012;** *1*(1): 8-20.

Background: Tanzania is one of African countries that have since 1983 been facing the human immuno-deficiency virus-acquired immune-deficiency syndrome (HIV-AIDS) pandemic, thereby, drawing attention to the general public, the governmental and non-governmental organizations and government's partner development agencies. Due to few socio-economic studies done so far to evaluate the impact this pandemic, a study was

designed and undertaken in 2001 to analyse how this disease had impacted on health service provision in Tanzania from a cost perspective. **Methods**: The study involved a review of health service management information documents at selected health facilities in nine regions within mainland Tanzania, interviews with health service workers (HWs) at selected health facilities and health managers at district and regional levels as well as focus group discussions with people living with HIV/AIDS (PLWA). **Findings**: We noted that on average, HIV/AIDS caused 72% of all the deaths recorded at the study hospitals. The health management information system (HMIS) missed some data in relation to HIV/AIDS services, including the costs of such services which limited the investigators' ability to determine the actual costs impact. Using their experience, health managers and HWs reported substantial amounts of funds, labour time, supplies and other resources to have been spent on HIV/AIDS preventive and curative services. The frontline HWs reported to face a problem of identifying the PLWA among those who presented multiple illness conditions at HF levels which means sometimes the services given to such people could not be separated for easy costing from services delivered to other categories of the patients. Such respondents and their superiors (i.e. Health managers) testified that PLWA were being screened and receiving treatment. HWs were concerned with spending much time on counselling PLWA, attending home-based care, sick-leaves and funeral ceremonies either after their relatives or co-staff have died of AIDS, lowering time for delivering services to other patients. HWs together with their superiors at district and regional levels reported increasing shortages of essential supplies, office-working space and other facilities at HF levels, although actual costs of such items were not documented. **Conclusion**: The cost impact of HIV/AIDS to the health sector is undoubtedly high even though it is not easy to establish the cost of each service delivered to PLWA in Tanzania. As adopted in the present study, designers of methods for analysing impacts of diseases like this should consider a mixture of both quantitative and qualitative techniques. Meanwhile concerted measures are needed to improve health service record keeping so as enhancing data usability for research and rational management decision-making purposes.

260.   **Mugusi S, Ngaimisi E, Janabi M, Minzi O, Bakari M, Riedel KD, Burhenne J, Lindquist L, Mugusi F, Sandstrom E, & Aklillu E. Liver enzyme abnormalities and associated risk factors in HIV patients on efavirenz-based HAART with or without tuberculosis co-infection in Tanzania.** *PloS one*.**2012;** *7*(**7**): **e40180.**

Objectives: To investigate the timing, incidence, clinical presentation, pharmacokinetics and pharmacogenetic predictors for antiretroviral and anti-tuberculosis drug induced liver injury (DILI) in HIV patients with or without TB co-infection. Methods and Findings: A total of 473 treatment naïve HIV patients (253 HIV only and 220 with HIV-TB co-infection) were enrolled prospectively. Plasma efavirenz concentration and *CYP2B6*6*, *CYP3A5*3*, *6* and *7*, ABCB1 3435C/T and SLCO1B1 genotypes were determined. Demographic, clinical and laboratory data were collected at baseline and up to 48 weeks of antiretroviral therapy. DILI case definition was according to Council for International Organizations of Medical Sciences (CIOMS). Incidence of DILI and identification of predictors was evaluated using Cox Proportional Hazards Model. The overall incidence of DILI was 7.8% (8.3 per 1000 person-week), being non-significantly higher among patients receiving concomitant anti-TB and

HAART (10.0%, 10.7per 1000 person-week) than those receiving HAART alone (5.9%, 6.3 per 1000 person-week). Frequency of *CYP2B6*6* allele (p = 0.03) and *CYP2B6*6/*6* genotype (p = 0.06) was significantly higher in patients with DILI than those without. Multivariate cox regression model indicated that *CYP2B6*6/*6* genotype and anti-HCV IgG antibody positive as significant predictors of DILI. Median time to DILI was 2 weeks after HAART initiation and no DILI onset was observed after 12 weeks. No severe DILI was seen and the gain in CD4 was similar in patients with or without DILI. **Conclusions:** Antiretroviral and anti-tuberculosis DILI does occur in our setting, presenting early following HAART initiation. DILI seen is mild, transient and may not require treatment interruption. There is good tolerance to HAART and anti-TB with similar immunological outcomes. Genetic make-up mainly *CYP2B6* genotype influences the development of efavirenz based HAART liver injury in Tanzanians.

261.   **Mugusi SF, Ngaimisi E, Janabi MY, Mugusi FM, Minzi OM, Sasi PG, & Sandstrom EG. Risk factors for mortality among HIV-positive patients with and without active tuberculosis in Dar es Salaam, Tanzania.** *Antiviral therapy*.**2012;***17***(2): 265.**

Background: The aim of this study was to describe risk factors for mortality and clinical characteristics of HIV-infected patients with and without tuberculosis (TB) coinfection. **Methods**: A cohort of HIV-infected patients with CD4$^+$ T-cell counts of ≤200 cells/μl was recruited, consisting of 255 HIV-infected patients without active TB and 231 patients with active TB. All received a well-supervised treatment with an efavirenz-based HAART, and those coinfected with TB received appropriate anti-TB treatment. They were followed up for 48 weeks after HAART initiation. **Results**: Common presenting symptoms in HIV-only patients were fever (36.5%), headache (34.5%), skin rash (34.5%) and weight loss (32%), while in HIV-TB patients the symptoms were weight loss (58%), cough (57.6%), night sweats (44.6%) and fever (34.2%). HIV-TB patients had significantly lower body mass index, Karnofsky scores and haemoglobin levels compared to those infected with HIV only, despite similar baseline CD4$^+$ T-cell counts. Overall, 12 (4.7%) HIV patients developed TB and 7 (3%) HIV-TB patients had worsening of their TB symptoms during the study period. Mortality was similar in the two groups, being 10.9% (16 deaths per 100 person years) and 11.3% (17 deaths per 100 person years) in HIV-only and HIV-TB patients, respectively. Overall, more males (13.1%) died compared to females (9.6%). Predictors of mortality were presence of oral candidiasis, Kaposi's sarcoma, low Karnofsky score, and low baseline white blood cell and CD4$^+$ T-cell counts. **Conclusions**: The outcomes following well-supervised treatment of HIV-TB patients are similar to those in patients with HIV alone. Predictors of mortality were those of advanced disease.

262.   **Muhihi A, Njelekela M, Mpembeni R, Masesa Z, Kitamori K, Mori M & Yamori Y. Physical activity and cardiovascular disease risk factors among young and middleaged men in urban Mwanza, Tanzania.** *Pan African Medical Journal*.**2012;** *11* **:(1).**

Background: Cardiovascular diseases (CVD) risk factors are increasing at an unprecedented

rate in developing countries. However, fewer studies have evaluated the role of physical activity in preventing CVD in these countries. We assessed level physical activity and its relationship with CVD risk factors among young and middle aged men in a fast growing city of Mwanza in Tanzania. **Methods**: Physical activity was assessed among 97 healthy men aged 20-50years using Sub-Saharan Africa Activity Questionnaire. An updated compendium of physical activity was used to code the metabolic equivalent. Energy expenditure was calculated using Harris Benedict equation. Anthropometric measurements, blood pressure, fasting blood glucose and serum lipids were also measured. **Results**: The mean energy expenditure in this population was $6,466 \pm 252$ kcal/week. More than half (53.6%) of the participants had energy expenditure of H4,000 kcal/week. Only three (3.1%) had energy expenditure below the recommended 1,000 kcal/week. Except for hypertension, prevalence of CVD risk factors was low in this population; hypertension 23.7%, low HDLcholesterol 10.3%, high LDL-cholesterol 9.3% and obesity 4.1%. Physical activity energy expenditure had an inversely relationship with waist to hip ratio, systolic blood pressure, heart rate, total cholesterol, HDL-cholesterol, LDL-cholesterol, triglycerides and fasting blood glucose. **Conclusion:** Physical activity energy expenditure was high in this population and was inversely correlated with CVD risk factors. Physical activity may play an important role in the prevention of CVD in this urban population of young and middle aged men.

263.   **Muhogora WE, Trianni A, Toso F, Devetti, A, Padovani R, Msaki P, Kazema R. Comparison of image quality and patient dose for chest x-ray examinations on conventional and low cost comp(2012) uted radiography systems** *Radiography*, **18 (4): 275-278.**

Purpose: The aims of this study were to assess if clinical chest radiographs taken at two computed radiography (CR) facilities fulfill standard quality criteria on conventional display monitor and the status of patient doses. Methods: Twenty-five adult patients were x-rayed at 102-109 kVp using Fuji type C image plates and low cost Philips PCR digitizer. Another group of 25 patients were x-rayed at 120 kVp using CRMD 4.0 image plates and conventional Agfa 75 CR digitizer. All 50 radiographs were independently assessed by four radiologists on conventional display monitor (model HP M70) with image software using six standard quality criteria. Entrance surface air kerma (ESAK) was determined using the measured incident air kerma values and exposure parameters. Results: The results show that the differences in visualization of anatomical structure in terms of image quality criteria were comparable (p > 0.05), with the exception of the visualisation of intervertebral disc spaces. However, the ESAK values for Philips PCR were higher than those for Agfa CR 75 (p < 0.001). Conclusion: Images from a low cost CR system can display anatomic details comparably to conventional CR system but at the cost of higher radiation dose. Optimisation of variables that effect patient dose is desirable when using low cost CR systems.

264.   **Munisi D. Soil-transmitted helminths infections, malnutrition and anaemia among primary school children in same district. Master of Science in Parasitology and Medical Entomology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Introduction: Soil-transmitted helminths (STHs) are major public health problems in several tropical and subtropical developing countries with poor socio-economic status. In Tanzania published data suggest that all regions have some level of infection with some areas having prevalence of up to 100%. Children are found to have the highest prevalence and infection intensities and are also very vulnerable to the effects of worm infection which includes nutritional deficiencies which aggravate malnutrition and worsening the rates of anaemia. Prior to the implementation of any control programme, WHO recommends a baseline survey in school children to determine the prevalence and intensity of infections as governments need to target treatment appropriately, based on reliable and up-to-date information on the geographical distribution of infection . Currently there are no data on the extent of these problems in Same district. Therefore this study was designed to determine the prevalence and intensity of STH infections, malnutrition and anaemia among priamary school children in Same district **Objective:** This study aimed at determining the prevalence and intensity of STH infections, malnutridl and anaemia among primary school children in Same district. **Materials and Methods:** A descriptive cross-sectional study was carried out in Same district. A stratified multistage cluster sampling was applied to obtain 10 schools for the study. A minimum of 61 children were sampled from each school. A total of 579 school children were recruited. Stool specimens were obtained from 549 children. Kato-katz technique was used to determine status and intensity of STH infection. Body weight and height were determined by using a weighing scale and height pole respectively. Anthropometric measurements were analyzed using z- scores of height-for-age and BMI-for-age (BMIA) indices. Hemoglobin levels were determined using HemoCue photometer. Data analysis was done using SPSS software version13. Ethical clearance was obtained from the MUHAS Ethical Review Board and permission to conduct the research was obtained from the district authorities. **Results:** The overall prevalence of STH was found to be 0.9% (5/549). The prevalence of light and moderate intensity infections were 0.5% (3/549) and 0.4% (2/549) respectively. The prevalence of stunting was 42.3% with 11.1% being severely stunted. Prevalence of stunting was more in male (48.6%) than in female (37.8%) (P=0.015). Pupils in the upland plateau zone were more stunted than children in the middle plateau zone and lowlands zone with prevalence of 48.4%, 38.6% and 38.5% respectively (P=0.029). The overall prevalence of thinness was 11.7%. The prevalence of thinness was highest in the lowlands zone (15.8%) compared to the middle and upland plateau zone 14.6% and 5.9% respectively (P=0.013). The mean Hb level was 13.4g/dl [95%CI (13.2g/dl, 13.5g/dl)]. The overall prevalence of anaemia was 3.1%. There was no difference in the prevalence of anaemia by age-group, sex and topographical zone. **Conclusion:** This study revealed that STHs is not a problem in Same district. The mass chemotherapy conducted by NSSCP in 2008, and the ongoing provision of antihelminthic drugs to children under the age of five has achieved to maintain the prevalence of STH in the district at low levels. However malnutrition has been observed to be a problem in the district with nearly half of the children being stunted. **Recommendations:** With the observed low prevalence of STH in Same district, selective treatment is recommended as a chemotherapeutic method of controlling STH in the district. Studies that are going to establish the cause of the observed prevalence of malnutrition are also recommended.

265.   Munseri P, Kroidl A, Nilsson C, Moshiro C, Aboud S, Joachim A, &

Geldmacher C, Aris E, Buma D, Lyamuya E, Gotch F, Godoy-Ramirez K, Pallangyo K, Maboko L, MMarovich M, Robb M, Hoelscher M, Janabi M, Mann P, Joseph S, Mfinanga S, Stoehr W,Mhalu, Wahren B, Biberfeld G, McCormack S, Sandstrom E, & Bakari M.
Priming with a "simplified regimen" of HIV-1 DNA vaccine is as good as a "standard regimen" when boosted with heterologous HIV-1 MVA vaccine. *Retrovirology*.2012; *9*(Suppl 2): P108.

Background : Intradermal priming with DNA prior to MVA boosts gives strong and broad immunogenicity, however that required 5 injections at each immunization. A higher concentration of DNA might allow a simpler administration. **Methods:** This double blind, placebo-controlled trial, enrolled 120 (12 placebo) HIV-uninfected volunteers, in Dar es Salaam and Mbeya. Two pools of DNA plasmids were used (pool1 EnvABC + RevB, pool2 GagAB + RTB) boosted with MVA CMDR EnvE, GagA, PolA. Volunteers were randomized in three groups of 40, primed with either two injections of 300ug, one in each arm, (total 600ug) of DNA with combined plasmids (group IA) or two injections of 300ug with one pool in each arm (total 600ug) of DNA (group IIA) "simplified regimens" or five injections, 2 (pool1) and 3 (pool2) injections in the right and left arm respectively, (total 1000ug) of DNA (IIIA) "standard regimen". DNA/Placebo priming was administered by a needlefree (Biojector) device intradermally at weeks 0, 4 and 12. All volunteers were boosted intramuscularly with 10 pfu of recombinant MVA/placebo at weeks 30 and 46. The primary end point was the number of ELISpot responders to Gag and Env, 2 weeks post the last vaccination. **Results:**There were no safety concerns. The response rate to Gag and/or Env was 27/32 (84%) in group IA vs 31/33 (94%) in group IIA (p=0.26). The response rate to Gag and/or Env when comparing the 'simplified regimens' vs 'standard' regimen was 58/65 (89%) vs 32/32 (100%) p=0.09. In responders the median magnitude (IQR) response to Gag was 165 (100,365) SFC/million PBMC vs 210 (120,320), p=0.46 while the magnitude for Env was 150 (92,225) vs 110 (80,160) p=0.17 for the 'simplified' vs 'standard' regimens. **Conclusion:** The simplified HIV-1 DNA regimens primed as well as the standard regimen for cellular immune responses following boosting with with MVA**.**

266.   **Mushashu U. Prevalence of malaria infection among under-fives and the associated factors in muleba district-kagera region tanzania. Master of Science in Tropical Disease Control Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam*.
Background: In Tanzania malaria is the leading cause of morbidity and mortality, especially in children under 5 years. The disease ranks number one in both outpatient and inpatient statistics. The socio-economic impact of malaria is so high that it contributes highly to poverty and underdevelopment. Malaria control and elimination interventions have been scaled up and intensified as the current efforts to attain World Health Assembly, Roll Back Malaria, and Millennium development targets, to reduce and interrupt disease transmission. The major malaria intervention tools now include: The use of long-lasting Insecticidal Nets (LLIN), Artemisinin-based Combination therapy (ACT), Indoor Residual Spraying of insecticide (IRS), and Intermittent Preventive Treatment in Pregnancy (IPT). Despite these interventions the prevalence remains high among the under five children hence this study. **Objectives:** This study aimed at examining the prevalence of malaria and the associated

factors among the under-five year's children in Muleba District. **Methodology:** Descriptive cross-sectional survey was carried out in Muleba district which is a malaria endemic area. Every head of the randomly selected household either female or male who were present at home at the time of data collection were interviewed in Kiswahili language using a pre-tested structured questionnaire - on ITNs ownership, actual usage among those who own ITNs, IRS coverage, socio-demographic factors and malaria parasites in the under-five population were ascertained using a Malaria rapid diagnostic test (mRDT). **Results:** A total of 391 under-fives aged between 1-60 month (mean age =22.8 month) were recruited and ascertained for parasitemia using the mRDT. The overall prevalence of malaria was 26.3%. Out of the screened children 79.5% reported to sleep under the ITNs the previous night. The coverage of IRs was observed to be 94%. **Conclusion and recommendation:** The higher prevalence could be the result of several factors as explained in this study. Therefore effective malaria control measures should be implemented in order to reduce the prevalence of malaria among the under-fives and hence ensure the public health at large.

267.   **Mushi D, Burton K, Mtuya C, Gona JK, Walker R, Newton CRJC. Perceptions, social life, treatment and education gap of Tanzanian children with epilepsy: A community-based study** *Epilepsy and Behavior*, **(2012); 23 (3): 224-229.**

The effects of epilepsy on children and their families, factors influencing the treatment and education gap and socio-cultural beliefs about epilepsy in children in rural sub-Saharan Africa are not clearly defined. We conducted a qualitative study, with 38 in-depth interviews and 2 focus group discussions with carers of children with epilepsy (CWE) in Tanzania. Discrimination, isolation and lack of hope were identified as major issues. Poor school attendance was attributed to learning difficulties, behavior problems, ongoing seizures and restricted school access. The treatment gap was related to misdiagnosis, preferential use of traditional treatment and cost of biomedical treatment. The hopes expressed for the future centered on access to treatment and education. Improved access to diagnosis, cost-effective treatment, sensitization of the community on epilepsy, collaborative care provision with traditional and faith healers and improved access to specialist schooling could improve the quality of life and future of CWE in this region.

268.   **Mushi D. Mental health and experience of partner violence among women who disclose hiv serostatus at muhimbili health information centre, dar es salaam. Master Degree in Psychiatry Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
HIV and violence are two of the major health problems affecting the lives of millions of women worldwide an important component of HIV voluntary counseling and testing (VCT) programs is encouraging clients to inform partners of their serostatus. Yet many clients do not disclose results to partners due to negative consequences such as stigma, anxiety and depressive symptoms, intimate partner violence, loss of intimacy, and threats to personal well-being. Building on a previous study this study explored the links between violence, mental health and HIV serostatus disclosure among women attending VCT at MHIC. **Methodology:** From September 2011 to March 2012 stand-alone VCT facility-based cohort follow up study was conducted and quantitative method for data collection was used to

identify the magnitude and factors associated with mental health and experience of partner violence among women who disclose HIV serostatus at Muhimbili Health Information Centre, Dar es Salaam (n= 607) women who met inclusion criteria for study were interview at baseline and after three month. Every client was screened for the anxiety- depressive symptoms and assessed for intimate partner violence using Hopkins Symptoms Checklist 25 (HSCL-25) for anxiety and depression and Conflict Tactic Scale (CTS) respectively. Both tools have been validated for use in the Tanzania context. Simple descriptive analysis was done to determine the magnitude of HIV serostatus disclosure, violence and mental health. Bivariate, student T-test and logistic regression mode were applied to determine the significant associations and factors independently associated with HIV serostatus disclosure. **Results:** A total of 607 participants were enrolled at baseline while 523 were re-interviewed at three month post HIV test. 84 were lost to follow up; the characteristic which was found to differ from those who were followed up was significant baseline history of sexual violence. 440 (84%) disclosed their HIV serostatus to their primary partners within three month post HIV test. Among those who disclosed 216 (49.1%) experienced physical violence (p=0.000), 170/440 (38.6%) reported to have low level of anxiety symptoms, while 109/440 (24.8%) reported to experienced high level of depressive symptoms (p=0.00). Among non disclosure 35(43.2%) did not share results due to fear of partner reaction. **Conclusion;** Eight out of ten women who received VCT service shared their HIV serostatus with their primary partners. Prior communication with partner about VCT service predicts the tendency for HIV serostatus disclosure. During HIV serostatus disclosure nearly five out of ten of women experience physical violence from their partner while two to three experience high level of depressive symptoms. Despite high encouragement for HIV serostatus disclosure during VCT services two out of ten women did not share their HIV serostatus result due to fear of partner reaction, most mentioned they feared physical abuse and abandonment. **Recommendations;** Need for increased innovative interventions that support HIV serostatus disclosure among clients attending VCT. Also there is a need to screen for violence and mental health of clients attending VCT.

269. **Mushi NF, Mbwambo ZH, Innocent E & Tewtrakul S. Antibacterial, anti-HIV-1 protease and cytotoxic activities of aqueous ethanolic extracts from Combretum adenogonium Steud. Ex A. Rich (Combretaceae).** *BMC complementary and alternative medicine.***2012;** *12***(1): 163.**

Background: Records have shown that *Combretum adenogonium* Steud. Ex A. Rich (Combretaceae) is used in traditional medicine systems of several tribes in Tanzania. This study focused on the investigation of antibacterial activity, anti-HIV-1 protease activity, toxicity properties and classes of phytochemicals in extracts from *C. adenogonium* Steud. Ex A. Rich (Combretaceae) to evaluate potential of these extracts for development as herbal remedies. **Methods:** Dried plant material were ground to fine powder and extracted using 80% aqueous ethanol to afford root, leaf and stem bark extracts. The extracts were assayed for anti-HIV-1 protease activities, antibacterial activities using microdilution methods and cytotoxicity using brine shrimps lethality assay. Screening for major phytochemical classes was carried out using standard chemical tests. **Results:** All extracts exhibited antibacterial activity to at least one of the test bacteria with MIC-values ranging from 0.31-5.0 mg/ml.

Two extracts, namely, root and stem bark exhibited anti-HIV-1 PR activity with IC_{50} values of 24.7 and 26.5 μg/ml, respectively. Stem bark and leaf extracts showed mild toxicity with LC_{50} values of 65.768 μg/ml and 76.965 μg/ml, respectively, whereas roots were relatively non-toxic ($LC_{50} = 110.042$ μg/ml). Phytochemical screening of the extracts indicated presence of flavonoids, terpenoids, alkaloids, tannins, glycosides and saponins. **Conclusion:** These results provide promising baseline information for the potential development of *C. adenogonium* extracts in treatment of bacterial and HIV/AIDS-related opportunistic infections.

270. **Mushi NF, Mbwambo ZH, Innocent E, & Tewtrakul S. Antibacterial, anti-HIV-1 protease and cytotoxic activities of aqueous ethanolic extracts from Combretum adenogonium Steud. Ex A. Rich (Combretaceae). BMC complementary and alternative medicine. 2012; 12(1): 163.**

Background: Records have shown that *Combretum adenogonium* Steud. Ex A. Rich (Combretaceae) is used in traditional medicine systems of several tribes in Tanzania. This study focused on the investigation of antibacterial activity, anti-HIV-1 protease activity, toxicity properties and classes of phytochemicals in extracts from *C. adenogonium* Steud. Ex A. Rich (Combretaceae) to evaluate potential of these extracts for development as herbal remedies. **Methods**:Dried plant material were ground to fine powder and extracted using 80% aqueous ethanol to afford root, leaf and stem bark extracts. The extracts were assayed for anti-HIV-1 protease activities, antibacterial activities using microdilution methods and cytotoxicity using brine shrimps lethality assay. Screening for major phytochemical classes was carried out using standard chemical tests. **Results:** All extracts exhibited antibacterial activity to at least one of the test bacteria with MIC-values ranging from 0.31-5.0 mg/ml. Two extracts, namely, root and stem bark exhibited anti-HIV-1 PR activity with IC_{50} values of 24.7 and 26.5 μg/ml, respectively. Stem bark and leaf extracts showed mild toxicity with LC_{50} values of 65.768 μg/ml and 76.965 μg/ml, respectively, whereas roots were relatively non-toxic ($LC_{50} = 110.042$ μg/ml). Phytochemical screening of the extracts indicated presence of flavonoids, terpenoids, alkaloids, tannins, glycosides and saponins. **Conclusion**:These results provide promising baseline information for the potential development of *C. adenogonium* extracts in treatment of bacterial and HIV/AIDS-related opportunistic infections.

271. *Mushumbusi Z. Prevalence of alcohol abuse among police officers at the major barracks, dar es salaam, Tanzania. Master of Science Clinical Psychology Dissertation 2012. Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: The Tanzania Police Force (TPF) has an immense responsibility in terms of providing a safe and secure environment for every individual residing in the Republic of Tanzania. Environmentally, the work is exciting and boring, challenging and tiresome, rewarding and frustrating, unpredictable and regular. Organizationally, officers may have to contend with rigid command structures, unreasonable policies and procedures, and inequitable treatment by superiors (Murtagh, 2010). These taxing working conditions add tremendous stress to the lives of police officials and increase the risk of alcohol misuse more

so than other professional groups and members of the public (Govender, 2008). Police officers may deal with job related stress, by turning to hazardous alcohol consumption as a coping mechanism (Murtagh, 2010). The extent to which Tanzanian police officers drink alcohol at hazardous, harmful or dependent levels is unknown since no research has been conducted among them. **Objectives:** To assess the prevalence of hazardous, harmful, as well as dependent drinking among police officers. **Materials and method:** A cross sectional study was conducted among police officers. Data was collected using interviewer administered Alcohol Using Disorders Identification Test (AUDIT) questionnaire and demographic data form. **Results:** This study found that, the prevalence of hazardous alcohol drinking among police officers at Kilwa Road police barracks is 14.8% and levels of harmful and dependent drinking are 4.4% and 2.4% respectively. **Conclusion and Recommendations:** From this study it can be concluded that alcohol consumption is problematic among police officers**.** There is need to establish a training program for police counselors who will be able to identify police officers at risk and offer early interventions. Further studies may focus on predictors of hazardous, harmful, and dependent alcohol abuse among police so that more appropriate interventions can be put in place.

272. **Mutagaywa R. Prevalence of erectile dysfunction and associated risk factors among diabetic men attending diabetic clinic at muhimbili national hospital in dar-es-salaam, Tanzania. Master of Medicine (Internal Medicine) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Introduction: There has been an increase in the prevalence of erectile dysfunction (ED) in the general population. This increase has been attributed to by several factors. Among these factors Diabetes Mellitus have been shown to be a major determinant. **Objective:** To determine the prevalence of erectile dysfunction and associated risk factors among diabetic men attending diabetic clinic at Muhimbili National Hospital (MNH). **Methodology:** This was a prospective cross-sectional hospital based study, was conducted among 312 consecutively recruited diabetic male patients (Mean age = 51.33 years, SD = 15.03 years) for the period of 8 months from May to December 2011. Data were collected using a structured questionnaire, which consisted of several demographic variables, clinical aspects variables and International Index of Erectile Function (IIEF) questionnaire. Descriptive statistics were calculated to describe the study population and check for initial associations at univariate level. Multivariate logistic regression was used to identify and quantify predictors of ED among these men. Variables that were entered in the equation were duration of diabetes mellitus (DM), type of DM, history of smoking, history of alcohol, history of stroke, history of peripheral neuropathy, monofilament score, being hypertensive, lipid profile, fasting blood sugar, level of Glycosylated hemoglobin (HbA1c) and Ankle Brachial Index (ABI) score while controlling for other demographics. **Results:** The prevalence of erectile dysfunction was found to be 55.1% (n= 172). Forty patients (12.8%) had mild dysfunction, 45 (11.5%) had moderate dysfunction, and 87 (27.9%) had severe dysfunction. The prevalence was higher (78%) in men aged 60 years and above (p < 0.001); there is a trend towards increase in prevalence of erectile dysfunction as the age increases. Longer duration of DM, type 2 DM, history of peripheral neuropathy, history of hypertension, low score on monofilament test, and evidence of peripheral vascular disease were highly significantly associated with ED (p =<0.001). History of smoking, history of drinking alcohol, and history

of stroke were also significantly associated ED (P = 0.02, 0.05, and 0.01 respectively). On multivariate logistic regression the predictors of ED were found to be old age (odds ratio [OR = 7.1, 95% CI 1.2-40.7), evidence of peripheral neuropathy ([OR] =5.9, 95% CI 1.6-21.3), and evidence of peripheral vascular disease ([OR] =2.5, 95% CI 1.2-5.3) {p= 0.028, 0.019, and 0.007 respectively}. This study also showed that ED was highly statistically significant associated with other sexual domains (p <0.001). **Conclusions and Recommendations:** This study showed that the prevalence of erectile dysfunction is high among DM patients. Interventions aimed at prevention of DM especially type 2; early diagnosis of DM and detection of its complications, and adherence to treatment to prevent complication should be implemented. Further studies should emphasize on temporal variation to show true causality of DM on erectile dysfunction especially in low-income settings.]

273. **Mutagonda R, Kamuhabwa AAR, Massawe S, Mpembeni R. Intermittent preventive therapy and treatment of malaria during pregnancy: A study of knowledge among pregnant women in Rufiji District, Southern Tanzania** *Tropical Journal of Pharmaceutical Research*, **(2012); 11 (5): 835-845.**

Purpose: To assess the knowledge and awareness of pregnant women regarding the use of sulfadoxinepyrimethamine (SP) for intermittent preventive therapy (IPT) and artemether-lumefantrine (ALu) for treatment of malaria during pregnancy. Methods: The study was conducted in Rufiji district, southern Tanzania from March 2011 to September 2011. Four hundred and seventy (470) pregnant women in their second and third trimesters were interviewed when attending antenatal clinics at the selected hospitals, health centers and dispensaries. Focus group discussions (FGDs) were also conducted with 46 pregnant women at the health facilities in the district. Results: More than half (54.3 %) of pregnant women did not know if SP it was used for IPT. Most women (76.6 %) did not know the use of SP for IPT in relationship with gestation age. Overall, the results show that most women had very low knowledge about the use of SP for IPT. Forty three (9.1 %) pregnant women reported to have had malaria during their current pregnancies. The antimalarials reported to be used by pregnant women were quinine 18(42.9 %), SP (23.8 %), ALu (21.4%) and sulphamethoxyprazinepyrimethamine (2.4%). Irrespective of the gestation age of pregnancy, almost all (98.3 %) pregnant women perceived ALu as unsafe drug to be used during pregnancy. Conclusion: Most pregnant women had minimum knowledge about the use and benefits of SP for IPT and ALu for treatment of malaria during pregnancy. Some erroneous beliefs about the safety of ALu during pregnancy were also identified among pregnant women. For effective implementation of IPT policy and treatment of malaria during pregnancy, pregnant women should be sensitized and educated on the use and benefits of antimalarial drugs.

274. **Mwakigonja AR, Torres LMM, Mwakyoma HA, & Kaaya EE. Cervical cytological changes in HIV-infected patients attending care and treatment clinic at Muhimbili National Hospital, Dar es Salaam, Tanzania.** *Infectious agents and cancer.***2012;** *7*(1), 3.
Background: Tanzania is among Sub-Saharan countries mostly affected by the HIV and AIDS pandemic, females being more vulnerable than males. HIV infected women appear to

have a higher rate of persistent infection by high risk types of human papillomavirus (HPV) strongly associated with high-grade squamous intraepithelial lesions (HSIL) and invasive cervical carcinoma. Furthermore, although HIV infection and cervical cancer are major public health problems, the frequency and HIV/HPV association of cervical cancer and HSIL is not well documented in Tanzania, thus limiting the development of preventive and therapeutic strategies.

275. **Mwakigonja AR, Torres LMM, Mwakyoma HA, & Kaaya EE. Cervical cytological changes in HIV-infected patients attending care and treatment clinic at Muhimbili National Hospital, Dar es Salaam, Tanzania.** *Infectious agents and cancer*.**2012;** *7***(1): 3.Background:** Tanzania is among Sub-Saharan countries mostly affected by the HIV and AIDS pandemic, females being more vulnerable than males. HIV infected women appear to have a higher rate of persistent infection by high risk types of human papillomavirus (HPV) strongly associated with high-grade squamous intraepithelial lesions (HSIL) and invasive cervical carcinoma. Furthermore, although HIV infection and cervical cancer are major public health problems, the frequency and HIV/HPV association of cervical cancer and HSIL is not well documented in Tanzania, thus limiting the development of preventive and therapeutic strategies.

276. **Mwanga J. Hiv sero status disclosure and associated factors among people living with hiv/aids attending a care and treatment centre in kisarawe district hospital,Tanzania Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background: It is estimated that about 1.4 million people in Tanzania are infected with HIV, with 90,000 being infected annually. Previous studies in Africa on HIV status disclosure have documented low rates of disclosure that vary between countries. Limited data indicates that the disclosure rate in Tanzania ranges from 16.7% to 55%. PLWHA have difficulties in disclosing their HIV status to others for fear of negative consequences. This attitude affects the tempo of HIV prevention. Disclosure of HIV positive status in Tanzania has been focused on various areas but its association with social cultural factors remains unclear. **Objective**: To assess the magnitude of HIV status disclosure and explore determinants of disclosure among people living with HIV/AIDS (PLWHA) attending care and treatment centre at Kisarawe District Hospital. **Materials and methods:** A cross- sectional study design was employed where both quantitative and qualitative data were collected from consenting PLWHA. Univariate, bivariate and multivariate analyses were performed using SPSS statistical software. **Results**: A total of 402 PLWHA were recruited, among them, 132 (32.8%) were males. The mean age of the participants was 42.0 years (Standard deviation 9.9) with majority aged between 25-49. The overall disclosure rate to somebody was 98% while the disclosure to spouses was 56.3%. The greater number of study participants (43%) disclosed their status to five people and above. Males (74.2%) disclose more to their spouses than females (47.7%), (p<0.001). The main determinants of HIV status disclosure were gender (AOR 0.28; 95%CI 0.14-0.56) and receiving counseling (AOR 0.33; 95%CI: 0.10-0.81). Qualitative findings also show that cultural beliefs and attitudes influence HIV status disclosure among PLWHA. **Conclusion and recommendations** Overall disclosure rate is high though relatively low among spouses. Male gender and counseling were the most important determinants of disclosure. Interventions that target women and expand counseling should be intensified.

277. **Mwangomo DT, Moshi MJ, & Magadula JJ. Antimicrobial activity and phytochemical screening of Antidesma venosum root and stem bark ethanolic extracts.** *Int J Phytochem Pharmacol.***2012;** *2***: 90-5.**

Antidesma venosum. E. Mey. ex Tull root and stem bark ethanol extracts and their dichloromethane, petroleum ether and methanol fractions exhibited strong antibacterial activity against 5 Gram positive bacteria including *Staphylococcus aureus* (ATCC25923)*, Bacillus anthracis* (NCTC10073)*, Bacillus subtilis (clinical isolate), Streptococcus faecalis (clinical isolate)*and *Bacillus cerius (clinical isolate)* with MICs ranging from 0.0195 to 0.7812 mg/ml. The crude ethanol extracts of both the stem bark and roots were inactive against Gram negative bacteria except for *Pseudomonas aeruginosa* (ATCC 29953) against which they both exhibited weak activity MIC 1.25 and 5.0 mg/ml, respectively*, Escherichia coli* (ATCC 25922) and *Klebsiella pneumoniae* (ATCC 700603) which gave MICs between 2.50-5.00 mg/ml. The Petroleum ether and dichloromethane fractions of the root ethanol extract showed weak activity against almost all the Gram negative bacteria with MICs between 2.5 and 5.0 mg/ml. Whereas the crude extracts did not show antifungal activity, the petroleum ether and dichloromethane fractions of both the root and stem bark ethanol extracts showed weak activity against Candida *albicans* (ATCC 90028) and *Cryptococcus neoformans* (clinical isolate), MIC 2.5-5.0 mg/ml. The extracts of the stem bark and roots exhibited mild to moderate toxicity against brine shrimp larvae with LC_{50} ranging between 25.56-40.93 µg/ml for the stem bark and 62.97-80.26 µg/ml for the root ethanol extract. Phytochemical screening revealed the presence of terpenoids, tannins and steroids in both the root and stem bark extracts. These results show promising activity against Gram positive bacteria, especially by the petroleum ether and dichloromethane fractions of the roots and thus support the popular use of this plant for the treatment of conditions associated with bacterial infections such as cut wounds, chest infections and some types of diarrhoea. Further studies are ongoing to identify the active compounds.

278. **Mwatawala S, Sando D, Malele RS, Moshiro C, Senyael BR, Somi G, & Ross-Degnan D. Strengthening the appointment and tracking systems for patients on antiretroviral therapy in Tanzania: A optimizing adherence to ART as part of people-centered public health.** *International Journal of Person Centered Medicine.***2012;** *2***(4): 825-836.**

Rationale, aims, and objectives: For a successful patient outcome, a high level of adherence to antiretroviral therapy (ART) is needed. A 2008 report in Tanzania indicated poor clinic attendance and a high lost to follow-up rate as major threats to optimal ART program effectiveness. Most clinics lack a standardized appointment system, which leads to poor records on patients who are expected to attend the clinic. As a result, no one knows if scheduled patients have arrived and no standardized system exists to early track patients missing clinic. Those facilities that do follow patients mainly track those who are categorized as lost to follow-up, when it is already too late to avoid drug resistance and treatment failure. The objective of this study was to assess the effectiveness of strengthening appointment and tracking systems in improving patient attendance at ART clinics in Tanzania as part of

people-centered approaches to public health. **Methods:** In each of 2 regions, we selected 3 intervention facilities and 1 control facility. Inclusion criteria were facilities that had at least 150 patients on ART and were accessible by the study team. At each facility, we recruited a cohort of 100 patients who had been on treatment for at least 9 months at baseline. The intervention involved introducing a standardized appointment register, negotiating appointments with patients and strengthening linkage with communities to trace patients who missed appointments. The primary outcome indicator was the percentage of patients who missed visits by either more than 3 days or more than 14 days. An interrupted time series analysis was applied and comparisons were made with the control group. **Results:** Results showed that in both regions, between 15% and 20% of patients missed visits by more than 3 days each month prior to the interventions. After the intervention, the rate declined to about 11% in Region 1, but did not decline in Region 2 or in the control facilities. **Conclusions:** The interventions had some impact on improving appointment-keeping and adherence to ART among patients in Tanzania. Effective appointment systems and strengthening linkage with community programs are feasible and sustainable approaches to reduce high rates of missed visits and enhance people-centered public health.

279. **Mwita J, Mugusi F, & Pallangyo K. Pneumocyctis pneumonia and pulmonary tuberculosis among HIV-infected patients at Muhimbili National Hospital, Tanzania.** *East African journal of public health*.**2012;** *9*(**1**)**: 10-12.**
Background: Respiratory infections such as pulmonary tuberculosis (PTB) and pneumonia are significant causes of morbidity and mortality in HIV infection. Recent studies have shown an increase in Pneumocystis jerovecii pneumonia (PCP) in Sub-Saharan Africa. This study determines the prevalence of PCP and other pulmonary infections among HIV patients at HIV clinics in Tanzania. **Methods:** HIV infected patients with cough were enrolled between May and November 2006. Sputum induction was done and examined for PCP using Toluidine blue stain and Polymerase chain reaction. Ziehl-Neelsen stain was also done for PTB. **Results:** Nine of the 125 (7.2%) had smear positive PTB. PCP was diagnosed in 10.4% (13/125) by Toluidine blue, while PCR was positive in 3.6% (3/88). Low CD4+ cell counts were associated with increased risk to both PCP and PTB. **Conclusion:** PCP is still low in Tanzania. PTB remains the major respiratory problem in HIV patients with cough. Toluidine blue staining is not reliable for PCP diagnosis.

280. **Myovela B. The prevalence of posttraumatic stress disorder and associated mental health problems among institutionalized orphans in dar es salaam, Tanzania.** Master of Clinical Psychology **Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: Orphanhood is becoming a more common experience for children in Tanzania, in part as a consequence of the AIDS pandemic, trauma and poverty. The number of orphans and risk of psychopathology has been steadily increasing even in regions where the AIDS epidemic has stabilized. Institutional care for orphaned children is uncommon in sub-Sahara Africa and seen as a last resort primarily as orphanages are often seen as a source of unhealthy psychological development and orphans' ability to survive and thrive as adults is significantly threatened if raised in an orphanage. Research in this area is minimal in Tanzania. The magnitude of PTSD and associated mental health problems among orphans in Dar es Salaam is unknown, **Objectives:** The aims of the study was to determine the

prevalence of post traumatic stress disorder (PTSD), child abuse, depressive symptoms and suicidal tendency among orphans in Dar es Salaam and the associations between PTSD and social demographic characteristics, child abuse, depression and suicidality among orphans in Dar es Salaam. **Methodology:** A cross-sectional study was conducted among orphans aged 7 to 17 years from 15 orphanages in Dar es Salaam. Ethical clearance was sought from MUHAS and convenient sampling applied to reach 350 eligible participants. A self administered structured questionnaire was used for data collection on socio-demographic characteristics and child abuse events. Three standardized scales were used to collect measures for PTSD, depression and suicidality. Data were cleaned and analyzed by SPSS version 15 windows. Univariate and multivariate statistical analysis with significant level set at p<0.005 were used. **Results:** Eighty four participants (24%) met DSM 1V criteria for PTSD, 65.7% reported child abuse events, 78% depressive symptoms and 25.7% suicidal tendency. Findings also showed a strong association between PTSD symptoms sexual abuse and suicidality. Analysis indicated that being out of school and being a single orphan was significantly associated with risk to develop PTSD (p < 0.002) (p<0.0009). Multinomial regression analysis revealed the predictors of PTSD among orphans to be sexual child abuse (AOR= 2.5, 95% CI 1.2 - 2.5, p < 0.012) suicidal tendency (AOR= 3.7, 95% CI 1.6 - 5.0, p < 0.001) and marginally physical child abuse (AOR= 1.81, 95% CI 0.8 − 60.8, p < 0.07). **Conclusion:** Orphanhood brings a host of mental health vulnerabilities including PTSD. A cultural recognition of PTSD and its long term negative consequences needs to be developed and interventions to address the vulnerabilities and risks for mental health problems among institutionalized orphans. **Recommendation:** Caregivers should be trained to recognize PTSD symptoms, child abuse, depressive symptoms and suicidal tendencies among orphans and refer them for early intervention. School enrolment should be considered compulsory for all institutionalized orphans.

281. **Mzale A . Incidence and types of medication errors in the management of inpatients with chronic cardiac failure at muhimbili national hospital dar-es-salam. Master of Pharmacy in Clinical and Hospital Pharmacy Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Chronic cardiac failure (CCF) is one of the major causes of high morbidity and mortality in Tanzania. Patients with CCF often have other diseases and require adequate multiple drug treatment, which is important for optimum prognosis. Medication error (ME) is a common problem facing hospitals both in developed and developing countries. The likelihood of ME to occur during the management of CCF is high due to high number of medicines, which must be taken at the same time and this may lead to poor treatment outcome. **Aim of the study:** The main aim of the study was to determine the types and frequencies of medication errors among patients with CCF admitted at Muhimbili National Hospital (MNH). **Methodology:** This was a prospective observational study that included 100 adult male and female patients with the diagnosis of CCF at medical wards at MNH. Observations were made on admission, post admission, during hospital stay and on discharge. Information was extracted from eligible patients" medical records, drug charts, laboratory test results and personal interview with patients. The obtained information was recorded in case report form (CRF). After reviewing and recording data from medical

records, the investigator examined drug treatment prescribed by the intern, resident or specialist and noted the type of ME committed. Any new changes by another prescriber during the hospital stay were also examined. Upon receiving laboratory results, the investigator re-examined the cases for potential drug and abnormal electrolyte interaction. On discharging, the investigator examined prescriptions and also interviewed patients on types of non pharmacological advices given to them by hospital staff. Specially designed check list, patients" interviews and drug charts were used to determine drug administration errors. The ability of a block pharmacist to detect prescription errors was determined from medication issued for each patient according to patient file. xiii **Results**: During a follow up of 201 person days, 71 patients were observed with medication error (incidence rate, 35 per 100 person days of observation). Most of medication errors were due to prescription errors (80.2%), followed by dispensing error (16%) and lastly by drug administration error (4%). Most frequency of ME were observed during hospital stay (40%), followed by admission (25%). Among commission errors potential drug and drug interaction, 81 (22.7%) and potential drug and abnormal electrolyte interactions 80 (22.4%) were the most common. Potential drug and abnormal electrolyte interaction was the major error undetected by block pharmacist contributing to 45%, followed by inappropriate starting dose (23.1%) and drug of choice appropriate to the condition not written (23.7%). The mean duration of hospital stay was shorter for those without medication error (mean days 6.75 95%CI 5.1 8.45) compared with those with medication error and those with errors (mean days 11.2 95%CI 8.87 13.5). Patients discharged with symptom had more ME (93.1) compared to those without symptoms (58%) and the association was significant (P = 0.001). **Conclusion**: From the study, it can be concluded that the incidence of medication error is fairly high. Controlling for such errors may lead to improvement in patient care. The pattern of ME suggests that prescription errors were the major type of error. Of these prescription errors, errors leading to drug and drug interactions and drug with abnormal electrolyte interactions are the most common. Clinicians at MNH need to consider laboratory results while treating these patients. Producing laboratory results on time may be necessary to avoid these interactions.

Chapter Two: Author Names (N – Z)

282.   **Nagu J, Kanyangarara M, Hawkins C, Hertmark E, Chalamila G, Spiegelman D, & Fawzi W, Elevated alanine aminotransferase in antiretroviral-naïve HIV-infected African patients: magnitude and risk factors.** *HIV medicine.* **2012;** *13***(9): 541-548.**
Background: Alanine aminotransferase (ALT) is commonly used to measure liver injury in resource-limited settings. Elevations in ALT are predictive of increased mortality from liver disease and may influence the choice of first-line antiretroviral therapy (ART).**Methods:**A cross-sectional analysis of the prevalence and predictors of elevated ALT (defined as > 40 IU/L) was conducted. ART-naïve, HIV-infected adults with a baseline ALT measurement who were enrolled in any of the 18 HIV Care and Treatment Clinics in Dar es Salaam, Tanzania between November 2004 and December 2009 were included in the study. Median values were calculated and log-binomial regression models were used to examine predictors of elevated ALT.**Results:** During the study period, 41 891 adults had a baseline

ALT measurement performed. The prevalence of ALT > 40, > 120 and > 200 IU/L was 13, 1 and 0.3%, respectively. In multivariate analyses, male sex, CD4 T lymphocyte count < 200 cells/μL and higher World Health Organization (WHO) clinical stages were associated with a significantly higher risk of ALT > 40 IU/L (all $P < 0.01$). Hypertryglyceridaemia, hyperglycaemia and hepatitis B virus (HBV) coinfection (positive for HBV surface antigen) were significantly associated with a higher risk of elevated ALT. Pregnancy, anaemia, low-density lipoprotein cholesterol > 130 mg/dL and current tuberculosis treatment were associated with a significantly reduced risk for elevated ALT. **Conclusions:** In this HIV-infected, ART-naïve Tanzanian population, extreme elevations in ALT were infrequent but minor elevations were not uncommon. Antiretrovirals with potentially hepatotoxic side effects should be initiated with caution in male patients, and in patients with HBV coinfection, advanced immunosuppression and components of the metabolic syndrome.

283.   Nagunwa T, & Lwoga E. (2012). Developing eLearning technologies to implement competency based medical education: Experiences from Muhimbili University of Health and Allied Sciences. *International Journal of Education & Development using Information & Communication Technology*.**2012;** *8*(**3**): **p7-21**

This paper provides the practical experience of developing an eLearning technology as a tool to implement Competency-based Medical Education (CBME) in Tanzania medical universities, with a specific focus on Muhimbili University of Health and Allied Sciences. The paper provides a background to eLearning and the early attempt to adopt it in 2006 at MUHAS, with its challenges leading to failure. Next it presents the strategic re-establishment of eLearning to support the new CBME introduced in 2009. Finally, the paper discusses the challenges faced during the implementation process and provides a discussion of lessons learnt. The paper suggests that, in order to improve the quality of medical education in settings with limited resources, universities in developing countries should make effective use of innovative and emerging technologies relevant to their environments. Successful implementation of eLearning requires a strategic approach which should involve university management, academic staff and students. The approach should take into account significant issues including pedagogy, ICT infrastructure, appropriate technologies, human resources, eLearning policy, faculty and student training, integration of eLearning and information literacy as well as the university curricula and partnerships.

284.   Nagunwa TP & Lwoga ET. Developing an eLearning strategy to implement medical competency based curricula: experiences from Muhimbili University of Health and Allied Sciences. In *Education and e-Learning Innovations (ICEELI), 2012 International Conference on* **(pp. 1-6). IEEE.**

This paper explores the development of eLearning technologies as a new tool to implement competency-based curricula in Tanzania medical universities, with a specific focus on Muhimbili University of Health and Allied Sciences (MUHAS). The paper provides the background of eLearning aspects and the early attempt of adopting eLearning in 2006 at MUHAS and its challenges leading to failure, next it presents the strategic re-establishment of eLearning to support the new competency-based curricula introduced in 2009. Finally, the

paper discusses the challenges faced along the implementation process and provides an overview of lessons learnt. This paper observes that if used effectively, eLearning can enhance ubiquity, equity and quality in medical education and the development of appropriate skills in the developing countries' medical care systems. The paper suggests that in order to improve the quality of medical education under limited resource settings, universities in developing countries should effectively make use of innovative and emerging technologies which are relevant to their respective environments. A successful implementation of eLearning requires a strategic approach which should be embedded by the university management, academic staff and students. The approach should at least take into account significant issues including pedagogy, ICT infrastructure, appropriate technologies, human resources, eLearning policy, training of faculty and students, integration of eLearning and information literacy into university's curricula and partnerships.

285.   **Natchu UCM, Liu E, Duggan C, Msamanga G, Peterson K, Aboud S, Spiegelman D, Fawzi WW. Exclusive breastfeeding reduces risk of mortality in infants up to 6 mo of age born to HIV-positive Tanzanian women.*American Journal of Clinical Nutrition*, (2012); 96 (5): 1071-1078.**

Background: Despite the benefits of exclusive breastfeeding (EBF), exposure to HIV from breast milk has relegated EBF to an option only when formula feeding is not affordable, feasible, safe, and sustainable. Mixed feeding remains the norm in sub-Saharan Africa. Objective: We evaluated whether the duration of EBF was associated with mortality and HIV infection in children followed to ≤5 y of age. Methods: A total of 690 mother-infant pairs from the Trial of Vitamins with information on infant feeding, HIV status, and at least one visit in the first year were included in the analysis. The duration of EBF was defined in months as a time-varying covariate at each follow-up visit. Associations of the duration of EBF with mortality, HIV infection, and HIV infection or death were estimated by using Cox proportional hazards models and Kaplan-Meier survival curves. Results: A 1-mo increase in EBF was associated with a 49% reduction in early infant mortality in the first 6 mo of life (RR: 0.51; 95% CI: 0.28, 0.93) and a nonsignificant 15% reduction in risk of HIV infection or death (RR: 0.85; 95% CI: 0.71, 1.01; P = 0.07) over the first 5 y of life. EBF was not associated with HIV infection (RR: 0.93; 95% CI: 0.76, 1.15). Conclusion: Longer EBF by HIV-positive mothers was associated with reduced mortality in the first 6 mo of life without increased HIV infection, which makes EBF the best option for women who cannot sustain exclusive formula feeding.

286.   **Ngaimisi E, Mugusi S, Minzi OMS, Sasi P, Riedel KD, Janabi M, Haefel WE, Bertilsson L,Burhenne J, & Aklillu E. Rifampicin and CYP2B6 Genotype Influence efavirenz Autoinduction and hence Plasma Exposure. Presented at AIDS 2012 – Washington, D.C., USA (22-27 JULY 2012**

287.   **Ngassapa OD, Kaaya EE , Fyfe MV, Lyamuya EF, Kakoko DC, Kayombo EJ, Kisenge RR, Loeser H , Mwakigonja AR, Outwater AH, Martin-Holland J, Mwambete KD, Kida I. , MacFarlane, S.B.Curricular transformation of health professions education in Tanzania: The process at Muhimbili University of Health and Allied**

Sciences (2008-2011)*Journal of Public Health Policy***, (2012);33 (SUPPL.1): S64-S91.**

Tanzania requires more health professionals equipped to tackle its serious health challenges. When it became an independent university in 2007, Muhimbili University of Health and Allied Sciences (MUHAS) decided to transform its educational offerings to ensure its students practice competently and contribute to improving population health. In 2008, in collaboration with the University of California San Francisco (UCSF), all MUHAS's schools (dentistry, medicine, nursing, pharmacy, and public health and social sciences) and institutes (traditional medicine and allied health sciences) began a university-wide process to revise curricula. Adopting university-wide committee structures, procedures, and a common schedule, MUHAS faculty set out to: (i) identify specific competencies for students to achieve by graduation (in eight domains, six that are inter-professional, hence consistent across schools); (ii) engage stakeholders to understand adequacies and inadequacies of current curricula; and (iii) restructure and revise curricula introducing competencies. The Tanzania Commission for Universities accredited the curricula in September 2011, and faculty started implementation with first-year students in October 2011. We learned that curricular revision of this magnitude requires: a compelling directive for change, designated leadership, resource mobilization inclusion of all stakeholders, clear guiding principles, an iterative plan linking flexible timetables to phases for curriculum development, engagement in skills training for the cultivation of future leaders, and extensive communication.

288.   **Ngassapa OD, Kaaya EE, Fyfe MV, Lyamuya EF, Kakoko DC, Kayombo EJ, Rodrick R Kisenge RR, Loeser H, Mwakigonja AR, Outwater AH, Martin-Holland J, Mwambete KD, Kida I & Macfarlane SB. Curricular transformation of health professions education in Tanzania: The process at Muhimbili University of Health and Allied Sciences (2008–2011).** *Journal of Public Health Policy*, **S64-S91.**

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289.   **Ngassapa OD, Kaaya EE, Fyfe MV, Lyamuya EF, Kakoko DC, Kayombo EJ,**

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291. Ngassapa OD, Kaaya EE, Fyfe MV, Lyamuya EF, Kakoko DC, Kayombo EJ, RodrickR K, Loeserf H, Mwakigonjab AR, Outwaterg AH, Martin-Holland J, Mwambetea KD, Kida I,& Macfarlane S. BCurricular transformation of health professions education in Tanzania: The process at Muhimbili University of Health and Allied Sciences (2008–2011). *Journal of public health policy*,2012; 33: S64–S91.Tanzania requires more health professionals equipped to tackle its serious health challenges. When it became an independent university in 2007, Muhimbili University of Health and Allied Sciences (MUHAS) decided to transform its educational offerings to ensure its students practice competently and contribute to improving population health. In 2008, in collaboration with the University of California San Francisco (UCSF), all MUHAS's schools (dentistry, medicine, nursing, pharmacy, and public health and social sciences) and institutes (traditional medicine and allied health sciences) began a university-wide process to revise curricula. Adopting university-wide committee structures, procedures, and a common schedule, MUHAS faculty set out to: (i) identify specific competencies for students to achieve by graduation (in eight domains, six that are inter-professional, hence consistent across schools); (ii) engage stakeholders to understand adequacies and inadequacies of current curricula; and (iii) restructure and revise curricula introducing competencies. The Tanzania Commission for Universities accredited the curricula in September 2011, and faculty started implementation with first-year students in October 2011. We learned that curricular revision of this magnitude requires: a compelling directive for change, designated leadership, resource mobilization inclusion of all stakeholders, clear guiding principles, an iterative plan linking flexible timetables to phases for curriculum development, engagement in skills training for the cultivation of future leaders, and extensive communication.

292. Ngatoluwa M, Munseri P, Janabi M, Mhalu F, Sandstrom E, & Bakari M. (2012). Enrolment and logistical challenges in TaMoVac 01 Phase I/II HIV trial despite the completion of an earlier (HIVIS-03 trial trial) in Dar es Salaam. *Retrovirology*.2012; *9*(2): P153.Participation of sub-Saharan countries in HIV vaccine trials is important in the fight against HIV/AIDS, and has to be sustained by continued trials. Experiences from earlier trials are expected to influence the design and the performance of subsequent trials. Following completion of HIVIS-03 trial, TaMoVac- 01 trial was initiated. We compare enrolment experiences between the two trials. Methods The HIVIS-03 trial, conducted between 2007 – 2010 recruited 60 volunteers from the Police force in Dar es Salaam. The subsequent TaMoVac- 01 trial has recruited 62 volunteers from the Police and Prisons force, and youths at IDC. **Results**: Enrollment of volunteers into the HIVIS-03 took 12 months while the TaMoVac-01 trial took 13 months. Screened: enrolled ratio was 3:1for HIVIS-03 trail, while for TaMoVac-01 8:1. Reasons for screen-out in the TaMoVac-01 trial were influence of family, misconception, clinical and laboratory abnormalities. Recruitment of females was a challenge in the HIVIS-03 trial, but was unnoticed in the TMV-01 trial, this could be due to inclusion of youths. Misconceptions in the Police force remain an obstacle to recruitment despite regular education sessions. Other challenges were: Poor adherence to schedules, due to competing prioritization of employment requirements; difficulties in communication with volunteers without phones. Most challenges were addressed through collaboration with the concerned authorities in the respective cohorts. **Conclusion:** Recruitment challenges continued in the TMV-01 trial despite our experiences with HIVIS-

03 trial. Enhanced Community engagement and timely action by the researchers is necessary to ensure a smooth conduct of the trials.

293.	**NgatoluwaM,Munseri P,JanabiM,Mhalu F, Sandstrom E, & Bakari M,Enrolment and logistical challenges in TaMoVac 01 Phase I/II HIV trial despite the completion of an earlier (HIVIS-03 trial trial) in Dar es Salaam.** *Retrovirology.* **2012: *9*(Suppl 2), P153.**

Background: Participation of sub-Saharan countries in HIV vaccine trials is important in the fight against HIV/AIDS, and has to be sustained by continued trials. Experiences from earlier trials are expected to influence the design and the performance of subsequent trials. Following completion of HIVIS-03 trial, TaMoVac- 01 trial was initiated. We compare enrolment experiences between the two trials. Methods: The HIVIS-03 trial, conducted between 2007 - 2010 recruited 60 volunteers from the Police force in Dar es Salaam. The subsequent TaMoVac- 01 trial has recruited 62 volunteers from the Police and Prisons force, and youths at IDC. Results: Enrolment of volunteers into the HIVIS-03 took 12 months while the TaMoVac-01 trial took 13 months. Screened: enrolled ratio was 3:1for HIVIS-03 trail, while for TaMoVac-01 8:1. Reasons for screen-out in the TaMoVac-01 trial were influence of family, misconception, clinical and laboratory abnormalities. Recruitment of females was a challenge in the HIVIS-03 trial, but was unnoticed in the TMV-01 trial, this could be due to inclusion of youths. Misconceptions in the Police force remain an obstacle to recruitment despite regular education sessions. Other challenges were: Poor adherence to schedules, due to competing prioritization of employment requirements; difficulties in communication with volunteers without phones. Most challenges were addressed through collaboration with the concerned authorities in the respective cohorts.**Conclusion:**Recruitment challenges continued in the TMV-01 trial despite our experiences with HIVIS-03 trial. Enhanced Community engagement and timely action by the researchers is necessary to ensure a smooth conduct of the trials.

294.	**Ngowi AV, Rongo LM, & Mbise TJ. Encyclopedia of Environmental Management. 2012.**

To enhance the quality of life for farmers and society, getting rid of pesticides could remove the accompanying health and environmental problem. Pesticides are a big and growing business benefiting multinational companies in developed countries; however, the developing countries act as pesticide markets left to deal with the adverse effects. Pesticide control legislation was started to establish rules and principles for the management of pesticides so as to protect people and the environment against the harmful effects of pesticides. Exploring the weakness in the implementation of effective regulations in developing countries shows that it is mostly compounded by weak capability, infrastructure, and the international trade that hinder implementation of regulatory controls. To avoid damage, knowledge of hazards posed by the available pesticides could be developed and appropriate control measures established. Although it is known that use of personal protective equipment during pesticide handling is very important, farmers do not use it because it is too expensive, not available, or uncomfortable. Organic farming is practiced by farmers, especially in horticulture, to grow vegetables and fruits consumed by family

members; however, they believe that by using pesticides, they increase yield and improve the appearance of the vegetables grown for sale. Surveillance is important for providing evidence of pesticide poisoning and its extent of pesticide poisoning to inform policy for intervention. Participatory approaches work very well in educating and also learning from the farmers' indigenous knowledge. In promoting sustainable agriculture, pesticide damage can be avoided by eliminating the most hazardous substances and reducing dependence on pesticides. This entry is organized into the following sections: general introduction, avoiding pesticide hazards, and pesticide poisoning surveillance. Illustrations are included in the sections on pesticide regulation, avoiding pesticide hazards, and encouraging judicious use of pesticides. The main goal of the entry is to explore how damage due to pesticides could be avoided, particularly in Africa, by using less harmful pesticides, more careful application, or not using at all.

295. **Njelekela M. Body fat maldistribution among human immunodeficiency virus-infected patients attending care and treatment clinics in dar es salaam municipal hospitals. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Long term side effects of HAART such as body fat mal-distribution have not been reported in Tanzania, since care and treatment began in 2004. Likewise perceptions and attitude of HIV/AIDS patients on treatment on their body fat mal-distribution has not been studied previously. A cross sectional study was therefore conducted to determine the prevalence and most common risk factors for body fat mal-distribution among human immunodeficiency virus (HIV)-infected patients in Dar es Salaam and to assess the perceptions and attitudes these patients have on body fat mal-distribution. A total of 466 adult patients were interviewed during the study. Mean age of the participants was 41.1 ± 9.8 years, with men being more aged (46.1 ± 10.8 years) than women (39.6 ± 8.9 years) p<0.0001. Bivariate analysis showed significant association between body fat mal-distribution and sex (p=0.03), age (p=0.003), the use of HAART (p=0.0001) and the types of HAART (stavudine and efavirenz based (p<0.0001). In multivariate analysis the most important determinants of lypodystrophy in this population were stavudine based therapy (OR, 27.0, 95% CI 11.87-19.11, p<0.0001), efavirenz based therapy (OR, 8.5, 95% CI 3.8-61.50, p<0.0001), nevirapine based therapy (OR, 8.8, 95% CI 3.07-25.53, p<0.0001) and age group 41-50 years (OR, 4.3, 95% CI 1.18-16.14, p=0.03). Among the participants with lipodystrophy 15.8% felt strongly that their current body outlook/image is worse compared to the way they looked before and 10.5% reported to dislike their mirror image. On average 24.2% avoided wearing clothing that shows their body, 15.5% of participants felt they cannot attend outdoor activities, or meet new people (13.7%) or attend events that will have new people (12.6%). Based on these findings, we conclude that; there are a significant proportion of HIV positive patients who are on treatment with HAART that had lipodystrophy and stavudine, efavirenz, and nevirapine based therapies and increasing age were important determinants of lipodystrophy in this population. Negative perceptions and attitudes regarding ones" own body was also evident in this study. We recommend that, more efforts are required to have guidelines for care of patients with long term complications of HAART in Tanzania.

296. **Njile I. Pattern and early treatment outcome of abdominal injuries at muhimbili**

national hospital dar es salaam, Tanzania. Master of Medicine (General Surgery) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Abdominal trauma is among the leading causes of morbidity and mortality in all age groups in the world. However, identifying serious intra-abdominal pathology due to trauma can be a challenge. Many injuries may not manifest during the initial assessment and treatment period. Mechanisms of injury often result in other associated injuries that may divert the physician's attention from potentially lifethreatening intra-abdominal pathology. There is an increase in reports about Motor Traffic Accidents from every corner of our country. These accidents have led to a surge in the number of patients presenting to health care centers including Muhimbili NationalHospital with abdominal trauma. Currently there are no published data on pattern of abdominal injury and our surgical department has no guidelines for management of trauma patients. A study aiming to determine the Pattern and Early Treatment Outcome of patients with Abdominal Injury was conducted at Muhimbili National Hospital. **Methodology:** A descriptive, prospective, hospital-based study involving observation of patients from admission to final outcome of management at discharge or death was carried out. Consecutive admissions of 92 patients with abdominal injuries attended to at the department of surgery Muhimbili National Hospital were enrolled in the study. The study was conducted from April to December 2011. The data were analyzed using SPSS software. **Results:** Ninety two patients were enrolled into the study. The male to female ratio was 7.4:1. Sixty two patients (67.4%) were in the age group of 21-40years. Fifty one patients (55.4%) sustained abdominal injuries following motor traffic accidents. Sixty patients had blunt injury, 32 patients had penetrating injuries. Associated injuries were found in 36.9% of patients. All the patients underwent laparotomy. The spleen was found to be the most commonly injured organ in blunt trauma constituting 33.3% of patients with blunt abdominal injuries while bowel was found to be the commonest injured intraabdominal organs occurring in 37% of all cases. Negative and non therapeutic laparotomies constituted 21% of all cases. There were 3 patients with complications and 7 deaths. The mean length of hospital stay was 5.03 days. None of the patients underwent a re-laparotomy. **Conclusions:** Blunt trauma was the commonest type of abdominal injury and the spleen was found to be the most common organ injured among patients with blunt trauma. Laparotomy was carried out in all patients with abdominal injuries, no conservative treatment was employed. FAST results were found not to be reliable to most patients with abdominal injuries. The rate of negative and non therapeutical laparotomy was high. In abdominal trauma patients the rate of post operative complications was low. **Recommendations:** Protocol for management of patients with abdominal injuries should be made and be available for guiding surgeons on management of patients with abdominal injuries. Utilization of other investigative tools such as contrast CT scan is necessary to reduce the rate of negative and non therapeutic laparotomies. Selective conservative management should be used in patients with minor abdominal injuries.

297.   **Nordin SM, Ahmad WFW, Nayan MY, Yahya N, Abdullah A, Rahman AM. A, & Yunus, O M A Conceptual Framework in Examining the Contributing Factors to Low Academic Achievement: Self-Efficacy, Cognitive Ability, Support System and Socio-Economic. International conference on management, social sciences and**

humanities 2012

There has always been a tendency in making a direct correlation between a student's academic achievement and intelligence level. Whilst this may be true, but such assumption could be plainly too simplistic as there are other contributing factors which could significantly influence a student's academic performance. Various surrounding variables need to be carefully analyzed. The learning culture and pattern adopted by a student is cultivated through various variables and underlying factors. Literature has suggested three broad dimensions for analysis which are the personality, sociological and psychological factors. This paper will discuss the conceptual framework developed to examine the contributing factors to low academic achievement within four main domains: self-efficacy, cognitive ability, support system and socio-economic. Self-efficacy can have an impact on psychological states to behavior and to motivation. It would eventually affect how a person perceives learning and their cognitive ability. Efforts and mechanisms by the schools in monitoring and supervising low achievers, and the teachers' sense of responsibility toward the students will also be part of the consideration in framing the conceptual discussion. It is also necessary to examine the parents' perceptions towards the importance of their children's education and the extent of their involvement in their children's education process as home environment marks the beginning of learning experience that shapes their attitudes towards learning.The conceptual framework will be used for an exploratory study in the Perak state to analyze the contributing factors to low academic achievement amongst the secondary school students. The 2010 Penilaian Menengah Rendah (PMR) results announcement had raised a concern as the state of Perak stands amongst the last in the list in terms of achievement. The conceptual framework provides the foundation to thoroughly analyze the reasons why Perak has almost consistently, for the past years, been amongst the bottom in the list of nation-wide standard examinations performance like PMR. An empirical research will be conducted based on the conceptual framework discussed in this paper to examine the contributing factors to low academic performance in Perak which the findings could provide an insight to design an effective and impactful short-term and long-term intervention programs and initiatives for significant academic improvements in the long run.

298. **Nshunju R. Compliance to occupational and public health requirements and associated factors in barbershops and hair dressing salons, a case of kinondoni municipality, dar es salaam,Tanzania. Master of Arts in Health Policy and Management (MA-HPM) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Hairdressing and barbering industry is one of occupations which employ significant number of young men and women. This population can be exposed to number of occupational problems such as poor posture, joint pain, prolonged standing, long working hours, missed meals, as well as being subjected to physical injuries. These problems can be reduced if barbershops and hair dressing salons are highly complying with occupational and public health regulatory and operational requirements (OHS and PH) as stipulated in Occupational Health and Safety Acts of 2003 and the Public Health Act of 2009. However, there are

disparities and relaxations in terms of compliance to the OHS and PH. This study aimed at assessing compliance to OHS & PH and associated factors in salons. Quantitative descriptive cross-sectional study was conducted in Kinondoni Municipality in Dar es salaam, Tanzania between April and May 2012. Both structured questionnaire and observational checklist was used to gather information on compliance OHS and PH requirements. A total of 381 randomly selected respondents were selected from 288 randomly selected salons from 34 wards of Kinondoni Municipality. A maximum of 2 employees were randomly sampled in each salon particularly for those with more than two workers. Majority of salons were found to moderately (69.1%, n=199) complying with OHS and PH requirements, and none were highly complied. Salons with adequate inspections were significantly ($P<0.001$) associated with high compliance to OHS and PH requirements than those with poor inspection. Moreover, Knowledge and skills on OHS and PH requirements significantly ($P<0.05$) were associated with compliance to OHS and PH requirements. Other factors such as availability of policies and regulations, law enforcement, negligence, demographic characteristics and working experience were not statistically significant associated with compliance to OHS and PH requirements. It can be recommended that Occupational Health and Safety Authority (OSHA) should adequately conduct workplace inspections and awareness program to improve compliance to OHS and PH requirement in salons.

299.   Nshunju RK Compliance to occupational and public health requirements and associated factors in barbershops and hair dressing salons, a case of kinondoni municipality, Dar es Salaam, Tanzania.Master of Arts in Health Policy and Management (MA-HPM) Dissertation 2012.Muhimbili University of Health and Allied Sciences.

Hairdressing and barbering industry is one of occupations which employ significant number of young men and women. This population can be exposed to number of occupational problems such as poor posture, joint pain, prolonged standing, long working hours, missed meals, as well as being subjected to physical injuries. These problems can be reduced if barbershops and hair dressing salons are highly complying with occupational and public health regulatory and operational requirements (OHS and PH) as stipulated in Occupational Health and Safety Acts of 2003 and the Public Health Act of 2009. However, there are disparities and relaxations in terms of compliance to the OHS and PH. This study aimed at assessing compliance to OHS & PH and associated factors in salons. Quantitative descriptive cross-sectional study was conducted in Kinondoni Municipality in Dar es salaam, Tanzania between April and May 2012. Both structured questionnaire and observational checklist was used to gather information on compliance OHS and PH requirements. A total of 381 randomly selected respondents were selected from 288 randomly selected salons from 34 wards of Kinondoni Municipality. A maximum of 2 employees were randomly sampled in each salon particularly for those with more than two workers. Majority of salons were found to moderately (69.1%, n=199) complying with OHS and PH requirements, and none were highly complied. Salons with adequate inspections were significantly ($P<0.001$) associated with high compliance to OHS and PH requirements than those with poor inspection. Moreover, Knowledge and skills on OHS and PH requirements significantly ($P<0.05$) were associated with compliance to OHS and PH requirements. Other factors such as availability of policies and regulations, law enforcement, negligence, demographic characteristics and working experience were not statistically significant associated with compliance to OHS and

PH requirements. It can be recommended that Occupational Health and Safety Authority (OSHA) should adequately conduct workplace inspections and awareness program to improve compliance to OHS and PH requirement in salons.

300. **Ntoke H. Reported sexual risky behaviours among people receiving antiretroviral treatment: the case study of kigoma/ujiji municipality. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: A lot has been invested in HIV prevention programmes globally, yet HIV infection continues to spread, although more slowly than before. Antiretroviral treatment has led into declining of morbidity and mortality from HIV disease and to improved wellbeing. It is of concern to see people who are on ART, who have experienced the infection first hand to continue practicing risky sexual behaviors. It is important, to know the motivations and forces that govern the decision to practice these behaviors among people who are on ART, so that to design effective interventions to reduce HIV transmission. **Objectives:** The main objective of this study was to explore, sexual risky behaviors among persons receiving ARVs in Kigoma/Ujiji municipality. **Materials and Methods:** A descriptive exploratory study design that aimed at in-depth collection of information from sexually-active adults on ART, targeting those attending Kigoma regional Hospital CTC in Kigoma/Ujiji municipality was employed. The study was conducted from mid June to end of July 2012. A purposive sampling technique was used to select appropriate participants to meet the objectives of the study. In-depth interviews were held with 14 (8 females, 6 males) sexually-active adults receiving ART, to understand sexual risky behaviors after initiation of treatment. **Results:** While almost all respondents except two, reported have managed to reduce sexual partners to maintain single sexual partner, more than a half of all respondents reported that they do not use condoms consistently. For both male and female respondents, a transition from multiple partners to a single regular partner began at the time of HIV testing and the resolve to stay with one partner was further strengthened by initiation of ART. A need for Materials support and inability to break the long standing relationship as claimed by some respondents seem to be a factor contributing to continue having multiple partners. This shows an existence of a gap in life skills experienced by these participants which need to be addressed by psycho-social counselors. **Conclusions:** As reported by respondents, there is inconsistent condom use, especially in stable relationships, some of which contain HIV dis barriers to condom use, and misconceptions about the harmful effects of condoms hindered their use. Among those reported inconsistent non-condom use, a desire for children was an important reason for not using condoms. The study suggests that there is a reported significant reduction in multiple concurrent sexual partners among people on ARVs, to a small extent, an increase in condom use around the time of HIV diagnosis. While disclosure of HIV status appeared to support condom use, this does not always predict protected sex. **Recommendations:** The study recommends that in-depth psycho-social long term client-or couple focused counseling should be used to identify, explore and address deep rooted psycho-social barriers to sexual risky behavioral change. cordant couples. Religious and cultural

301. **Nyakanda M. Factors influencing provision of care to hospitalized peadiatrics**

burn patients: a qualitative study among nurses in muhimbili national hospital dar es salaam, Tanzania. Master of science in Nursing (MSc. Nursing Critical Care and Trauma) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background The increase number of burn patients' admission in Muhimbili National Hospital indicated that burn injury is still a problem in our setting. In July 2011 up to June 2012 a total of 6135 paediatrics patients were admitted in MNH due to various diseases of which 319 patients were admitted due to burn injury. This is equal to 5.2% of all paediatrics admission (unpublished report). However hospital management made good coordination and availability of working equipments in order to archive optimal care for paediatric burn patients. Even though Health care providers especially nurse were facing some difficulties in provision of burn care. **Objective** The main objective of this study was to explore nurses' perceptions on factors influencing provision of care to pediatric burn patients among nurses at Muhimbili National Hospital. **Methods** Five in depth interviews were conducted in order to explore nurses' perception on factors that may influence provision of nursing care to hospitalized pediatric burn patients. This study was conducted from May 2012 to June 2012 in MNH. Simple observation method was used to complement data obtained through in-depth interviews. The study informants were sampled by using purposive sampling procedure. Data was analyzed by using content analysis approach. **Findings** The present study revealed two major categories which include motivating factors andbarriers in provision of burn care. Participants described the use of closed method of wound dressing as an important skill that accelerates healing, decrease risk of wound contamination and decreased number of contractures. Presence of team work in burn care, facilitated patients recovery through reviewed and discussed management of patients as a team. Availability of equipments helped nurses to perform nursing care smoothly. Furthermore, participants felt gratified and increased work performance when they saw patients who sustained very severe burn injury recovering and going back home. Despite the fact that burn care was found somehow successfully in Muhimbili National Hospital (MNH), participants revealed several factors that hindered provision of care. These factors include limited resources, patient workload, and lack of standard skills. Participants described that there were limited human and non human resources, such as shortage of staffing which resulted into overworking, physical and emotional exhaustion among nurses, lack of water which is the mainstay of infection prevention control, lack of specimen equipment like pus swab. Since burn patient are at risk of infection therefore they need to take pus swab frequently. Nevertheless, participants expressed that they lack standard skills on burn care since there was no special training on burn care. Instead they were teaching themselves in the sense that experienced nurses in burn unit were teaching new nurses who came to work in burn unit. **Conclusion** The finding of this study revealed that there are both positively and negatively factors that influence provision of burn care. Positive factor (motivation) needed to be maintained but action is required to be taken in order to reduce negative factors. **Recommendation** More public health enlightenment is needed on prevention and initial intervention for burns in children. Community need to be aware that prevention of burn should be a priority since caring for burnt patient is very expensive. Further studies are needed in large population since this information is not conclusive to factors influence burn care in Tanzania.

302. **Nyamtema AS, Jong AB , Urassa DP, HagenJP, van Roosmalen J. The quality of antenatal care in rural Tanzania: what is behind the number of visits?** *BMC Pregnancy and Childbirth*, (2012); 12 art. no. 70 .

Background: Antenatal care (ANC) provides an important opportunity for pregnant women with a wide range of interventions and is considered as an important basic component of reproductive health care.Methods: In 2008, severe maternal morbidity audit was established at Saint Francis Designated District Hospital (SFDDH), in Kilombero district in Tanzania, to ascertain substandard care and implement interventions. In addition, a cross-sectional descriptive study was carried out in 11 health facilities within the district to assess the quality of ANC and underlying factors in a broader view.**Results:** Of 363 severe maternal morbidities audited, only 263 (72%) ANC cards were identified. Additionally, 121 cards (with 299 ANC visits) from 11 facilities were also reviewed. Hemoglobin and urine albumin were assessed in 22% - 37% and blood pressure in 69% - 87% of all visits. Fifty two (20%) severe maternal morbidities were attributed to substandard ANC, of these 39 had severe anemia and eclampsia combined. Substandard ANC was mainly attributed to shortage of staff, equipment and consumables. There was no significant relationship between assessment of essential parameters at first ANC visit and total number of visits made (Spearman correlation coefficient, r = 0.09; p = 0.13). Several interventions were implemented and others were proposed to those in control of the health system.**Conclusions:** This article reflects a worrisome state of substandard ANC in rural Tanzania resulting from inadequate human workforce and material resources for maternal health, and its adverse impacts on maternal wellbeing. These results suggest urgent response from those in control of the health system to invest more resources to avert the situation in order to enhance maternal health in this country.

303. **O'Doherty K, Ibrahim T, Hawkins A, Burgess M, & Watson P. Managing the introduction of biobanks to potential participants: Lessons from a deliberative public forum.** *Biopreservation and biobanking*. 2012: *10* (1): 12-21.

Ongoing debate exists around how best to manage the issue of informed consent for research involving human tissue biobanks. However, the issue is well recognized and covered in the academic literature. A related and arguably equally important issue that to date has not received much attention is how best to manage the process of identifying and initially contacting individuals for their participation in a biobank. While many population-based biobanks strive for random sampling of healthy participants from the general population, disease-based biobanks usually need to rely on some sort of referral process to achieve specificity for type and subcategories of disease. There are thus numerous ethical implications regarding the way in which this referral process is managed. In this article we begin by providing a brief outline of the nature of the problems associated with the initial introduction between a biobank and potential research participants. We then consider data from a recent public deliberation on the topic of human tissue biobanking. In these discussions, participants were posed questions regarding their views pertaining to the introduction of potential donors to biobanks, and asked to make recommendations to be

considered by policy makers in British Columbia, Canada. Based on these data we conclude that there is general agreement that introduction of research biobanks to potential donors should be conducted face to face, and by a medical professional known to the donor, and depending on donor circumstances, is acceptable during either pre- or postoperative periods. The strong preference for the introduction to involve a family physician should be considered in the future design of biobank contact and consent processes.

304. **O'Laughlin KN, Wyatt MA, Kaaya S, Bangsberg DR, Ware NC. How treatment partners help: Social analysis of an african adherence support intervention.***AIDS and Behavior***, (2012); 16 (5): 1308-1315.**

Treatment partnering is an adherence intervention developed in sub-Saharan Africa. This paper describes the additional social functions that treatment partners serve and shows how these functions contribute to health and survival for patients with HIV/AIDS. Ninetyeight minimally structured interviews were conducted with twenty pairs of adult HIV/AIDS patients (N = 20) and treatment partners (N = 20) treated at a public HIV-care setting in Tanzania. Four social functions were identified using inductive, category construction and interpretive methods of analysis: (1) encouraging disclosure; (2) combating stigma; (3) restoring hope; and (4) reducing social difference. These functions work to restore social connections and reverse the isolating effects of HIV/AIDS, strengthening access to essential community safety nets. Besides encouraging ARV adherence, treatment partners contribute to the social health of patients. Social health as well as HIV treatment success is essential to survival for persons living with HIV/AIDS in sub-Saharan Africa.

305. **Olwit C. Chronic sorrow: lived experiences of caregivers of schizophrenic patients in butabika mental hospital, kampala, Uganda. Master of Nursing (Mental Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background. Grief is a central experience by people diagnosed with mental illness, families, and friends.Chronic sorrow is defined as pervasive sadness and/or other emotional reactions commonly associated with grief that is permanent, periodic and potentially progressive in nature. It is viewed as a normal reaction to loss that may be to a single event or ongoing. During the experience of chronic sorrow, people feel emotional commotion, discomfort, & hopelessness. It may progress to pathological grief or depression. It may also trigger some of the psychiatric disorders in individuals who are vulnerable. No documented study in Uganda has addressed the problem of chronic sorrow among caregivers of patients with mental illness. **Objective** The theory of chronic sorrow was used to guide this study. The aim of the study was to explore the experience of chronic sorrow among caregivers of patients with schizophrenia in Uganda. **Methodology** This study employed a descriptive qualitative design using Focus Groups and In-depth interviews. The research was carried out at Butabika National Mental Hospital in Kampala. The study was conducted in Luganda. There were 10 in-depth interviews and 2 focused group discussions. The sample size was based on the principle of data saturation and purposive sampling technique was used. The caregivers who met the inclusion criteria, consented and were interviewed using the chronic sorrow

questionnaire guide (caregiver version). The interviews were recorded, transcribed, translated to English and analyzed through content analysis of a framework by Graneheim & Lundman (2004**). Results** 9 out of 10 caregivers experienced Chronic Sorrow. The triggers identified were, unending care giving, change in behavior (refusal to take drugs, refusal to go to hospital), management of crises (during relapse and side sides of drugs), society reaction to mental illness (abandoning and mistreating patients, discrimination) and missed companionship. Unhelpful factors were poor communication by health workers, stigma from community, Uncooperative police. The coping strategies used were, interpersonal strategies, action oriented activities (keeping busy), positive thinking, avoidance, emotional (crying). Caregivers indicated that health workers should show understanding, communicate properly, and provide information, facts about mental illness to them and community. Taking mental health services nearer to the people throughout the country and follow up visits were also suggested. **Conclusions.** Caregivers of patients with schizophrenia are most likely to have chronic sorrow, the sadness and the grief related feelings are triggered by different factors which can be internal or external. Effective coping strategies are needed to be used by the caregivers in order to help them keep up with the task of caregiving and health workers have a great role to play. **Recommendations**. Refresher trainings in customer care and public relations should be carried out on a regular basis to remind health workers of their mandates and obligations. Communication and counseling skills should also be enhanced in teaching Institutions. Nurses should be prepared to assist caregivers and family members at any point of meeting within the health facility. Policy makers should increase the number of health workers in order to reduce on the work load and burnouts. Different stakeholders (Community, Police, Political leaders, Development partners) should be enlightened on their roles pertaining mental health in the country

306.   **Oswald A.The effect of working environment on workers performance: the case of reproductive and child health care providers in tarime district. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: The problems of inadequate working environment coupled with low performance of health workers in the health sector in low and middle-income countries like Tanzania, is receiving increased global attention. Some of the reviewed studies done in the country have looked at health worker performance and working environment factors with limited information on the role of working environment and performance of health workers especially focusing on how working environment affect the availability, competence, productivity and responsiveness combined as they affect elements of performance of health workers in reproductive and child health care. So the study looked at the effect of working environment on the performance of reproductive and child health care providers in Tarime district taking into consideration the four indicators of performance which are availability, competence, productivity and responsiveness. **Objective:** the main objective of this study was to determine the effect of working environment on the performance of reproductive and child health care providers in Tarime district. **Materials and methods:** A cross sectional exploratory study was conducted in 12 health facilities in the district. One hospital, three health centres and eight dispensaries were involved the study. Data was collected using

closed and open ended questionnaires. The main variables in the questionnaire were socio-demographic characteristics (sex, age, marital status and education level), availability of drugs, office building space, presence of privacy, availability of medical supplies. 30 health providers and 147 clients were interviewed. Analysis of data was done by using SPSS version 15.0. **Result:** The result reveals that the working environment elements have a significant effect on the performance of health providers in the Reproductive and Child Health unit. These elements are presence of office building with the standardized coefficient of 0.369 (p= 0.014), availability of drugs with the standardized coefficient of 0.362 (p= 0.016) and availability of equipment with the standardized coefficient of 0.369 (p = 0.012). **Conclusion**: The work environment has effect on the performance level of employees. Absence of office building, drugs, equipment can affect the performance of the employees.

307. **Outwater A, Tarimo E & Campbell JC. Contextual factors putting DSM youth at risk for death by mob violence: a qualitative study.** *Injury prevention*.**2012; *18*(1):A144-A144.**

Background Mob violence, a collective community action arising against individuals or small groups, who are perceived as threatening social safety, is known to occur around the world. More than 200 male youth, mostly petty thieves, are killed annually in Dar es Salaam, Tanzania (DSM) by community mobs. **Purpose:** The purpose of the research was to find contextual factors putting youth at risk for death by mob violence in DSM. **Methods:** Data for this qualitative study were gathered through face-to-face interviews (22) and a focus group discussion. All interviews were audiotaped. Source data were imported into NVivo7. Coding and analysis took place within NVivo. **Results:**49 nodes were identified. Seven were mentioned by more than 10 respondents. Almost all respondents (20) reported that lack of employment was a major factor leading to the victims' death. Twelve respondents each mentioned lack of human rights (12), and good or any parenting, and the difficulties of transitioning from childhood to adulthood, and often rural to urban. The police (14), God (11), and government (11) were also viewed as important factors. **Significance to the Field:** Unless youth needs for employment, in urban and rural areas are supported, there will not be peace at the community level. Research is needed to understand more clearly the factors pulling the youth to the city and the factors pushing youth out of the rural areas.

308. **Outwater AH, Tarimo EA, Miller JE & Campbell JC. Meanings of Care by Bereaved Relatives of Homicide Victims in Dar es Salaam, Tanzania Implications for Nursing.** *Journal of Transcultural Nursing*. **2012; *23*(4): 397-405.**

Purpose: The purpose was to describe the meanings of care, *kutunza*, for the deceased and the relatives of homicide victims. The secondary aim was to identify ways in which nurses could best console the families. **Method:** An ethnonursing method was employed. Relatives of homicide victims in Dar es Salaam, Tanzania, were interviewed at a mortuary, using an interview guide constructed with Leininger's enablers as major elements. Content analysis was performed according to Leininger's phases of ethnonursing analysis of qualitative data. **Findings:** Families of 30 homicide victims were studied. The mean age of the victims was 30.7 years, range 17 to 47 years. All victims, except 1, were male. The informants included

29 relatives and two close friends. The following four themes were identified: (a) providing basic needs, (b) paying attention as if one were kin, (c) consoling through gathering, and (d) caring for each other. **Conclusions:** Care is manifested by respectful attention to the preparation of the deceased and by providing an environment by which the community can gather to console the bereaved family. **Implications for Nursing:** Respectful preparation of the deceased's body is essential. Nurses can provide emotional support to the families and find an area where the extended family can grieve and console each other.

309.   Pallangyo K, Debas HT, Lyamuya E, Loeser H, Mkony CA, O'Sullivan PS, Kaaya EE   & Macfarlane SB. Partnering on education for health: Muhimbili University of Health and Allied Sciences and the university of California San Francisco. *Journal of public health policy.***2012. S13-S22.**

In 2005, Muhimbili University of Health and Allied Sciences (MUHAS) in Tanzania and the University of California San Francisco (UCSF) in the United States joined to form a partnership across all the schools in our institutions. Although our goal is to address the health workforce crisis in Tanzania, we have gained much as institutions. We review the work undertaken and point out how this education partnership differs from many research collaborations. Important characteristics include: (i) activities grew out of MUHAS's institutional needs, but also benefit UCSF; (ii) working across professions changed the discourse from 'medical education' to 'health professions education'; (iii) challenged by gaps in our respective health-care systems, both institutions chose a new focus, interprofessional team work; (iv) despite being so differently resourced, MUHAS and UCSF seek strategies to address growing class sizes; and (v) we involved a wider range of people – faculty, administrators, students, and residents – at both institutions than is usually the case with research. This partnership has convinced us to exhort other academic leaders in the health arena to seek opportunities together to enlighten and enliven our educational enterprises.

310.   Pamba A, Richardson ND, Carter N, Duparc S, Premji Z, Tiono AB & Luzzatto L. (2012). Clinical spectrum and severity of hemolytic anemia in glucose 6-phosphate dehydrogenase–deficient children receiving dapsone. *Blood.***2012;** *120***(20): 4123-4133**.

Drug-induced acute hemolytic anemia led to the discovery of G6PD deficiency. However, most clinical data are from isolated case reports. In 2 clinical trials of antimalarial preparations containing dapsone (4,4′-diaminodiphenylsulfone; 2.5 mg/kg once daily for 3 days), 95 G6PD-deficient hemizygous boys, 24 G6PD-deficient homozygous girls, and 200 girls heterozygous for G6PD deficiency received this agent. In the first 2 groups, there was a maximum decrease in hemoglobin averaging −2.64 g/dL (range −6.70 to +0.30 g/dL), which was significantly greater than for the comparator group receiving artemether-lumefantrine (adjusted difference −1.46 g/dL; 95% confidence interval −1.76, −1.15). Hemoglobin concentrations were decreased by ≥ 40% versus pretreatment in 24/119 (20.2%) of the G6PD-deficient children; 13/119 (10.9%) required blood transfusion. In the heterozygous girls, the mean maximum decrease in hemoglobin was −1.83 g/dL (range +0.90 to −5.20 g/dL); 1 in 200 (0.5%) required blood transfusion. All children eventually recovered. All the G6PD-deficient children had the G6PD A− variant, ie, mutations V68M and N126D. Drug-induced acute hemolytic anemia in G6PD A− subjects can be life-threatening, depending on

the nature and dosage of the drug trigger. Therefore, contrary to current perception, in clinical terms the A− type of G6PD deficiency cannot be regarded as mild. This study is registered at http://www.clinicaltrials.gov as NCT00344006 and NCT00371735.

311. **Panga B. Seroprevalence of hepatitis b surface antigen and associated factors among pregnant women attending antenatal care clinic in moshi municipality, kilimanjaro region 2012. Master of Science in Epidemiology and Laboratory Management Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Potential mother to child transmission of Hepatitis B virus (HBV) is a major concern, because of the associated long-term morbidity and mortality of these infections. Most chronic Hepatitis B Virus (HBV) infections occur during childhood, either from infected mother to child (perinatal transmission) or from one child to another (horizontal transmission). The presence of Hepatitis B e Antigen (HBeAg) among HBV positive mothers is an indicator of active infection and the potential for mother to child transmission of HBV infection. This study investigated HBeAg among Hepatitis B surface Antigen (HBsAg) positive among women attending antenatal to access the potential risk of mother to child transmission of the virus.**Materials and Methodology** This was a cross- sectional study that was conducted among 346 pregnant women attending antenatal clinics at Moshi Municipality between January and March 2012. Participants were enrolled consecutively after consenting. Interviews were conducted to obtain information regarding potential risk factors. Blood was collected and screened for hepatitis B screening by Antigen Rapid test strip (HBsAg) and positive sample was subjected to ELFA (BIOMUREX-SA) for HBeAg detection. Syphilis was tested by rapid plasma reagin (RPR). HIV was tested by SD BIOLINE and Determine, discordant result was resolved with Unigold. IgG antibodies to HCV were detected by ONE STEP Ant-HCV Test technique (SD BIOLINE HCV). Data was coded, entered, cleaned, validated and analyzed using Epi Info version 3.5.1 **Results** A total of 346 pregnant women were recruited. Their mean age was 24.7 (SD 5,4) years. About 36 pregnant women (10%) had serological evidence of infection with at least one pathogen and 3 (0.8%) had multiple infections. Overall the seroprevalence of HBV was 2.0%. The seroprevalence of HIV, HCV and syphilis were 4.9%, 0.6%, and 2.9%, respectively. One (14.3%) had HBV and syphilis co-infection. Among the seven women who were HBsAg seropositive one (14.3%) was positive for HBe antigen. The risk factors for HBV were age group 30-34 yrs, mutiple partners and scarification (OR 4.9, 95%CI 1.01-24.13, OR 3.09, 95% CI 1.01-9.42, and OR 10.1, 95%CI 1.89-54.20 respectively) **Conclusion and Recommendations** Based on the prevalence of HBeAg among the HBsAg pregnant mothers there is a need of screening all pregnant women for HBsAg and for providing early immunization at birth to infants of HBeAg infected mothers.

312. **Pemba S, Macfarlane SB, Mpembeni R, Goodell AJ, & Kaaya EE. Tracking university graduates in the workforce: Information to improve education and health systems in Tanzania.** *Journal of public health policy,***2012; S202-S215.**

With a severe shortage of highly trained health professionals, Tanzania must make the best possible use of available human resources and support training institutions to educate more graduates. We highlight the overlooked but significant role of universities in collecting, managing, and using human resources data in Tanzania and in other countries struggling to

build their health workforces. Although universities, professional councils, ministries of health, education, and finance, and non-governmental organizations in Tanzania all maintain databases that include details of health professionals' education, registration, and employment, they do not make the information easily accessible to one another. Using as an example Muhimbili University of Health and Allied Sciences – the leading public institution for health professions education in Tanzania – we explore how training institutions can gather and use data to target and improve the quality of education for increasing numbers of graduates. We specifically examine the substantial challenge universities face in locating more members of each graduating class and conclude with recommendations about how the situation can be improved.

313.   Pembe AB, Wangwe PJT, Massawe SN. Emergency peripartum hysterectomies at muhimbili national hospital, Tanzania: A review of cases from 2003 to 2007 *Tanzania Journal of Health Research***, (2012): 14 (1).**

A retrospective review of all cases of emergency peripartum hysterectomy performed between January 1, 2003 and December 31, 2007 at Muhimbili National Hospital was done to determine the incidence, indications and complications, background characteristics, antenatal care attendance, referral status, and maternal and foetal outcomes. There were 55,152 deliveries during the study period and 165 cases of emergency peripartum hysterectomy, giving the incidence of emergency peripartum hysterectomy of 3 per 1000 deliveries. The main indication was uterine rupture (79%) followed by severe post-partum haemorrhage due to uterine atony (12.7%). The case fatality rate was 10.3% where as perinatal mortality rate was 7.7 per 1000 deliveries. The common complication identified intraoperatively was severe haemorrhage which accounted for 39.4% where as intensive care unit admissions (14.4%) and febrile morbidity (12.4%) were common after the operation. Blood was ordered in all cases but in 31 cases it was indicated that it was not available. Seventy nine patients received blood transfusion with the maximum number of units given to one patient being eight. Twenty two patients were given fresh frozen plasma (FFP), the median number of units given was two (range = 1- 6). In conclusion, emergency peripartum hysterectomy is a life saving procedure and very common at MNH. The most common indication was ruptured uterus followed by severe postpartum haemorrhage. More than half of the patients underwent emergency peripartum hysterectomy were referred from other health facilities with ruptured or suspected ruptured uterus. The procedure was associated with unacceptably high maternal and perinatal morbidity and mortality.

314.   Peter B. Prevalence of twin deliveries and perinatal outcomes in public hospitals in dar es salaam. Master of Medicine (Obstetrics and Gynaecology) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*
Background: Twin fetuses commonly result from fertilization of two separate ova while about one third of twins arise from a single fertilized ovum that subsequently divides into two similar structures. The occurrence and frequency of twinning varies across human populations. The perinatal mortality rates are five times higher in twin pregnancies than singleton pregnancies, therefore antenatal management and safe delivery of twin pregnancies are important issues in obstetrics. Reduction of perinatal mortality rate requires identification

of causes and determinants of neonatal deaths and stillbirths, with subsequent strategies to tackle them. **Objectives** This study aimed at providing data on the proportion of twin deliveries in four public hospitals in Dar es Salaam and an insight on the fetal outcomes in relation to their modes of delivery. **Methodology** This was a cross sectional study in which all women who delivered twin babies were interviewed andmedical records on their delivery summary wereobtained in the labour or post natal wards atMuhimbili National Hospital, Temeke, Mwananyamala and Amanaminicipal hospitals in Dar es Salaam between July and December 2011. A structured Swahili questionnaire was used during the initial interview and post natal follow up was done on seventh day by contacting women by telephone to establish the neonatal status. **Results** There were 33638 total deliveries of which 672 were twin deliveries making the prevalence of 2.0% (20 per 1,000 births).Of all twin deliveries analyzed (666), 373(56.0%) had the diagnosis of twin pregnancy made antenatally and only 124(18.6%) had their mode of delivery planned.Vaginal delivery was the major mode of delivery accounting for 77.3% of all twin deliveries, whereas combined delivery in which the first twin was deliveredvaginally and the second twin by caesarian section accounted for only 2.6%. Three quarters (76.2%) of all caesarian sections in twin deliveries were done on emergency basis as compared to 23.8% which were planned.A total 1332 babies were delivered from 666 pairs, at birth1252(94%) were alive, 60(4.5%)were fresh stillbirths and 20(1.5%) were macerated stillbirths.Low Apgar score was more to first twins 76(14.5%) delivered vaginally compared to first twins 5(3.5%) delivered by caesarian section and this difference was statistically significant (p-value=0.003). Also more second twins 116(22.2%) delivery vaginally had low Apgar score compared to second twins 11(7.7%) delivered by caesarian section and this difference was statistically difference (p-value=0.001). Second twins delivered vaginally at 30 minutes or longer27(48.2%) had low Apgar scorecompared to twins delivered in less than 30 minutes 72(15-4%)and this was statistically significant both at one minute and five minutes (p-value<0.0001). **Conclusion** Twin deliveries in four public hospitals in Dar es Salaam contribute to about 2.0% of all deliveries, with MNH having the highest proportion. Majority are delivered vaginally; while for those who delivered by caesarian section, the operation was largely done on emergency basis.There was a significant association between vaginal delivery and low Apgar score at one minute. Long duration of twin to twin delivery interval wasassociated with low apgar score of the second twins delivered vaginally. Perinatal mortality rate was also higher in the second twins compared to the first twins. **Recommendations** Formulation of protocols or guidelines on the antenatal and intrapartum management of twin pregnancyin the four hospitals is needed in order to improve the perinatal outcomes. The time delivery interval of the second twin should be made as short as possible by active management of all second twins.

315.   **Podola L, Bauer A, Haule A, Sudi L, Nilsson C, Godoy-Ramirez K, Mann P, Missanga M, Kaluwa B, Lyamuya E, Hoelscher M, Wahren B, Sandström E, Biberfeld G, Geldmacher C,& Kroidl A. Breadth, phenotype and functionality of Gag-specific T cell responses induced by a heterologous DNA/MVA prime-boost HIV-1 vaccine regimen.** *Retrovirology*.**2012;** *9*(**2**): **P273.**

Background: Broad Gag recognition and polyfunctionality of vaccineinduced AIDS virus-specific T cell responses correlate with better viral control in non-human primates and also in

chronically HIV-infected individuals. **Methods:** Breadth and polyfunctionality of HIV-vaccine induced Gag-specific T cell responses were investigated in healthy Tanzanian volunteers who participated in the Tanzania Mozambique HIV vaccine trial (TaMoVac 01). Vaccine recipients received 3x 0.6 or 1.0mg intradermal injections of multiclade, multigene HIV-DNA vaccine boosted with 2x heterologous Modified Vaccinia Ankara (MVA)-CMDR. Using fresh peripheral blood mononuclear cells, the breadth of response was determined after the first MVA-CMDR boost using peptide pools for 9 successive Gag regions with an IFN-gamma ELISpot assay. Functionality (IFN-gamma, IL-2, TNF-alpha, Mip-1beta and the degranulation marker CD107) and phenotype (CD3, CD4, CD8) of HIV-specific T cells were assessed using flow cytometry in 52 participants after stimulation with peptide pools covering whole Gag-CMDR protein. **Results:** Two weeks after the first MVA-CMDR boost, a median of 2 Gag regions were recognized (range: 0-9, Placebos not excluded) by 45 participants. There was a strong linear correlation between the magnitude and the breadth of vaccine-induced Gag recognition (p<0.0001, r2=0.44). 13 (25%), 13 (25%), 3 (6%) and 29 (56%) of 52 subjects mounted IFN-gamma+ Gag-specific T cells that were either only CD4+, CD4+ & CD8+, only CD8+, or CD4+ and/or CD8+, respectively. Fifty percent of IFN-gamma+ Gag-specific CD4 T cells co-expressed TNF-alpha and/or IL-2. Co-expression of Mip-1beta or CD107 was reduced compared to CMVpp65-specific CD4 T-cells, which were measured simultaneously. More than 50% of IFN-gamma+ Gag-specific CD8 T-cells co-expressed CCR5 ligand Mip- 1beta and a large proportion of these had degranulated. **Conclusion:**The TaMoVac-01 HIV-1 vaccine regimen induces a relatively broad Gag-specific response frequently dominated by CD4 T cells, many of which co-express IL-2 and/or TNF-alpha, but also induces detectable Gag-specific CD8 T-cells in a third of vaccine recipients.

316.   **Prithipal S, & Ibrahim T. An audit of peripartum cardiomyopathy at Inkosi Albert Luthuli Central Hospital: 2004-2011.** *Protocol Submission & Administration.* **2012.**

To identify all patients diagnosed with peripartum cardiomyopathy at Inkosi Albert Luthuli Central Hospital (IALCH) between 2004-2011. 2. To describe common features amongst patients with respect to demographics, presentation, treatment and outcome. 3. Determine the poor prognostic features in terms of mortality. 4. To determine the incidence of HIV in this group and its impact on mortality.

317.   **Prytherch H, Kakoko DCV, Leshabari MT, Sauerborn R & Marx M. Maternal and newborn healthcare providers in rural Tanzania: in-depth interviews exploring influences on motivation, performance and job satisfaction.** *Rural & Remote Health,* **2012;***12*(3). **p1-15.**

Introduction: Major improvements in maternal and neonatal health (MNH) remain elusive in Tanzania. The causes are closely related to the health system and overall human resource policy. Just 35% of the required workforce is actually in place and 43% of available staff consists of lower-level cadres such as auxiliaries. Staff motivation is also a challenge. In rural areas the problems of recruiting and retaining health staff are most pronounced. Yet, it

is here that the majority of the population continues to reside. A detailed understanding of the influences on the motivation, performance and job satisfaction of providers at rural, primary level facilities was sought to inform a research project in its early stages. The providers approached were those found to be delivering MNH care on the ground, and thus include auxiliary staff. Much of the previous work on motivation has focused on defined professional groups such as physicians and nurses. While attention has recently broadened to also include mid-level providers, the views of auxiliary health workers have seldom been explored. Methods: In-depth interviews were the methodology of choice. An interview guideline was prepared with the involvement of Tanzanian psychologists, sociologists and health professionals to ensure the instrument was rooted in the socio-cultural setting of its application. Interviews were conducted with 25 MNH providers, 8 facility and district managers, and 2 policy-makers. Results: Key sources of encouragement for all the types of respondents included community appreciation, perceived government and development partner support for MNH, and on-the-job learning. Discouragements were overwhelmingly financial in nature, but also included facility understaffing and the resulting workload, malfunction of the promotion system as well as health and safety, and security issues. Low-level cadres were found to be particularly discouraged. Difficulties and weaknesses in the management of rural facilities were revealed. Basic steps that could improve performance appeared to be overlooked. Motivation was generally referred to as being fair or low. However, all types of providers derived quite a strong degree of satisfaction, of an intrinsic nature, from their work. Conclusions: The influences on MNH provider motivation, performance and satisfaction were shown to be complex and to span different levels. Variations in the use of terms and concepts pertaining to motivation were found, and further clarification is needed. Intrinsic rewards play a role in continued provider willingness to exert an effort at work. In the critical area of MNH and the rural setting many providers, particularly auxiliary staff, felt poorly supported. The causes of discouragement were broadly divided into those requiring renewed policy attention and those which could be addressed by strengthening the skills of rural facility managers, enhancing the status of their role, and increasing the support they receive from higher levels of the health system. Given the increased reliance on staff with lower-levels of training in rural areas, the importance of the latter has never been greater.

318. **Prytherch H, Leshabari MT, Wiskow C, Aninanya GA, Kakoko DC, Kagone M, Burghardt J, Kynast-wolf G, Marx M & Sauerborn R. The challenges of developing an instrument to assess health provider motivation at primary care level in rural Burkina Faso, Ghana and Tanzania.** *Global health action*.**2012; 5:19120**

Background: The quality of health care depends on the competence and motivation of the health workers that provide it. In the West, several tools exist to measure worker motivation, and some have been applied to the health sector. However, none have been validated for use in sub-Saharan Africa. The complexity of such tools has also led to concerns about their application at primary care level. **Objective**: To develop a common instrument to monitor any changes in maternal and neonatal health (MNH) care provider motivation resulting from the introduction of pilot interventions in rural, primary level facilities in Ghana, Burkina Faso, and Tanzania. **Design**: Initially, a conceptual framework was developed. Based upon

this, a literature review and preliminary qualitative research, an English-language instrument was developed and validated in an iterative process with experts from the three countries involved. The instrument was then piloted in Ghana. Reliability testing and exploratory factor analysis were used to produce a final, parsimonious version. **Results and discussion**: This paper describes the actual process of developing the instrument. Consequently, the concepts and items that did not perform well psychometrically at pre-test are first presented and discussed. The final version of the instrument, which comprises 42 items for self-assessment and eight for peer-assessment, is then shown. This is followed by a presentation and discussion of the findings from first use of the instrument with MNH providers from 12 rural, primary level facilities in each of the three countries. **Conclusions**; It is possible to undertake work of this nature at primary health care level, particularly if the instruments are kept as straightforward as possible and well introduced. However, their development requires very lengthy preparatory periods. The effort needed to adapt such instruments for use in different countries within the region of sub-Saharan Africa should not be underestimated.

319.　　**Puspitasari P, Razak JA, & Yahya N. . Ammonia synthesis using magnetic induction method (MIM). In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES. 2012, September AIP Publishing. 2012;(ICFAS2012) 1482 (1): 605-610.**

The most challenging issues for ammonia synthesis is to get the high yield. New approach of ammonia synthesis by using Magnetic Induction Method (MIM) and the Helmholtz Coils has been proposed. The ammonia detection was done by using Kjeldahl Method and FTIR. The system was designed by using Autocad software. The magnetic field of MIM was vary from 100mT-200mT and the magnetic field for the Helmholtz coils was 14mT. The FTIR result shows that ammonia has been successfully formed at stretching peaks 1097,1119,1162,1236, 1377, and 1464 cm^{-1}. UV-VIS result shows the ammonia bond at 195nm of wavelength. The ammonia yield was increase to 244.72μmole/g.h by using the MIM and six pairs of Helmholtz coils. Therefore this new method will be a new promising method to achieve the high yield ammonia at ambient condition (at 25δC and 1atm), under the Magnetic Induction Method (MIM).

320.　　**Qureshi AA IbrahimT, Rennie W and Furlong AJ .Dynamic ultrasound assessment of the effects of knee and ankle position on achilles tendon apposition following acute rupture.2012.**

Aim To determine the effects of knee and ankle position on tendo Achilles (TA) gap distance in patients with acute rupture using ultrasound. **Methods** Twenty seven patients with twenty-eight acute complete TA ruptures confirmed on ultrasound were recruited within a week of injury. The mean age at presentation was 42 years (range 23-80 years). Ultrasound measurements included location of the rupture and the gap distance between the superficial tendon edges with the ankle in neutral and knee extended. The gap distance was sequentially measured with the foot in maximum equinus and 0°, 30°, 60° and 90° of knee flexion. **Results** The mean distance of the rupture from the enthesis was 52mm (range: 40-76mm). The mean gap distance with the ankle in neutral and knee extended was 11.4mm (95%CI:

9.9, 12.9). This reduced to 4.8mm (95%CI: 3.3, 6.4) when the foot was in maximum equinus, 3.8mm (95%CI: 2.5, 5.1) with 30° knee flexion, 2.6mm (95%CI: 1.7, 3.6) with 60° knee flexion and 1.5mm (95% CI: 0.8, 2.2) with 90° knee flexion. Expressing the reduction in gap distance with each successive position as a percentage of the gap distance with the knee extended and ankle in neutral revealed a mean reduction of 58.9%, 66.9%, 77.1% and 85.9% with maximum equinus and 0°, 30°, 60° and 90° of knee flexion respectively. The difference in gap distance between each of these positions was statistically significant ($p<0.05$). **Discussion** Maximum equinus alone significantly reduces the gap distance in acute TA rupture. Increasing knee flexion demonstrates a lesser effect throughout the initial 90° arc suggesting apposition is encouraged by use of a below knee maximum equinus cast permitting full knee flexion.

321. **Rabiel H. The pattern of prognostic indicators among women with breast cancer undergoing modified radical mastectomy at muhimbili national hospital (mnh) and tumaini hospital, dar es salaam Tanzania. Master of Medicine (General Surgery) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Breast cancer represents the most common cancer in women in the world. It is the second most common malignancy among females in sub-Saharan African countries including Tanzania, the leading cancer being that of uterine cervix. Worldwide, the incidence of breast cancer is 1, 000,000 cases per year and causes approximately 373,000 deaths yearly. Prognostic indicators in breast cancer have been found to influence use of adjuvant therapy following mastectomy by predicting patients with risks on survival and recurrence. In Tanzania, data on prognostic indicators is lacking. The main objective of the study was to determine the pattern of prognostic indicators among women with breast cancer undergoing modified radical mastectomy (MRM) at Muhimbili National Hospital and Tumaini Hospital, Dar es Salaam. **Methodology**: A hospital-based prospective cross-sectional study was carried out that included female patients undergoing MRM from April 2011 to January 2012 with calculated minimum sample size of 84 patients. Patients with clinical stage I-III disease were enrolled in the study after being scheduled for mastectomy. Patients with evidence of distant metastasis after a chest x-ray and abdomino-pelvic ultrasound i.e. stage IV were excluded. The surgical specimen consisting of mastectomy tissue and axillary lymphnodes was submitted to the histopathology laboratory to determine grade, type, nodal status and margins status. Data collection was done using a structured questionnaire and analyzed using SPSS software. **Results:** During 10 months of study, 348 patients were admitted with breast cancer. Eighty six (86) patients met the inclusion criteria to the study. Age at diagnosis was 28-79yrs with mean age of 52.08years. Ten percent (10.6%) were ≤35years, 55% were 36 - 55 years and 33.1% were above 55years. Eighty nine percent (89%) of study population attained menarche above the age of 11yrs, with mean age of 14.3years. About fifty six percent (56%) were postmenopausal with 22.9% attaining menopause at the age of 55yrs or more. Majority (78%) were multipara and only 7.1% nulliparous. Most (87.3%) of them had their first live birth below the age of 30years. Family history of breast cancer was reported in 14.1% of patients and 37.6% reported use of hormonal contraceptives. Among the study population, 5.9% were smokers and 27.1% were social alcohol drinkers. Most of our patients (61%) had T4b disease, 75.6% had positive axillary nodes where 42.7% had 4-9 (N2

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disease).The commonest histological type was invasive ductal carcinoma (91.9%). Lobular carcinoma, medullary and mucinous carcinoma together accounted for only 8.1%. Eighty three percent (83.7%) of our patients presented with stage III, 16.3% with stage II disease, and none at stage I. The intermediate and high grade tumor accounted for 73.5%. Twenty five percent (25%) of our patients had positive surgical margins with 25% positive base following MRM. **Conclusion:** Most breast cancer patients treated surgically at MNH present with a stage III disease and have been shown to have unfavorable prognostic indicators. The presentation is of primary tumor size with skin infiltration, positive axillary lymph nodes and a risky histological grade i.e. intermediate and high grade. Despite locally advanced disease the majority have negative surgical margins following modified radical mastectomy. **Recommendation:** A sustainable screening program to diagnose patients at early stage of disease is mandatory. Public education on breast self examination is required to involve women in early diagnosis of disease. A follow up study is needed to determine how these patients fare after treatment to allow individualized type of management.

322.	**Rahatgaonkar V, Mehendale S, Mukherjee P, Karmakar A, Biswas S, De S, & UmaMaheshwaraRao O. Cervical cytology in women with abnormal cervix. Journal of Pharmacy.2012; 2 (5):1-4.**

Objectives: To study cervical cytology in women with abnormal cervical findings on visual inspection. **Methods**:- Descriptive analytical study was conducted in Department of Gynecology & Obstetrics, Bharati Vidyapeeth Medical College, Pune, India.1600 women from Gynecology OPD having abnormal cervical findings on visual inspection were included in study. These women were subjected for Pap smear. **Results:** - Inflammatory changes were seen in 47.75% and precancerous lesions seen in 9.56% patients. Out of which LSIL was seen in 6.75% and HSIL was (CIN II & CIN III) in 2.81% of patients. In present study mean age for CIN was 38.13 ± 9.03 years. Malignant lesions were detected in 0.56% of patients, maximum in age group 41-45 years. **Conclusion:** - Women with abnormal cervical findings on visual inspection should be subjected to Pap smear to detect the disease in precancerous stage & to lower the mortality & morbidity.

323.	**Ramli A, Kun LS, Kait CF, Yahya N, & Daud H. (2012, November). Effect of calcination method on the product distribution from catalytic degradation of polystyrene in the presence of 1% Pd/Al2O3 catalysts. In INTERNATIONAL CONFERENCE ON NANOTECHNOLOGY-RESEARCH AND COMMERCIALIZATION 2011;(ICONT 2011) (Vol. 1502, No. 1, pp. 73-81): AIP Publishing.**

Incipient wetness impregnation method was used to prepare 1% Pd/$Al2O3$ catalyst which was calcined at 500 °C for 16 hr as well as in a domestic microwave at 650W for 5 and 10 min. These catalysts were tested in the catalytic degradation of polystyrene (PS) into liquid fuels at catalyst to PS ratio of 0.2 (w/w). The organic liquid product (OLP) collected was analysed using Gas Chromatography (GC). Results show that the conventional calcined catalyst gives petrol as the main product while kerosene was the main product for the

microwave calcined catalysts.

324.   Razak JA, Sufian S, Shaari KZK, Puspitasari P, Hoe TK, & Yahya N. Synthesis, characterization and application of Y3Fe5O12 nanocatalyst for green production of NH3 using magnetic induction method (MIM). In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012;(ICFAS2012). 2012, September; (Vol. 1482, No. 1, pp. 633-638): AIP Publishing.

$Y3Fe5O12$ (YIG) was prepared through sol-gel technique and sintered at three different temperatures (1000-1200δC). Various characterizations on the morphological and structural properties of produced YIG have been done as to understand the potential of this unique magnetic type nanomaterial to be used in the catalyst application for ammonia synthesis at ambient or green production environment. YIG catalyst exposed under magnetic induction of 0.1 T produced about 242.56μmol/h.g-cat yield of ammonia ($NH3$) at freezing reaction temperature of 0δC. About 95.88% improvements of NH3 yield is produced in comparison with the absence of magnetic induction reaction condition (10μmol/h.g-cat). Synthesis at 25δC yielded reduction about 0.90% lower than the synthesis at 0δC temperature. Thus, it is proven that the temperature engaged the dominant roles in affecting the catalytic effect of YIG catalyst for NH3 production. Further parametric studies should be conducted as to explore the robustness of YIG catalyst for new route of ammonia production until the commercial scale-up could be achieved.

325.   Reuben W. Prevalence and severity of adverse drug reactions among adult patients using default first line and modified antiretroviral combinations in mbeya region, Tanzania. Master of Science (Pharmaceutical Management) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.***Background information:**
For more than three decades now in the world, HIV /AIDS has emerged as a serious medical problem. The Government of Tanzania responded by provision of free antiretroviral (ARV) medicines to patients. The goals of ART are to provide maximal and durable suppression of viral load in patients in expectation of halting the disease progression; preventing/delaying medicine resistance, among others. Mbeya region is among the ART beneficiaries and ARVs provision started in late 2004. The antiretroviral used in the program by then included: zidovudine, didanosine, lamivudine, Abacavir, nevirapine, efavirenz, lopinavir, ritonavir , saquinavir and stavudine. Stavudine has been withdrawn from new default first line due to high adverse drug reactions. Although ADRs from these medicines are known worldwide, as a matter of fact, adverse reactions vary among various populations and geographical locations. Therefore, data that are derived from within the country are more plausible for patients monitoring, treatment guidelines review, planning and decision-making than those borrowed from another country. In response to that, a study to document the commonly reported ADRs in Tanzania was done in Dar es Salaam and Mbeya regions. However, the study reported ADRs from stavudine-based combination which was a default first line at that time but due to its higher adverse effects, currently is no longer initiated. Therefore, a new default combination is practiced which include zidovudine, lamivudine and efavirenz. Similarly, this combination has its substitutes which include nevirapine, tenofovir and

emtricitabine. The last two substitutes were not evaluated in the previous studies because they were yet to be introduced in the programme. This change in default combination of ARVs first line and introduction of two substitutes in combination based regimen, demands for a follow up study to determine their adverse effects. **Objective:** To assess prevalence and severity of adverse drug reactions among adult patients using new default first line and modified antiretroviral combinations in Mbeya region, Tanzania.**Methodology** The data (prevalence and severity of ADRs) for this study was collected retrospectively from Care and Treatment Clinic form number two (CTC 2) found in each patient's files receiving antiretroviral therapy in Mbeya referral, regional and three district hospitals in the region. In these forms, ADRs that were reported by patients were documented by clinicians attending them. ADRs were considered as minor if the patient induced with ADR continued with the same medicines or serious when patient was switched to other medications. A study sample of 639 patients files were studied of which comprised of; 280(AZT/3TC/EFV), 280(AZT/3TC/NVP) and 79(TDF/FTC/EFV). Statistical Package for Social Science, Chi-square and Fisher's exact tests were used to analyze the data. **Results** It was found that the overall prevalence of ADRs from use of new default first line combination was: skin rashes (1.07%), peripheral neuropathy (2.14%) and liver toxicity (0.36%). On the other hand, the severity was; 1 case of serious liver toxicity, 6 cases of mild peripheral neuropathy, 3cases of dry skin rash and 1 case of mild anaemia. **Conclusion and Recommendation:** The finding suggests that the new default first line combination is safer to the old one and therefore, recommended to continue to serve as default first line until when a better option is found.

326.   **Reynolds TA, Sawe HR, Lobue N, & Mwafongo V. 107 most frequent adult and pediatric diagnoses among 60,000 patients seen in a new urban emergency department in Dar Es Salaam, Tanzania.** *Annals of Emergency Medicine*. 2012; *60*(4): S39.

327.   **Reynolds TA, Mfinanga JA, Sawe HR, Runyon MS & Mwafongo V. Emergency care capacity in Africa: A clinical and educational initiative in Tanzania.** *Journal of public health policy*. 2012; S126-S137.

Even though sub-Saharan Africa faces a disproportionate burden of acute injury and illness, few clinical facilities are configured to take an integrated approach to resuscitation and stabilization. Emergency care is a high-impact and cost-effective form of secondary prevention; disease surveillance at facilities delivering acute and emergency care is essential to guide primary prevention. Barriers to emergency care implementation in the region include limited documentation of the acute disease burden, a lack of consensus on regionally appropriate metrics to facilitate impact evaluation, and the lack of coordinated advocacy for acute disease prevention and emergency care. Despite these challenges, interest in creating dedicated acute care facilities and emergency training programs is rapidly expanding in Africa. We describe one such initiative at Muhimbili National Hospital in Dar es Salaam, with a focus on the development of the emergency medicine residency program.

328.   **Ritte SA, & Kessy AT. Social factors and lifestyle attributes associated with nutritional status of people living with HIV/AIDS attending care and treatment clinics in Ilala District, Dar Es Salaam.** *East African journal of public health*, 2012;*9*(1): 33-38.

Objective: Tanzania is one of the countries that suffer huge burden of malnutrition and food poverty with over two million people living with HIV/AIDS. Despite ongoing nutritional

interventions in care and treatment clinics for people living with HIV/AIDS (PLWHA), a high proportion of them still face nutritional problems, with about 29% being underweight. This study therefore aimed assessing social factors and lifestyle attributes associated with nutritional status among adults living with HIV/AIDS and attending care and treatment clinics (CTCs) in an urban district in Tanzania. **Methods**: An interview schedule was administered to 412 randomly selected adult male and female clients attending different CTCs in Ilala district. Their anthropometric measurements i.e. body weights and heights were also taken. **Results:** Findings revealed that 18.4% of males and females were underweight according to their body mass indices. The risk of being underweight was higher among respondents who were young; who had never married; had no formal education as well as those who reported to be living with their families or friends, although these associations were not statistically significant. On the other hand, factors which had statistically significant association with nutritional status included the type of persons the client was living with and the habit of drinking alcohol. **Conclusion:** From the findings we conclude that PLWHA attending Care and Treatment Clinics in Ilala district, Dar es Salaam have problems with their nutrition with underweight being common among them. This suggests that the existing care and treatment clinics that provide nutritional support to PLWHA do not appear to address these issues in their totality. There is therefore, need to ensure that more efforts are geared towards providing nutritional counseling, support and encouragement of these clients within social contexts of their lives so in order for the current efforts to give best results.

329.	**Ruhago GM, Ngalesoni FN, Norheim OF. Addressing inequity to achieve the maternal and child health millennium development goals: Looking beyond averages** *BMC Public Health*, **(2012); 12 (1): art. no. 1119.**

Background: Inequity in access to and use of child and maternal health interventions is impeding progress towards the maternal and child health Millennium Development Goals. This study explores the potential health gains and equity impact if a set of priority interventions for mothers and under fives were scaled up to reach national universal coverage targets for MDGs in Tanzania. Methods. We used the Lives Saved Tool (LiST) to estimate potential reductions in maternal and child mortality and the number of lives saved across wealth quintiles and between rural and urban settings. High impact maternal and child health interventions were modelled for a five-year scale up, by linking intervention coverage, effectiveness and cause of mortality using data from Tanzania. Concentration curves were drawn and the concentration index estimated to measure the equity impact of the scale up. Results: In the poorest population quintiles in Tanzania, the lives of more than twice as many mothers and under-fives were likely to be saved, compared to the richest quintile. Scaling up coverage to equal levels across quintiles would reduce inequality in maternal and child mortality from a pro rich concentration index of -0.11 (maternal) and -0.12 (children) to a more equitable concentration index of -0,03 and -0.03 respectively. In rural areas, there would likely be an eight times greater reduction in maternal deaths than in urban areas and a five times greater reduction in child deaths than in urban areas. Conclusions: Scaling up priority maternal and child health interventions to equal levels would potentially save far more lives in the poorest populations, and would accelerate equitable progress towards

maternal and child health MDGs.

330.   Ruzegea M. The Usability of OPAC Interface Features: The Perspective of Postgraduate Students at International Islamic University Malaysia (IIUM). 2012.

Interface for user input and system output is among the components of IR system. Different Online Catalogs (online IR systems) have different user interfaces which would allow user to navigate or search information within and outside their library collections. Due to the increase in web technology, designers in user-interface industry compete in making different designs to allow ease-of-use of these interfaces so that users can have access to information they need. Yet, most of the designs of OPACs' interfaces are not that much effective in helping the users during their search for information. Some interface designs in university libraries' OPACs are less user-friendly and would not allow interactivity with the user during search sessions rendered them less effective, inefficient and bring low satisfaction on users. Libraries' Online Public Access Catalogs (OPCs) are one of the highly visible end user searching tools. Online catalog user studies have revealed, among other findings, that catalog users have the most difficulty with information searching and place the highest priority for improvements on various information search enhancements (Markey, 1983; Hildreth, 1985). The OPACs allow users to access resources of libraries, publishers, and online vendors (Guha&Saraf, 2005). OPACs can be accessed by from anywhere in the world, even from the palm of their hand. According to Guha&Saraf, this new generation of OPACs also incorporates advanced search features and new designs from other types of IR systems, such as allowing users searching OPAC and online databases via OPAC interface. Most of OPACs interfaces were designed to minimize online connect time and printing options (Brantley *et al*, 2006). It is therefore expected that, a user-friendly designed interfaces would have for instance, a simplified menu-driven interface utilizing off line storage of search strategy, automatic logon procedures, and software-controlled navigated searching techniques. Search and retrieval of library materials has become easy due to OPAC. But it has been observed in some instances, that users are not coping with this change. There seems to be two reasons for this. Firstly, some users lack computer knowledge and hence are reluctant to accept the change and secondly, the designs of the interfaces of some systems are not user friendly (Umarani et al, 2008). Umarani and others observed that personal and extended help is possible from library staff to the users to search OPAC effectively within the library. But it becomes difficult to provide such a help to online users. Therefore, it becomes essential to design user friendly OPACs and to test them for usability on a regular basis. Usability testing is a means for measuring how well people can use some human-made object (such as a web page, a computer interface, a document, or a device) for its intended purpose. Usability testing tries to find out 'user-friendliness' of the system, which is obviously subjective. Repeated user interviews, surveys, video recording of user sessions, and other techniques can be used for this purpose. Apart from these, technique of task analysis also can be used where in, certain tasks are assigned to the users and observations are made and further analyzed .The academic libraries OPAC users manifest special and unique needs and problems during their searching for information. Few user studies could be located which focused exclusively on how user-interfaces may have different impact to different categories of university library user communities (Umarani et al 2008; Galitz&

Wiley, 2002; and Mayhew & Kaufmann, 1999). This study intends to investigate the usability and effectiveness of user-interface features of Library OPAC among postgraduate students of International Islamic University Malaysia (IIUM), in relation to variables that influence the usability and the extent that the interface features can enhance search and informational retrieval for the users (i.e. effectiveness). This study will also seek to understand users' perception on the effectiveness of IIUM's OPAC's interface design (perception of overall ease - of – use) and whether or not they are satisfied. To this regard, user's background information concerning the exposure and use of OPACs and levels of computer literacy skills are important dimensions to be looked at.

331. **Ruzegea M. The Usability of OPAC Interface Features: The Perspective of Postgraduate Students at International Islamic University Malaysia (IIUM).** *Library Philosophy and Practice (e-journal).2012;* **Paper 691.**

Interface for user input and system output is among the components of IR system. Different Online Catalogs (online IR systems) have different user interfaces which would allow user to navigate or search information within and outside their library collections. Due to the increase in web technology, designers in user-interface industry compete in making different designs to allow ease-of-use of these interfaces so that users can have access to information they need. Yet, most of the designs of OPACs' interfaces are not that much effective in helping the users during their search for information. Some interface designs in university libraries' OPACs are less user-friendly and would not allow interactivity with the user during search sessions rendered them less effective, inefficient and bring low satisfaction on users. Libraries' Online Public Access Catalogs (OPCs) are one of the highly visible end user searching tools. Online catalog user studies have revealed, among other findings, that catalog users have the most difficulty with information searching and place the highest priority for improvements on various information search enhancements (Markey, 1983; Hildreth, 1985). The OPACs allow users to access resources of libraries, publishers, and online vendors (Guha&Saraf, 2005). OPACs can be accessed by from anywhere in the world, even from the palm of their hand. According to Guha&Saraf, this new generation of OPACs also incorporates advanced search features and new designs from other types of IR systems, such as allowing users searching OPAC and online databases via OPAC interface. Most of OPACs interfaces were designed to minimize online connect time and printing options (Brantley *et al*, 2006). It is therefore expected that, a user-friendly designed interfaces would have for instance, a simplified menu-driven interface utilizing off line storage of search strategy, automatic logon procedures, and software-controlled navigated searching techniques. Search and retrieval of library materials has become easy due to OPAC. But it has been observed in some instances, that users are not coping with this change. There seems to be two reasons for this. Firstly, some users lack computer knowledge and hence are reluctant to accept the change and secondly, the designs of the interfaces of some systems are not user friendly (Umarani et al, 2008). Umarani and others observed that personal and extended help is possible from library staff to the users to search OPAC effectively within the library. But it becomes difficult to provide such a help to online users. Therefore, it becomes essential to design user friendly OPACs and to test them for usability on a regular basis. Usability testing is a means for measuring how well people can use some human-made

object (such as a web page, a computer interface, a document, or a device) for its intended purpose. Usability testing tries to find out 'user-friendliness' of the system, which is obviously subjective. Repeated user interviews, surveys, video recording of user sessions, and other techniques can be used for this purpose. Apart from these, technique of task analysis also can be used where in, certain tasks are assigned to the users and observations are made and further analyzed .The academic libraries OPAC users manifest special and unique needs and problems during their searching for information. Few user studies could be located which focused exclusively on how user-interfaces may have different impact to different categories of university library user communities (Umarani et al 2008; Galitz& Wiley, 2002; and Mayhew & Kaufmann, 1999). This study intends to investigate the usability and effectiveness of user-interface features of Library OPAC among postgraduate students of International Islamic University Malaysia (IIUM), in relation to variables that influence the usability and the extent that the interface features can enhance search and informational retrieval for the users (i.e. effectiveness). This study will also seek to understand users' perception on the effectiveness of IIUM's OPAC's interface design (perception of overall ease - of – use) and whether or not they are satisfied. To this regard, user's background information concerning the exposure and use of OPACs and levels of computer literacy skills are important dimensions to be looked at.

332.   **Rwezaura P. Home based care services as a strategy to supportanti-retroviral therapy adherence: the case of musoma municipal, mara region. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

A descriptive qualitative study was conducted to assess whether Home Based Care servicescan be used as a strategy to support Anti-retroviral adherence for People living with HIV/AIDS (PLWHA) in Musoma Municipality, Mara region in March 2012. Six public health facilities that are providing ARVs were included in the study; this included the regional hospital, two dispensaries and three health centers. With the national ART scale up, the poor health infrastructures are faced with poor retention of patients into care, as a result maintaining adherence becomes a problem due to a lack of follow up. The goal of the study was to assess the use of home based care services as a strategy to support Anti-retroviral treatment adherence among PLWHA. A total of five Focused Group Discussions (FGDs) were conducted with 30 home based care providers to find out from them whether the HBC intervention had experienced any changes since the advent of ARV scale up in the region, and whether their roles had changed in the delivery of services to PLWHA to include adherence support and management. Key Informant Interviews were conducted with 13 health care providers including the facility in-charges, CTC in-charges, hospital pharmacist and HBC Supervisor from the six health facilities that were included in the study to find out their perceptions towards home based care services and whether HBC is providing support to the formal health care systems in ensuring clients adhere to their ART regimen. Whereas in-depth interviews were conducted with 14 PLWHA who are taking ARTs to find out their perceptions towards home based care services and whether they support them with ART adherence. The study findings revealed that HBC services support the formal health care systems with community care support services such as patient tracking and monitoring clients' adherence to ARTs. Health care providers revealed that the success of ART up in the

region is faced with many obstacles including the poor rates of patient retention due to high rates of patients who miss appointments and those who default on their treatments. They revealed that this obstacle is being tackled by HBC providers who assist them to do the patient tracking and returning defaulters back into care, also they provide community supportive services including ART adherence and patient follow up. PLWHA who were interviewed attributed their good adherence to the contribution of community support programmes such as HBC. They acknowledged the regular follow up visits, provision of counseling and monitoring that HBC providers conducted has helped them to maintain good adherence. This is because HBC has evolved in response to the roll-out of ARVs, where it has become more medicalised as a result of the drive to sustain PLWHA on ART to adhere to their treatment regimen. It was concluded that HBC services are a key attribute that provides can be used to provide facility-community linkage which will ensure patients receive community care services as well as facility care and at the same time bridging the gap between formal health services and community care. Therefore further studies should be done on adherence interventions in order to develop evidence based strategies that can promote sustained adherence. In order for the ational scale up efforts of ARV to be successful, it is important to assess the component of adherence as a contributing factor in ensuring the effectiveness or ARVs in achieving the desired results.

333.   **Safari S. Perceptions and challenges of using emergency triage assessment treatment guideline in emergency department at muhimbili national hospital, Tanzania. Master of Nursing in Critical Care and Trauma Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Triage is the process of determining the priority of patients' treatments based on the severity of their conditions. This helps treating patients efficiently when resources are insufficient for all to be treated immediately. Health care providers use ETAT guideline during triaging patients to improve quality of care and reduce morbidity and mortality rates. But the adherence to the guidelines protocol has been a challenge in triage rooms. This paper assessed perspective of HCWs and challenges encountered while using ETAT guideline. **Objective:** The objective of this study was to explore nurses and doctors' perspectives and challenges they encounter during implementation of the ETAT guideline used to triage patients with different categories at Muhimbili National Hospital. **Methodology:** This study employed a descriptive qualitative design to obtain thick and rich data. Focus group discussions were used to explore nurses and doctors' perspectives and challenges they encounter during implementation of ETAT guideline in the emergency department at Muhimbili National hospital. The questions included sections on socio-demographic data, working experience, HCWs perspective, challenges they encounter during the triage process. **Results:** In this study, there were five categories; Guideline is useful in triaging with comparison to the situation before it was introduced; unbalanced patient-staff ratio; challenges to implementation of ETAT Guideline; knowledge deficit and disagreement among health care workers; lack of motivation and negative attitude towards professionalism under one theme ―the ETAT guideline has improved the triaging process but have many challenges hindering its successful implementation‖. In this study, Informants expressed the usefulness of ETAT guideline. There were several challenges to the implementation and they included unbalanced patient/staff ratio, fear of employee leaving the unit due to work overload which makes the triage process to become difficult. Another challenge was

equipments which are not functioning and others giving unreliable findings. Participants said that the ETAT guideline does not explain how psychiatric emergencies should be triaged and managed leaving the triage nurse in dilemma in decision making. Respondents reported that there were some complains from patients and relatives waiting in queue about delays of care. Respondents reported that nurses and doctors are less motivated in terms of salary, recognition and appreciation by employer was mentioned as a negative impact on their work resulting into unmet expectation. **Conclusion** In this study, challenges mentioned were equipments which are not functioning example monitors, machine giving unreliable/different results resulting in delays in delivering care to patients. Unbalanced staff/patient ratio was mentioned as a barrier to implementation. The study shows knowledge deficit on how to categorize patient according to the guideline, also there was disagreement between nurses and doctors on the use of Guideline. Less motivated workers in terms of payment, recognition and appreciation was said to have significant implication in the implementation of the guideline. Another concern was some workers lacking positive attitude towards their profession. **Recommendations:** Increasing number of health care workers by hiring new employees will improve workload will improve triaging and increase patient satisfaction. Government need to train more specialists in emergencies to provide maximum quality of care. On job training of workers on how to use the guideline will improve the triage protocol. Maintenance of non functioning equipments and purchase of new materials will increase the productivity of quality of care. Motivating those on duty by providing salary which is equivalent to the work accomplished, appreciating job well done and recognition of workers who have achieved maximum tasks will increase job satisfaction.

334. **Said A. Knowledge and practice of intensive care nurses on prevention of ventilator associated pneumonia at muhimbili national hospital, dar es salaam, Tanzania. Master of Nursing (Critical Care and Trauma) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background- A cross-sectional and observational study was conducted among Intensive care (ICU) nurses at Muhimbili National Hospital (MNH), to identify knowledge and practice of ICU nurses on prevention of Ventilator Associated Pneumonia (VAP). **Materials and methods-** Knowledge of 118 nurses working in ICU such as Main, Cardiac , Acute pediatric ICUs , emergency medicine department and highly dependent unit at MNH were tested by using a close ended questionnaire, 30 nurses among 118 were tested for knowledge and practice by using observational checklist. Information letters, consent forms and questionnaires were handed to ICU nurses by researcher assistants. Data coded and entered into SPSS version 16.0 for descriptive and inferential statistics. **Results-** Of ICU nurses, 95 (80.5%) were women, 64 (54.2%) had either diploma or Advanced diploma in Nursing, 105 (90%) had no ICU training, 80 (67.8%) were working in ICU for less than 10 years, knowledge scored and their levels were as follows: 64 (54.2%) scored 100% - 70% excellent, 19 (16.1%) scored between 69% - 60% very good, 23(19.5%) scored between 59% - 50% good, 10(8.5%) scored 49% - 40% average and 2 (1.7) scored between 39% - 0% poor. No association between knowledge and years of working experience (p- value 0.34), ICU training (p- value 0.64) and level of education (p- value 0.55). ICU nurses' practice on prevention of VAP was statistically associated with education level (p- value 0.03) but not

associated with ICU training (p- value 0.53) and years of work experience (p- value 0.64). On observation large proportion (100 %) of ICU nurses did not wash hands before entering ICU, 83.3% washed hands before and 66.7% after patients contact. Of ICU nurses (66.7%) observed to wash hands after contact with a source of microorganisms. During ETS large proportion of ICU nurses (83.3%) use sterile gloves, though hand washing before and after suctioning, maintaining of environment and equipment cleanness was poor. During oral care (90%) of ICU nurses use clean gloves, 80% clean mouth using toothbrush or gauze moistened with mouth wash and 73% clean equipment. vii **Conclusion-** ICU nurses' knowledge on VAP prevention was adequate but their practice was found to be poor. No significant association between ICU training, level of education, years of working experience and knowledge. Practice of ICU nurses on VAP prevention was statistically associated with education level but not with ICU training and years of working experience. Hand washing, environment and equipment cleanness during ETS and oral care was inadequate therefore knowledge of ICU nurses on VAP prevention does not necessarily reflect adequate practical skills.

335. **Saidia PF.Prevalence of renal failure in sickle cell disease patientsattending muhimbili national hospital indar es salaam, tanzania. Masters of Medicine (Internal Medicine) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam***.**

Background: Sickle-cell disease, is an inheritable hemoglobinopathy where red cells assume an abnormal, rigid, sickle shape leading to several complications, one of them, chronic renal failure. The disease is common among blacks. Renal failure in SCD patients ranges from 5 to 18 percent and contributes to 18% of the overall mortality in SCD patients. Despite its remarkable contribution in mortality, no data from Africa and especially Tanzania is available to address the extent of renal failure in SCD patients. **Objective**: This study aimed to determine the prevalence of renal failure and associated factors among sickle cell disease patients attending Muhimbili National Hospital in Dar es Salaam, Tanzania. **Methods**: A descriptive cross sectional study was done for a period of seven months, September 2010 through March 2011. During this period, patients attending the outpatient SCD clinic were enrolled and screened for features suggestive of renal failure. The data included demographic data, anthropometric measurements and clinical information. Blood for CBC, serum creatinine, urea and electrolytes was obtained, urinalysis inclusive. Renal ultrasound was performed for those with established renal failure. The end point of this study was renal failure defined by eGFR less than 60ml/min/1.73m2. The collected data was recorded cleaned, validated and finally analysed using SPSS version 15.0. Various associations between the outcome and risk factors were assessed and p-value less than 0.05 was taken as statistically significant **Results**: A total of 313 sickle cell disease patients were enrolled into the study. Of these 14.7% had established renal failure (i.e. with eGFR<60ml/min/1.73m2). Children under 10 years of age were predominantly affected with renal failure (P=0.01). There was no gender predilection (P=0.2).There was statistically significant association between severe anaemia and renal failure. Proteinuria and hypertension were 16.9% and 14.4% respectively however; both had no significant association with renal failure. Proteinuria was associated with advanced age. Anaemia was more severe in those with low eGFR (P 0.001). Blood urea level was significantly associated with renal failure

(P<0.0001).There was established renal parenchymal disease ultrasonogarphyically in 44.4% of renal failure patients who underwent renal ultrasound. **Conclusion**: This study has revealed that renal failure exists in SCD patients (14.7%), as other studies have documented it to be 5 to 18 percent. The age predilection has changed from advanced age to children less than 10 years of age. Other parameters like proteinuria being common in advanced age, low incidence of hypertension (14.4%), severe anaemia in patients with renal failure, and renal parenchyma changes have remained similar. However, proteinuria and hypertension were not associated with renal failure (P>0.5). Conclusively, early diagnosis and treatment of renal failure in sickle cell disease patients may retard progression to end stage renal disease.

336. **Saka F. Factors influencing exclusive breastfeeding among hiv positive mothers at ilala municipalitydar es salaam. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Exclusive breast feeding practices to infants from birth to six months of age are declining as their age increases despite the associated benefits. Knowledge on the factors influencing exclusive breastfeeding among HIV positive mothers will create awareness on feeding practices that are risk to the infant's health. **Objective:** To determine factors that influence exclusive breastfeeding among HIV positive mothers of infants aged 6-12 months old attending Reproductive and child Health clinic and care and treatment clinic at Ilala Municipality. **Materials and Methods:** A cross-sectional survey was conducted among HIV positive mothers with infants aged 6-12 months at three health facilities of Ilala Municipality namely: Amana hospital, Mnazi Mmoja and Buguruni Health Centres. Both quantitative and qualitative data collection methods were used. A questionnaire was administered to 200 HIV positive mothers to collect information and to characterize infants feeding practices. In depth Interview guide was used to explore infant feeding practices to five mothers of the same group. **Results:** Exclusive breastfeeding was reported to be 46%. The other feeding practices reported were: mixed feeding 14% and exclusive replacement feeding 6%. Prelacteal and early complementary feeding was reported to be 34%. Exclusive breastfeeding practice was influenced mainly by health workers and mother's perception that breast milk is sufficient for infant's body requirements for the first six months of life. Early cessation of breastfeeding was reported to be result of mother's fear of infecting the child and also infant's HIV test results being negative after DNA-PCR test. However, lack of HIV status disclosure, breast problem, family and social pressures were found to be barriers in practicing exclusive breastfee **Conclusion and Recommendations:** HIV positive mothers are faced with multiple challenges as they strive to practice exclusive breastfeeding. Despite nearly half of the mothers reporting practicing exclusive breastfeeding, the rates are still not satisfactory. More extensive and comprehensive approach of infant feeding counseling that embrace all stakeholders, with emphasis to significant others should be put in place in order toincrease exclusive breastfeeding rates.ding.

337. **Sakamoto SH, Suzuki SN, DegawaY, Koshimoto C, & Suzuki RO. Seasonal habitat partitioning between sympatric terrestrial and semi-arboreal Japanese wood mice, Apodemus speciosus and A. argenteus in spatially heterogeneous environment. Mammal Study. 2012; 37(4): 261-272.**

Habitat partitioning can maintain the coexistence of species with very similar ecological

traits. We studied habitat partitioning between terrestrial and semi-arboreal congeneric rodents (Apodemus speciosus and A. argenteus) that often coexist despite asymmetry in their competitive abilities. To understand seasonal and habitat variation in their partitioning, we evaluated seasonal variation in food resources, habitat use, and habitat similarity between the species in a site comprising a mixture of grassland, pine forest, and mixed forest. Food resources were available on the ground in all vegetation types in spring and autumn, but were severe in summer. Apodemus speciosus was observed in all types of vegetation on the ground. In contrast, A. argenteus was observed on the ground and on trees in pine forest, especially areas where the understory is covered by dwarf bamboo. Habitat similarity tests revealed that habitat partitioning between two Apodemus species may vary seasonally, and the relationship depends on habitat structure. This study suggests that the mechanism of habitat partitioning between terrestrial and semi-arboreal rodents in temperate forest is more complex than previously recognized.

338.   Samson G. Awareness of food labelling and use of the information in purchasing pre packaged food products among consumers in ilala municipality dar es salaam. Master of Public Health Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Liberalization of trade, globalization and development in food science and technology has resulted in an increase in trade and consumption of pre-packaged foods. Reading food labeling information is important to assist in making informed choices of food. This study determined level of awareness on pre-packaged food labeling information among consumers in Ilala Municipality, their perception on the importance of such information and difficulties encountered in reading and using pre- packaged food labels. A descriptive cross- sectional study was conducted in Ilala Municipality from July to August, 2012. A questionnaire with both close and open ended questions was used to collect information from 208 consumers who were found purchasing prepackaged foods in selected supermarkets (Uchumi, Shoprite, Imalaseko, Mek One and TSN). The obtained data were computed to determine relationships and associations between various factors and the use of food labelling information among consumers in the area of study. Awareness and use of pre-packaged food labelling information was found to be low among consumers in Ilala municipality. Findings showed that only a quarter of the study respondents had high awareness on food labelling. Health concerns, religious beliefs and the need to know characteristics of food, motivate consumers to read prepackaged food labels. Difficulties encountered in reading food labels included small font sizes, use of scientific and technical language as well as the use of unfamiliar language. Circumstances in which consumers purchase pre-packaged food without consulting the respective labels include time constraint and purchase of routine food products. Awareness and use of pre-packaged food labelling information was significantly associated with age, occupation and education level of respondents. People who read food labels concentrated on ingredients and expiry. It is therefore recommended that deliberate efforts should be taken to improve food labelling, provide education to consumers to raise their awareness and use of food labelling information as well as develop a consumer guide on food labelling.

339.   **Samson G. Utilization and factors affecting delivery in health facility among recent delivered women in nkasi district. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: High maternal mortality rate is one of the major public health concerns in developing countries including Tanzania. Most of the deaths are caused by factors attributed to pregnancy and childbirth. In Tanzania about 50% of women delivered in health facility with wide variation among regions being lowest in Rukwa(30%) and highest in Dar es Salaam(90%). **Objectives**: The major purpose of the study was to determine factors that affect delivery in health facility among recent delivered women. **Materials and Methods**: A cross sectional analytical study was carried out among women with children less than two years prior to survey in July 2012 in Nkasi district. Household survey using structured questionnaire was used to collect information. Data were analyzed using SPSS version 17. **Result**: A total of 368 women were recruited into the study, whereby (87.6%) were below the age of 35 years, (91.6%) were married and (31.5%) were not able to read and write. Majority of respondent attended ANC (98.6%), but only 44.0% delivered in health facilities. Women with secondary education were six times more likely to deliver in health facility compared to those with no education (AOR=6.15,CI=1.105- 34.232), where by those attended ANC more than four visit were two times more likely to deliver in health facility than those who attended less than that. (AOR=2.45,CI=1.500-4.156) and those living more than 5 kilometer were four times less likely to deliver in health facility compared to those living within 5 kilometer to health facility. (AOR=0.24,CI=0.130-0.43). **Conclusion**: Maternal health services need to continuously sensitize to the community so that the number of pregnant mothers delivered in health facility increased to attain the National target and reduced maternal morbidity and mortality. **Recommendation**: Based on these findings, increase the utilization of health facility for delivery by improving education among girls, increase accessibility to health facility and promote early booking and regular visits to ANC by women have been recommended.

340.   **Sanga T. Clinical and echocardiographic findings of left ventricular diastolic dysfunction among hypertensive patients at muhimbili national hospital, dar es salaam. Master of Science (Cardiology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Hypertension is the commonest of the cardiovascular risk factors, whose prevalence in Tanzania is high between 20-30%, among rural and urban residents respectively. Uncontrolled hypertension leads to a number of structural changes in the heart which eventually cumulates into interstitial fibrosis, myocardial wall thickness and functional alteration such as diastolic dysfunction. Diastolic dysfunction is thought to be responsible for as many as 74% of cases of HF in hypertensive patients. Despite this likelihood; it is rarely diagnosed in clinical practice except by default. Diastolic heart failure is common in sub-Saharan African hypertensive patients. However less is known about the prevalence of subclinical left ventricular (LV) diastolic dysfunction in asymptomatic and symptomatic hypertensive patients in Tanzania. **Objectives:** To describe the clinical and echocardiographic features of Left ventricular diastolic dysfunction among hypertensive patients at Muhimbili National Hospital. **Methods:** LV geometry and diastolic function were

assessed by echocardiography in 200 hypertensive patients attending Muhimbili National Hospital in Dar es Salaam, Tanzania. The demographic parameters including age, sex, and body surface area, systolic and diastolic blood pressure were taken. Patients were categorized into groups of in-patients and outpatients. Ethical clearance was sought from the Research and Publications Committee of MUHAS and permission to conduct the study was obtained from the Ethics committee department of MNH. Patients were enrolled after informed verbal and written consent. Data entry and analysis has been done using the SPSS windows version 16 **Results:** Two hundred participants were recruited into the study during the study period. One hundred and eight (54%) were females.The mean age of the study population was 52±13.5 years, which varied from 23-86 years, with men being older than women, with higher body surface area and heights than women. LV diastolic dysfunction was found in 58.5 % of participants, 50% were in grade 1 diastolic dysfunction. The overall prevallence of left ventricular hypertrophy was 86% in this population of patients, concentric LVH dominated in both patient groups constituting 60.4% , eccentric hypertrophy was seen in 17.6% and concentric remodeling in 8%. Fourteen percent had normal left ventricular geometry. Concentric left ventricular geometry was the predominant geometry among the in-patients with diastolic dysfunction In-patient hypertensive group had statistically significant larger LV internal diameters and wall thicknesses, and they had higher LV mass as well as higher prevalence of LVH (all p<0.01. higher E/E' ratio was independently found to be associated with in-patient status, adjusting for lower age, larger LA size, higher mitral valve A velocity and lower IVRT (multiple R2=0.26, p<0.001). **Conclusion:** The prevalence of diastolic dysfunction is high among this population of patients with hypertension . Concentric left ventricular hypetrophy is high among hypertensives in this population and is a predominant geometry in patients with diastolic dysfunction. Elevated left ventricular filling pressures were independetly associated with inpatient status. **Recommendations**:The higher prevalence of cardiac hypertrophy and left ventricular diastolic dysfunction among hypertensives in our study support the need for improved attainment of blood pressure goals in these patients. Aggressive Screening for end organ demage should be warranted in this population.

341.   **Sarea P. Magnitude and determinants of suicidality among hiv positive outpatients in mbeya city. Master of Medicine (Psychiatry) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Globally 33.3 million people were estimated to be living with HIV/AIDS at the end of the year 2009 compared to 33.4 million at the end of the year 2008**.** Sub Saharan Africa continues to bear the greatest share in global burden of HIV/AIDS, even though the rates of new HIV infections are declining, the total number of people living with HIV/AIDS keeps on rising. As a result of increasing awareness and utilization of HIV related care the prevalence of HIV has declined since the year 2000 but has stabilized in East African countries. The incidence slowed down in Tanzania to about 3.4 per 1000 person- years from 2004 to 2008. Studies have highlighted high rates of depression and suicidality among HIV patients. Depression and HIV+ status independently predict poor daily functioning. Studies have reported suicidal ideation rate of 34.7% among PLHA compared to 4% of the controls while 9.3% had suicide attempt compared to 2% of the controls. **Objectives:** This study aimed at determining physical and mental health factors related to suicidality among HIV positive outpatients attending care and treatment clinic in Mbeya city. **Materials and**

methods: This was analytical cross sectional study in which 597 HIV patients were recruited from four different health facilities through systematic random sampling. Four health facilities located close to the town center were involved; one referral hospital, one regional hospital and two the health centers. Sociodemographic structured questionnaire was used to collect information. The sample included males and females aged 18 years and above. The consent was obtained before recruitment to participate in the study. Data was analyzed using SPSS version 17. Bivariate and binary logistic regressions were employed to draw inferences with regard to independent variables and suicidality. **Results**: Among 597 participants, 219(37.7%) were males and 378(63.3%) were females. The mean age was 39.19 years (SD= 10.77). Rate of suicidality was found to be 8.9% suicidal thoughts, 3.2% suicide plan and 2.2% suicide attempts. Suicidality was independently associated with depression (OR=2.09, 95%CI=1.17-3.73, p=0.01 and stigma (OR=2.94, 95%CI=1.64-5.28, p<0.01). **Conclusion and recommendation:** This research suggests suicidality was prevalent among HIV positive out patients in Mbeya city. This calls for the comprehensive assessment, treatment and referral for suicidality as a component of mental health programs among HIV outpatient's clinics.

342.   Sariah A. **Factors influencing relapse among patients with schizophrenia in muhimbili national hospital: the perspectives of patients and their caregivers. Master of Science Nursing (Mental Health) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Relapse in patients with schizophrenia is a major challenge for mental health service providers in Tanzania and other countries. Approximately 10% of patients with schizophrenia are re-admitted due to relapse at Muhimbili National Hospital (MNH) Psychiatric Unit each month. Relapse brings about negative effects and it results in a huge burden to patients, their families and mental health sector and country economy as well. So far no study has been done to address relapse in Tanzania. That is why there is a need to find out as to why individuals with schizophrenia experience relapse. **Objectives** This study aimed to explore perspectives on factors influencing relapse to patients with schizophrenia and their caregivers attended at Muhimbili National Hospital Psychiatric Out-patient Department, Dar es Salaam, Tanzania. **Methodology** A qualitative study was conducted, involving in-depth interviews of 7 schizophrenic out-patients and their 7 caregivers at MNH Psychiatric Out-patient Department in Dar es Salaam, Tanzania. Purposive sampling procedure was used to select participants for the study. Audio recorded in-depth interviews in Swahili language were conducted with all participants in the study. The recorded information was transcribed to text in computer files and analyzed by using NVivo 9 computer assisted qualitative data analysis software. **Findings** Personal and environmental factors for relapse were the main themes that emerged from this study. Patients and their caregivers perceived non adherence to antipsychotic medication as a leading factor to relapse. Other factors included poor family support, stressful life events and substance use. Family support, adherence to antipsychotic medication, employment and religion were viewed as protectors of relapse. Participants suggested strengthening mental health psychoeducation sessions and community home visits conducted by mental health nurses to help reduce relapse. Other suggestions included strengthening of nurse-patient therapeutic relationship in provision of

mental health care. **Conclusion and recommendations** It is important for mental health nurses to strengthen their therapeutic relationships with patients and their caregivers. Regular individual psychoeducation sessions and community based interventions would help reduce relapse and mental health service

343.   **Sasita S. Knowledge, attitudes and practices regarding rift valley fever among community members, health and veterinary workers in kongwa and kilombero districts, Tanzania. Master of Science in Applied Epidemiology Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background: Rift valley fever (RVF) is an acute febrile viral disease caused by Rift Valley Fever virus, transmitted by *Aedes* mosquitoes and other blood sucking insects. It is a global re-emerging zoonotic disease with rapid socio-economic and public health impact. A large RVF outbreak occurred in Tanzania in 2007 and affected 52.4% (n=21) of regions with high (47%) case fatality rate. There is paucity of information on knowledge, attitudes and practices among Tanzanian community regarding RVF. A study was therefore conducted to assess knowledge, attitudes and practices regarding RVF to provide baseline information to design interventions **Objectives:** This study was conducted with the aim to assess knowledge of, determine health seeking practice, describe attitudes towards, and determine perception of risk of RVF among community members, health and veterinary workers in Kongwa and Kilombero districts. **Material and Methods:** A cross sectional survey was conducted among head of households, health and veterinary workers in Kilombero and Kongwa districts in November 2011. Administered questionnaire and focus group discussions were used to collect data from household members and in depth interview from health and veterinary workers. Multi stage sampling was used to obtain participants. Knowledge and attitudes questions were scored and the mean score analysed using SPSS version 17, INVIVO version 8 used for qualitative data. **Results:** A total of 463 community members recruited in this study. Their mean (SD) age was 39.8 (14.4) ranging, 18-87 years. Of these, female were 51.4% and 51% lived in Kongwa district. Majority 87.3% were peasants, 61.8% completed primary education, and 79.0% were married. Out of 463, 452 (97.5%) they had heard about RVF. Mean (SD) knowledge score was 3.1 (2.6) ranging min-max, 0-15. Of the 452, 369 (81.6%) were not aware of the vectors spreading RVF while 298 (65.9%) did not know its symptoms in animals. Regarding RVF infection in humans, 330 (73.7%) knew about consuming the meat of a dead or sick animal; furthermore 318 (70.4%) were not aware of symptoms. Community's attitude towards RVF was high, with a mean score 24.9 (3.7) ranging, 7-35 scores. Majority 337 (74.6%) reported seeking care for febrile illness at health facilities. Less than half 110 (24.3%) reported the use of protective gears to handle dead animal while 15.5% were consuming dead carcasses. For 320 (70.8%) and 91 (20.1%) respondents their main source of information about RVF were radio and friends respectively. **Conclusion:** The study findings indicate that, knowledge about symptoms, transmission and prevention of rift valley fever among community members was very low in this study, although attitudes are positive. Practices in this study were still risk among community members. Health planners should design RVF awareness interventions targeting to reach these communities and the public through radio and other communication channel on a regular basis.

344.   **Schock S**. **Outcome of mild traumatic brain injury in the course of 24 hours of**

observation among patients admitted at muhimbili orthopaedic institute (moi). Masters Of Medicine In Orthopaedics and Traumatology Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background: Traumatic brain injury is a global health problem with significant mortality and morbidity. The study aimed at determining the outcomes of mild traumatic brain injured patients during 24 hours of observation among patients admitted at Muhimbili Orthopedic, Trauma and Neurosurgical Institute (MOI) - Tanzania. **Study design:** Prospective – Hospital base d observation study. All consecutive patients with mild traumatic brain injury meeting the inclusion criteria were recruited in the study and followed up in the ward for the first 24 hours after admission. **Methods:** A total number of 424 patients were included in the study with GCS of 15, 14 and 13. The scores were strengthened by the presence or absence of neurological symptoms like; loss of consciousness, headache, pupillary dilatation, seizures and vomiting. The patients were followed up in the ward and progress was noted. After completion of 24 hours, final remarks of the outcome were noted. The target was three outcomes: 1.Good recovery where patients discharged home 2.Fair or no changes and patients needed more observations 3.Poor progress as the patients were deteriorating. Also influence of long bone fractures on neurological outcomes were determined. **Results:** Sixty three (14.8%) patients deteriorated, 88(20.7%) patients needed more observation and brain CT scan were inquired, 270(63.4%) recovered well and discharged on instructions of primonitory signs of impending neurological deterioration while 3(0.7%) died. The findings were statistically significant (P=000). Subdural hematoma was the leading cause of deterioration 23(39.7%) while normal CT Scan was found in 8(13.8%) patients despite of their deterioration. Presence of long bone fractures concomitantly with mild TBI has a significant role in neurological deterioration (P=0.043). **Conclusion:** Inspite of a good score during admission of mild traumatic brain injured patients and high expectations of immediate recovery, still there is a significant possibilities of some of these patients deteriorating. Close monitoring and aggressive intervention measures are needed for the best outcome of patients.

345. **Sejzi AA, Aris B, & Yahya N. The phenomenon of virtual university in new age: trends and changes. Procedia-Social and Behavioral Sciences. 2012; 56: 565-572.**

The concept and trend of virtual universities is changing in modern higher education organizations. Virtual universities will continue to change especially with the emergence of new information and communication technology (ICT). Higher education players expect virtual universities to grow and serve a more diverse set of students. These virtual universities have innovate new ideas such as new organizational structures, new collaboration models, new delivery modes, new policies, new assessment models, new funding models, and new skills on the part of the students, faculty members and administrators. In this article, the researcher attempts to show the trends and changes of virtual universities in higher education, and explain some major factors that influence the virtual universities in the new age.

346. **Shabri ASA, Ibrahim T, & Bin Mohd Nor N. (2012, June). Development of micro air flow generator for electrical charging system. In** *Power Engineering and Optimization Conference (PEDCO) Melaka, Malaysia, 2012 Ieee International.* **(pp. 329-**

332): IEEE.

This paper presents the development of micro air flow generator from motorcycle exhaust system. The project is used to utilize the air flow from exhaust in order to generate electrical energy. The kinetic energy from the air flow can be used to turn a turbine. From the turbine shaft, it then will rotate the rotor of a DC motor. The rotation of the rotor having a winding will cut the magnetic field created by the permanent magnet (stator); the electricity then will be produced. This generated electricity is delivered to the rechargeable battery for storage. From the storage, the energy can be used for other purposes such as charging a hand phone. The prototype has been developed and open-circuit and closed-circuit tests have been carried out. The results show that the generator is able to produce electricity and charge electrical appliances such as hand- phone.

347.   Shafer MG, Saputra E, Bakar KA, & Ramadhani F. (2012, February). Modeling of Fuzzy Logic Control System for Controlling Homogeneity of Light Intensity from Light Emitting Diode. In *Intelligent Systems, Modelling and Simulation (ISMS), 2012 Third International Conference on* (pp. 71-75). IEEE.

The use of Light Emitting Diode (LED) as the lighting device becomes popular due to its energy-efficient characteristic. However, LED has radiation angle that is relatively smaller than other types of lighting device. This results in heterogeneity of light intensity that received by particular point near the LED. To obtain homogeneity of light intensity, this paper proposes a model of fuzzy logic control system to control illumination of LEDs lamp in a room. This model involves several components, namely LEDs lamp, LED driver, illumination sensor, microcontroller, and a differential transceiver RS-485. The fuzzy logic control system that used in this model uses error of illumination and delta error of illumination as input parameter. As output, this control system will change duty cycle of Pulse Width Modulation (PWM) that used to control illumination of LEDs lamp. Based on experiment result, when expected light intensity is set to 150 Lux, homogeneity of light intensity can be achieved with error less than 2%. In addition, the control system also can reduce energy consumption up to 40% under the experimental environment.

348.   Shafie A, Yahya N, & Abdulkarim M. A simulation study to verify the effects of air waves in Sea Bed Logging for shallow water. In Electromagnetics in Advanced Applications (ICEAA) 2012, September; International Conference on. 2012; 626-629.

Detection of hydrocarbons (HC) by a Controlled Source Electromagnetic (CSEM), based on resistivity contrast, makes electromagnetic (EM) waves convincing method for HC detection in deep water exploration. However, HC survey done in shallow water is difficult due to a phenomenon called "air wave effect". The waves that are produced by EM transmitter interact with air-sea interface to generate air waves that diffuse from the sea surface to the receivers. These air waves dominate the measured EM data such that the presence of the HC may not be detected. This work is a verification of the effect of air waves in shallow water environment. Data with hydrocarbon at 500m depth and data without hydrocarbon were simulated using CST EM Studio for this study for sea water depths from 1000m to 100m.

Results have shown that the presence of hydrocarbon in shallow water is shielded by air waves.

349. **Shaidi M. Intimate partner violence among women living ininformal settlements: a case study of manzese, in dar es salaam, Tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Women experience violence in many different forms. It may be physical, psychological, sexual, economic, social or cultural abuse but most commonly is the combination of these. Studies have shown that the rate of intimate partner violence is still a public health problem in informal settlements. It has both physical and psychological consequences to the victim. **Objectives:** This study was conducted with the aim of determining the prevalence/magnitude, attitude, characteristics of perpetrators and help seeking behaivour of women who have experienced intimate partner violence. **Methodology** A cross sectional descriptive study was conducted in Manzese ward. Multistage sampling was used to select the participants and a total of 267 eligible women living in the study area were interviewed. Data were collected through interviewing women using a structured questionnaire. **Results**: The findings showed the rate of intimate partner violence is still high in this area, the prevalence of physical intimate partner violence was 69.3%, psychological 70%. While for the case of sexual abuse being forced to have sexual intercourse with the husband/intimate partner even when they did not want to do so was reported to be 41.2%, threats of separation was reported by 38.2%. Alcohol use was significantly associated with characteristics of men who were violent to their wives or partners. Men who were using alcohol were more likely to be violent to their wives compared to those who were not using alcohol. **Conclusion**: The study findings indicate that the prevalence of intimate partner violence in Manzese is high. The majority of women who experienced intimate partner violence did not take any action. There are various reasons which were associated with their silence and the most reported reasons included affection 21.9%, limited financial options 20.8%, and fearing the husband 19.8%. For the respondents who had the tendency of reporting incidences of violence most of them were reporting to family 30.7% and religious leaders 15.7%. **Recommendations**: Therefore with these findings prevention of intimate partner violence should be an urgent public health priority in countries with informal settlements such as Tanzania. There should also be policies and laws which limits people from alcohol abuse. Furthermore health policy makers should also plan for possible interventions on prevention of intimate partner violence including provision of education. Together with forming stations for providing counseling especially to young families. More ever stiffer measures should be taken to perpetrators of intimate partner violence to prevent others from practicing such kind of violence. Healthcare providers from the primary healthcare level onwards need to be sensitized to the issues of intimate partner violence in order to recognize and treat it early. This information obtained should also facilitate the speed of planners and other responsible stakeholders in upgrading of these informal settlements.

350. **Shewiyo DH, Kaale E, Risha PG, Dejaegher B, Smeyers-Verbeke J, Heyden YV. HPTLC methods to assay active ingredients in pharmaceutical formulations: A review**

of the method development and validation steps *Journal of Pharmaceutical and Biomedical Analysis*, **(2012); 66, 11-23.**

High-performance thin-layer chromatography (HPTLC) is still increasingly finding its way in pharmaceutical analysis in some parts of the world. With the advancements in the stationary phases and the introduction of densitometers as detection equipment, the technique achieves for given applications a precision and trueness comparable to high-performance liquid chromatography (HPLC). In this review, the literature is surveyed for developed and validated HPTLC methods to assay active ingredients in pharmaceutical formulations published in the period 2005-2011. Procedures and approaches for method development, validation and quantitative assays are compared with the standard ways of conducting them. Applications of HPTLC in some other areas are also briefly highlighted.

351.   Siegler AJ, Mbwambo JK, DiClemente RJ. Acceptability of medical male circumcision and improved instrument sanitation among a traditionally circumcising group in East Africa*AIDS and Behavior*, **(2012); 16 (7): 1846-1852.**

By removing the foreskin, medical male circumcision (MMC) reduces female to male heterosexual HIV transmission by approximately 60 %. Traditional circumcision has higher rates of complications than MMC, and reports indicate unsanitized instruments are sometimes shared across groups of circumcision initiates. A geographically stratified, cluster survey of acceptability of MMC and improved instrument sanitation was conducted among 368 eligible Maasai participants in two Northern Districts of Tanzania. Most respondents had been circumcised in groups, with 56 % circumcised with a shared knife rinsed in water between initiates and 16 % circumcised with a knife not cleaned between initiates. Contrasting practice, 88 % preferred use of medical supplies for their sons' circumcisions. Willingness to provide MMC to sons was 28 %; however, provided the contingency of traditional leadership support for MMC, this rose to 84 %. Future interventions to address circumcision safety, including traditional circumciser training and expansion of access to MMC, are discussed.

352.   Simba D, Kakoko D. Access to subsidized artemether-lumefantrine from the private sector among febrile children in rural setting in Kilosa, Tanzania.*Tanzania Journal of Health Research*, **(2012); 14 (2): 1-8.**

The World Health Organization aims at universal access to effective antimalarial treatment by the year 2015. Consequently, an enormous financial resource has been invested on Artemisinin Combination Therapy (ACT)) subsidy. In Tanzania, strategies to increase access of artemether-lumufantrine (ALu) rural areas, where the burden is highest, includes subsidy to the Faith-based Organisations (FBO) facilities and accredited drug dispensing outlets (ADDOs). This study was done to assess the extent to which children suffering from malaria access ALu from the private sector in rural areas. A total of 1,235 under fives randomly selected from 12 rural villages were followed up at home on weekly basis for six months in Kilosa district in 2008. Using a structured questionnaire, caretakers were interviewed about the child's history of fever in the past 7 days; type of treatment given and

the source. Baseline data were obtained on demographic characteristics, caretakers' knowledge about malaria and social economic indicators of the household. Of the 1,235 children followed-up, 740 care-seeking visits were recorded, of which, 264 (35.7%) were made at government health facilities and nearly a quarter (24.1%; 178/740) at ordinary shops that sell general merchandize including rice and sugar. Only 22% of the caretakers sought care from FBO and ADDOs. While 686 (86.6%) of the episodes were treated with antimalarials, only 319 (43%) received ALu, the recommended antimalarial. Majority (83%) of the visits made at government facilities were prescribed with ALu compared to less than half who went to FBO facilities (40.0%) and ADDOs (25.0%). In conclusion, this study has shown that less than a quarter of fever episodes suspected to be malaria in rural areas were made at FBO facilities and ADDOs, of which, less than half were treated with ALu. This shows that ALu subsidy to formal private sector does not adequately reach children in rural areas, where the malaria burden is highest. This cast some doubts if the target of universal access to effective antimalarial, by 2015, will be reached. There is need to consider enlisting the services of community health workers in the efforts to improve access to ALu in rural areas. Further research is needed to explore providers' / dispensers' preference for non-recommended antimalarials in the private sector and caretakers' preference for ordinary shops.

353.   Simba DO & Kakoko D. Primacy of effective communication and its influence on adherence to artemether-lumefantrine treatment for children under five years of age: a qualitative study. *BMC health services research*. 2012; *12*(1):146.

Background: Prompt access to artemesinin-combination therapy (ACT) is not adequate unless the drug is taken according to treatment guidelines. Adherence to the treatment schedule is important to preserve efficacy of the drug. Although some community based studies have reported fairly high levels of adherence, data on factors influencing adherence to artemether-lumefantrine (AL) treatment schedule remain inadequate. This study was carried-out to explore the provider's instructions to caretakers, caretakers' understanding of the instructions and how that understanding was likely to influence their practice with regard to adhering to AL treatment schedule. **Methods**: A qualitative study was conducted in five villages in Kilosa district, Tanzania. In-depth interviews were held with providers that included prescribers and dispensers; and caretakers whose children had just received AL treatment. Information was collected on providers' instructions to caretakers regarding dose timing and how to administer AL; and caretakers' understanding of providers' instructions. **Results**: Mismatch was found on providers' instructions as regards to dose timing. Some providers' (dogmatists) instructions were based on strict hourly schedule (conventional) which was likely to lead to administering some doses in awkward hours and completing treatment several hours before the scheduled time. Other providers (pragmatists) based their instruction on the existing circumstances (contextual) which was likely to lead to delays in administering the initial dose with serious treatment outcomes. Findings suggest that, the national treatment guidelines do not provide explicit information on how to address the various scenarios found in the field. A communication gap was also noted in which some important instructions on how to administer the doses were sometimes not provided or were given with false reasons. **Conclusions:** There is need for a review of the national malaria

treatment guidelines to address local context. In the review, emphasis should be put on on-the-job training to address practical problems faced by providers in the course of their work. Further research is needed to determine the implication of completing AL treatment prior to scheduled time.

354.   Simba DO, Kakoko D, Tomson G, Premji Z, Petzold M, Mahindi M, & Gustafsson LL. Adherence to artemether/lumefantrine treatment in children under real-life situations in rural Tanzania. *Transactions of the Royal Society of Tropical Medicine and Hygiene***, 2012;** *106***(1): 3-9.**

A follow-up study was conducted to determine the magnitude of and factors related to adherence to artemether/lumefantrine (ALu) treatment in rural settings in Tanzania. Children in five villages of Kilosa District treated at health facilities were followed-up at their homes on Day 7 after the first dose of ALu. For those found to be positive using a rapid diagnostic test for malaria and treated with ALu, their caretakers were interviewed on drug administration habits. In addition, capillary blood samples were collected on Day 7 to determine lumefantrine concentrations. The majority of children (392/444; 88.3%) were reported to have received all doses, in time. Non-adherence was due to untimeliness rather than missing doses and was highest for the last two doses. No significant difference was found between blood lumefantrine concentrations among adherent (median 286 nmol/l) and non-adherent [median 261 nmol/l; range 25 nmol/l (limit of quantification) to 9318 nmol/l]. Children from less poor households were more likely to adhere to therapy than the poor [odds ratio (OR) = 2.45, 95% CI 1.35–4.45; adjusted OR = 2.23, 95% CI 1.20–4.13]. The high reported rate of adherence to ALu in rural areas is encouraging and needs to be preserved to reduce the risk of emergence of resistant strains. The age-based dosage schedule and lack of adherence to ALu treatment guidelines by health facility staff may explain both the huge variability in observed lumefantrine concentrations and the lack of difference in concentrations between the two groups.

355.   Simbee G. Prevalence of substance use and psychosocialinfluencing factors among secondary school students in dodoma municipality.   Master of Medicine (Psychiatry) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Substance abuse among adolescents continues to be a growing concern globally and in this setting. Available information in Tanzania suggests that the drug abuse problem among youth both in school and out of school is on the increase. Adolescence is a developmental period of peak risk for onset of substance use and substance-related problems. Although many adolescents who engage in experimental use of alcohol and tobacco do not progress to regular use, some do progress and experience more chronic and severe substance-related problems that persist into adulthood. There is, however, some evidence that those adolescents who receive support from their families, schools, and the community at large are: less likely to involve themselves in substance use behavior; perform well in school; develop positive identities and grow up to be responsible adults in their families, society and at work. This study aimed at determining the prevalence of substance use and psychosocial factors

influencing drug use behavior among adolescents in secondary schools in an urban setting in the Tanzanian context so that more targeted preventive measures can be developed. **Materials and methods:** A descriptive cross-sectional study design; community based, using quantitative data collection methods. The study was conducted from August through November 2011 in Dodoma Municipality. The self-administered structured Student Based Health Promotion Questionnaire was modified and used to collect data.The study population comprised of 1501 ordinary level secondary school students from 12 schools who were selected using a multistage cluster sampling. A computer program SPSS windows version 18 was used to analyze the data. Both univariate and multivariate statistical analys **Results:** A total of 1496 respondents completed the study which constituted a response rate of 98.1%. Majority (44.3%) were aged between 18 and 19 years with an age range between 12 to 25 years and mean age 17.22 ± 1.87(2SD). Female respondents were51.5%. The overall prevalence of substance use was 14.6% of whom 78.4% (n=171) ofthem were using a single substance and 21.6% (n=47) were using multiple substances.The commonest substances used were inhalants (7.6%) followed by alcohol (6.8%), tobacco (3.7%), cannabis (2.0%) and other substances (0.9%). The peak age of onset is 14-16 years except for tobacco which had a peak age of onset at 20 years and above. Age, gender, religiosity, parental marital status, quality of parent-youth relationship, parental monitoring and values, substance use of significant others, the person the youth spends most time with generally, and when he/she goes out; their involvement in extracurricular activities, academic performance and post secondary career goals were significantly associated with substance use. On multivariate analysis, it was found that only youths'academic performance (OR=1.20, p>0.005, 95% CI =1.05-1.37), post secondary career goals (0R=1.74, p>0.004, 95% CI=1.05-1.31); feeling understood by parents (OR=3.79, p>0.024, 95% CI=1.18-12.14) and quality of relationship with parents (OR=1.60, p>0.006, 95% CI=1.14 - 2.24) were independently associated with substance use. **Conclusion and recommendations:** Substance use among Tanzanian school youths is highly prevalent. In addition, the findings confirm the importance of the quality of adolescent parent relationship and school motivation and performance as factors that positively influence substance use among youth. This calls for culturally creative intervention strategies that reaffirm the crucial monitoring role of parents and motivating role of educators. Laws and policies that facilitate and reinforce parental and educatorsroles in controlling substance abuse among adolescents should should be put in place.es were done using significance level set at P< 0.05

356.   **Singh M, Sasi P, Gupta VH, Rai G, Amarapurkar DN, & Wangikar PP. Protective effect of curcumin, silymarin and N-acetylcysteine on antitubercular drug-induced hepatotoxicity assessed in an in vitro model.** *Human & experimental toxicology*.**2012;** *31***(8): 788-797.**
Tuberculosis (TB) is highly endemic in India. The first-line anti-TB therapy (ATT) involving isoniazid (INH), rifampicin and pyrazinamide causes hepatotoxicity in approximately 11.5% of Indian patients. Studies have shown that ATT-induced hepatotoxicity is primarily due to oxidative stress caused by the drugs and metabolites. Herbal drugs with antioxidative properties have been tested in animal studies and clinical trials for the management of hepatotoxicity. The objective of this study was to investigate the role of curcumin (CUR), silymarin (SILY) and *N*-acetylcysteine (*N*-ACET) on hepatotoxicity by ATT drugs using an

in vitro model of human hepatocellular carcinoma cell line (HepG2). HepG2 cells were treated with ATT drugs alone or along with CUR, SILY or *N*-ACET for a 48-h duration. The cells were monitored for viability, morphology, respiring mitochondria and cell cycle. Our results suggest that the presence of hepatoprotective drugs during treatment of HepG2 cells with ATT drugs lowers the hepatotoxic effect of the latter. This is observed in terms of (a) increased cell viability, (b) healthy-looking cell morphology as revealed by phase contrast microscopy, (c) active respiring cells as observed with confocal microscopy upon staining with a mitochondrial membrane-specific dye, MitoTracker® Red, and reduction in the sub-G_1 peak in cell cycle analysis by flow cytometry. Our results suggest that these hepatoprotective drugs need to be further explored as potential adjuvant therapy along with ATT drugs.

357.   Sobngwi E, Ndour-Mbaye M, Boateng KA, Ramaiya KL, Njenga EW, Diop SN, Mbanya J, & Ohwovoriole AE. Type 2 diabetes control and complications in specialised diabetes care centres of six sub-Saharan African countries: The Diabcare Africa study. *Diabetes research and clinical practice*. **2012;** *95*(1):30-36.

Aim: The Diabcare Africa project was carried out across six sub-Saharan African countries to collect standardised and comparable information for the evaluation of diabetes control, management and late complications in diabetic populations at specialist clinics. **Methods**: A cross-sectional, descriptive study of 2352 type-2 diabetes patients who were treated at specialist clinics for at least 12 months prior to the study. **Results**: The mean age of patients was 53.0 _ 16.0 years and had 8.0 _ 6.0 years known duration of diabetes. 47% had their HbA1c assessed in the past year (mean 8.2 _ 2.4%) with 29% achieving a level <6.5%. 21% had BP within 130/80 mmHg and 65% were treated for hypertension. Fasting lipids were assessed in 45% of the patients with mean cholesterol level of 4.9 _ 1.2 mmol/L, HDL-cholesterol of 1.3 _ 0.7 mmol/L and triglycerides of 1.2 _ 0.7 mmol/L. 13% of the patients were treated for hyperlipidaemia, mostly with statins. Background retinopathy (18%) and cataract (14%) were the most common eye complications. Macrovascular disease was rare, and 48% had neuropathy. **Conclusions**: Half of the patients benefitted from standard care, and a third had appropriate glycaemic control – attributed to access to, rather than quality of care. This study providedevidence to support appropriate interventions to diabetic populations of sub-Saharan origin**.**

358.   Sokal D, Barone M, Li P, Simba R, Awori Q, Bowa K, & Zulu R. Minimally Invasive Male Circumcision. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. **2012; 59 (5): e100.**
359.   Soleimani H, Yahya N, Soleimani H, & Sadrolhosseini AR. (2012, September). Electromagnetic properties of polytetrafluoroethylene at microwave frequencies using finite element modeling waveguide adapter. In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012;(ICFAS2012) (Vol. 1482, No. 1, pp. 122-127): AIP Publishing.

Experimental and theoretical approaches were shown great potential to determine electromagnetic properties of dielectric materials at microwave frequencies. In this study, the application of Finite Element Modeling (FEM) of waveguide adapter was utilized to

investigate the distribution of electric and magnetic fields intensity of Polytetrafluoroethylene (PTFE) as dielectric sample. Essentially, the electric and magnetic fields intensity in various regions of waveguide were obtained. The computations of the reflection and transmission coefficients of dielectric sample were determined by implementation of Finite Element Methods and Nicolson-Rose-Wire (NRW) method as well. The results were compared with the experimental achievement results using the waveguide adapter in conjunction with a Vector Network Analyzer (VNA) at Microwave frequencies. The general observation indicate that, the level of transmission was greater than reflection for PTFE as dielectric material sample. Furthermore, among the two applied methods, the FEM is more accurate than the NRW method.

360. **Somi G, Keogh SC, Todd J, Kilama B, Wringe A, van den Hombergh J , Malima K , Josiah R, Urassa M, Swai R, Zaba B. Low mortality risk but high loss to follow-up among patients in the Tanzanian national HIV care and treatment programme.***Tropical Medicine and International Health***, (2012); 17 (4): 497-506.**

Objective: To analyse survival and retention rates of the Tanzanian care and treatment programme. Methods Routine patient-level data were available from 101 of 909 clinics. Kaplan-Meier probabilities of mortality and attrition after ART initiation were calculated. Mortality risks were corrected for biases from loss to follow-up using Egger's nomogram. Smoothed hazard rates showed mortality and attrition peaks. Cox regression identified factors associated with death and attrition. Median CD4 counts were calculated at 6month intervals. Results In 88,875 adults, 18% were lost to follow up 12months after treatment initiation, and 36% after 36months. Cumulative mortality reached 10% by 12months (15% after correcting for loss to follow-up) and 14% by 36months. Mortality and attrition rates both peaked within the first six months, and were higher among males, those under 45kg and those with CD4 counts below 50cells/μl at ART initiation. In the first year on ART, median CD4 count increased by 126cells/μl, with similar changes in both sexes. Conclusion Earlier diagnoses through expanded HIV testing may reduce high mortality and attrition rates if combined with better patient tracing systems. Further research is needed to explore reasons for attrition.

361. **Stambuli P.Occupational respiratory health symptoms and associated factors among street sweepers in Ilala municipality. Degree of Master of Public Health Dissertation 2012**. **Muhimbili University of Health and Allied Sciences.**

Background: Street working environment condition particularly exposed to organic and inorganic dust and chronic inhalation of dust during street sweeping may associated with increases in respiratory health symptoms among street sweepers. However the street sweepers rarely used PPEs while exposed to high level of dust which may contribute to increases the prevalence's of respiratory health symptoms. Few published studies have showed the chronic and lung function among street sweepers, but in Tanzania no published study about occupational respiratory health symptoms and associated factors among street sweepers. Objective: The objective of this study was to determine prevalence of respiratory health symptoms and associated factors among street sweepers in Ilala Municipality.

Materials and Methods: Cross-sectional analytical study was designed 102 street sweepers as exposed group and 85 street vegetable sellers as unexposed group means less exposed to street sweeping dust from Ilala Municipality who worked one year and above and none smoker habit were studied, the respondent rate was 57.7%. Respiratory health symptoms and socio-demographic information were collected by using a modified American Thoracic Society respiratory symptoms questionnaire and level of utilization of PPEs were assessed by closed ended questions. Frequency distribution, Chi square test and logistic regression were used in data analysis. Results: The prevalence of respiratory health symptoms was higher among exposed than unexposed group and the difference was statistically significant, for cough (54.9% vs 12.9%) phlegm (39.2 vs 7.1%), wheezing (32.4% vs 14.1%), nose irritating (35.8% vs 4.7%) and sneezing (63.7% vs 8.2). Street sweeping dust was the main associated factor to cough, phlegm, wheezing, nose irritating and wheezing outcomes, while age associated with cough and phlegm outcomes and duration of employment associated with cough outcomes among street sweepers, and the association was statistically significant p<0.05. Availability and wearing of mouth/nose mask was reported 70.6% and 61.8%. General availability of PPEs 41.2% responded once after three months and wearing of PPEs 47.1% responded did not wear frequently because not available at anytime which did not make them motivation of frequently wearing of PPEs during street sweeping. Conclusion: Respiratory health symptoms are associated with street sweeping dust exposure and the prevalence of respiratory health symptoms are higher among exposed group than unexposed group. Recommendations: The study has recommended that the appropriate and quality PPEs to be available and frequently wearing of PPE during street sweeping and medical intervention to be implemented for further diagnostic like sputum testing, chest x-ray and chest ultrasound for street sweepers.

362.   **Steinberg KM, Antonacci F, Sudmant PH, Kidd JM, Campbell CD, Vives L, Malig M , Scheinfeldt L, Beggs W, Ibrahim M, Lema G, Nyambo TB , Omar SA, Bodo JM, Froment A , Donnelly MP, Kidd KK, Tishkoff SA, Eichler EE. Structural diversity and African origin of the 17q21.31 inversion polymorphism***Nature Genetics***, (2012); 44 (8): 872-880.**

The 17q21.31 inversion polymorphism exists either as direct (H1) or inverted (H2) haplotypes with differential predispositions to disease and selection. We investigated its genetic diversity in 2,700 individuals, with an emphasis on African populations. We characterize eight structural haplotypes due to complex rearrangements that vary in size from 1.08-1.49 Mb and provide evidence for a 30-kb H1-H2 double recombination event. We show that recurrent partial duplications of the KANSL1 gene have occurred on both the H1 and H2 haplotypes and have risen to high frequency in European populations. We identify a likely ancestral H2 haplotype (H2-2) lacking these duplications that is enriched among African hunter-gatherer groups yet essentially absent from West African populations. Whereas H1 and H2 segmental duplications arose independently and before human migration out of Africa, they have reached high frequencies recently among Europeans, either because of extraordinary genetic drift or selective sweeps.

363. Steinberg KM, Antonacci F, Sudmant PH, Kidd JM, Campbell CD, Vives L, Scheinfeldt L, Beggs W, Ibrahim M, Lema G, Nyambo TB, Omar SA, Bodo JM, Froment A, Donnelly MP, Kidd KK, Tishkoff SA & Eichler EE. Structural diversity and African origin of the 17q21. 31 inversion polymorphism. *Nature genetics*. 2012; *44*(8): 872-880.

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364. Stöckl H , Filippi V, Watts C, Mbwambo JK. Induced abortion, pregnancy loss and intimate partner violence in Tanzania: A population based study BMC Pregnancy and Childbirth, (2012); 12, art. no. 12.

Background: Violence by an intimate partner is increasingly recognized as an important public and reproductive health issue. The aim of this study is to investigate the extent to which physical and/or sexual intimate partner violence is associated with induced abortion and pregnancy loss from other causes and to compare this with other, more commonly recognized explanatory factors.Methods: This study analyzes the data of the Tanzania section of the WHO Multi-Country Study on Women's Health and Domestic Violence, a large population-based cross-sectional survey of women of reproductive age in Dar es Salaam and Mbeya, Tanzania, conducted from 2001 to 2002. All women who answered positively to at least one of the questions about specific acts of physical or sexual violence committed by a partner towards her at any point in her life were considered to have experienced intimate partner violence. Associations between self reported induced abortion and pregnancy loss with intimate partner violence were analysed using multiple regression models.Results: Lifetime physical and/or sexual intimate partner violence was reported by 41% and 56% of ever partnered, ever pregnant women in Dar es Salaam and Mbeya respectively. Among the ever pregnant, ever partnered women, 23% experienced involuntary pregnancy loss, while 7% reported induced abortion. Even after adjusting for other explanatory factors, women who experienced intimate partner violence were 1.6 (95%CI: 1.06,1.60) times more likely to report an pregnancy loss and 1.9 (95%CI: 1.30,2.89) times more likely to report an induced abortion. Intimate partner violence had a stronger influence on induced abortion and pregnancy loss than women's age, socio-economic status, and number of live born children.Conclusions: Intimate partner violence is likely to be an important influence on

levels of induced abortion and pregnancy loss in Tanzania. Preventing intimate partner violence may therefore be beneficial for maternal health and pregnancy outcomes.

365. **Sudfeld CR, Wang M, Aboud S, Giovannucci EL, Mugusi FM, Fawzi W. Vitamin D and HIV progression among Tanzanian adults initiating antiretroviral therapy.** *PLoS ONE*, **(2012); 7 (6): art. no. e40036.**

Background: There is growing evidence of an association between low vitamin D and HIV disease progression; however, no prospective studies have been conducted among adults receiving antiretroviral therapy (ART) in sub-Saharan Africa. Methods: Serum 25-hydroxyvitamin D (25(OH)D) levels were assessed at ART initiation for a randomly selected cohort of HIV-infected adults enrolled in a trial of multivitamins (not including vitamin D) in Tanzania during 2006-2010. Participants were prospectively followed at monthly clinic visits for a median of 20.6 months. CD4 T-cell measurements were obtained every 4 months. Proportional hazard models were utilized for mortality analyses while generalized estimating equations were used for CD4 T-cell counts. Results: Serum 25(OH)D was measured in 1103 adults 9.2% were classified as vitamin D deficient (<20 ng/ml), 43.6% insufficient (20-30 ng/mL), and 47.2% as sufficient (>30 ng/mL). After multivariate adjustment, vitamin D deficiency was significantly associated with increased mortality as compared to vitamin D sufficiency (HR: 2.00; 95% CI: 1.19-3.37; p = 0.009), whereas no significant association was found for vitamin D insufficiency (HR: 1.24; 95% CI: 0.87-1.78; p = 0.24). No effect modification by ART regimen or change in the associations over time was detected. Vitamin D status was not associated with change in CD4 T-cell count after ART initiation. Conclusions: Deficient vitamin D levels may lead to increased mortality in individuals receiving ART and this relationship does not appear to be due to impaired CD4 T-cell reconstitution. Randomized controlled trials are needed to determine the safety and efficacy of vitamin D supplementation for individuals receiving ART.

366. **Sunguya BF, Poudel KC, Mlunde LB, Otsuka K, Yasuoka J , Urassa DP, Mkopi NP , Jimba M. Ready to Use Therapeutic Foods (RUTF) improves undernutrition among ART-treated, HIV-positive children in Dar es Salaam, Tanzania.** *Nutrition Journal*, **(2012); 11 (1): art. no. 60 .**

Background: HIV/AIDS is associated with an increased burden of undernutrition among children even under antiretroviral therapy (ART). To treat undernutrition, WHO endorsed the use of Ready to Use Therapeutic Foods (RUTF) that can reduce case fatality and undernutrition among ART-nave HIV-positive children. However, its effects are not studied among ART-treated, HIV-positive children. Therefore, we examined the association between RUTF use with underweight, wasting, and stunting statuses among ART-treated HIV-positive children in Dar es Salaam, Tanzania. Methods. This cross-sectional study was conducted from September-October 2010. The target population was 219 ART-treated, HIV-positive children and the same number of their caregivers. We used questionnaires to measure socio-economic factors, food security, RUTF-use, and ART-duration. Our outcome variables were underweight, wasting, and stunting statuses.

Results: Of 219 ART-treated, HIV-positive children, 140 (63.9%) had received RUTF intervention prior to the interview. The percentages of underweight and wasting among non-RUTF-receivers were 12.4% and 16.5%; whereas those of RUTF-receivers were 3.0% (P=0.006) and 2.8% (P=0.001), respectively. RUTF-receivers were less likely to have underweight (Adjusted Odd Ratio (AOR) =0.19, CI: 0.04, 0.78), and wasting (AOR=0.24, CI: 0.07, 0.81), compared to non RUTF-receivers. Among RUTF receivers, children treated for at least four months (n=84) were less likely to have underweight (P=0.049), wasting (P=0.049) and stunting (P<0.001). Conclusions: Among HIV-positive children under ART, the provision of RUTF for at least four months was associated with low proportions of undernutrition status. RUTF has a potential to improve undernutrition among HIV-positive children under ART in the clinical settings in Dar es Salaam, Tanzania.

367.   **Suzuki SN, Ishihara MI, Nakamura M, Abe S, Hiura T, Homma, K, Higa K, Hoshino D, Hoshizaki K, Ida H, Kawanishi M, Kobayashi K, Kuraji K, Kuramoto S, Masaki T,Niiyama K, Noguchi M, Noviya H, Saito S, Sato T, Shibano H, Shibata M, Suzuki M, Takashima A, Tanaka H, Takagi M, Tashiro N, Tokuchi N, Yoshida T, & Yoshida, Y. (2012). Nation-wide litter fall data from 21 forests of the Monitoring Sites 1000 Project in Japan.** *Ecological research*, *27*(6), 989-990.

This data paper reports litter fall data collected in a network of 21 forest sites in Japan. This is the largest litter fall data set freely available in Japan to date. The network is a part of the Monitoring Sites 1000 Project launched by the Ministry of the Environment, Japan. It covers subarctic to subtropical climate zones and the four major forest types in Japan. Twenty-three permanent plots in which usually 25 litter traps were installed were established in old-growth or secondary natural forests. Litter falls were collected monthly from 2004, and sorted into leaves, branches, reproductive structures and miscellaneous. The data provide seasonal patterns and inter-annual dynamics of litter falls, and their geographical patterns, and offer good opportunities for meta-analyses and comparative studies among forests.

368.   **Suzuki SN, Kachi N, & Suzuki JI. Variability of local spatial structure in a wave-regenerated Abies forest. Ecological research. 2012; 27(5): 893-901.**

Although some studies have demonstrated temporal patterns of changes in spatial structure during forest development, few studies have examined the variability of spatial structure between stands at the same developmental stage. In the present study, we investigated variations of spatial structure between sites at the same developmental stage for three developmental stages (sapling, intermediate, and mature) in a wave-regenerated *Abies veitchii* and *Abies mariesii* forest. The spatial structure of tree heights in each plot was analyzed by using the mark correlation and mark variogram methods, and the pattern of tree locations in each plot was analyzed by using the pair-correlation function. Analysis of the spatial height structure indicated that a size hierachy between neighboring trees (a local size hierarchy) generally did not develop at the sapling stage.A local size hierarchy developed in most plots during the two later stages. There was no

obvious difference among developmental stages in the spatial pattern of tree locations because of the large variation within each stage. Our results demonstrate that large variation in spatial structure existed between sites in the wave-regenerated *Abies* forest, even at the same developmental stage. The variability in spatial structure confirmed the importance of stochastic factors in forest dynamics.

369.   Swai E, & Masaaza S. Where there is no conventional veterinary health delivery services what are the capabilities of community animal health workers. Livest Res Rural Dev. 2012;24.

Livestock are a major asset for rural households throughout the developing world and are increasingly regarded as a means of reducing poverty. However, many rural areas are characterized by limited or no accessibility to veterinary services. Since the liberalization of animal health services in Tanzania in the early 1990s, community-based animal health workers (CAHWs) have become an important alternative animal health delivery channel in the country's marginal areas. However, professional veterinary practitioners, academicians have questioned the effectiveness of CAHW programmes in animal health service delivery. This article describes an assessment of the technical competence of CAHWs in Simanjiro district, Tanzania, which was conducted during the period of May to October 2010. From 88 listed CAHWs, 60 participated in the study and were individually assessed for 5 key technical competencies. These were ability to keep veterinary related records, knowledge of disease clinical signs, ability to match drugs with suspected disease, drug dosage and acaricide computation. Evaluation of competence was based on three attributes namely correctness, inconsistencies and not keeping/knowing or doing. Based on this formal assessment, the majority (over 60%) of the CAHWs were judged to be competent in keeping proper drug records, providing correct disease diagnosis and correctly matching the drugs with diagnosis. The main technical weaknesses of the CAHWs were poor and inconsistencies of drugs and acaricide dosage computation. The study revealed that if adequately trained and supervised, CAHWs are capable and may contribute toward delivering animal health services in under served areas. We recommends that training packages for CAHWs be designed in a participatory manner and expanded to include not only the identification, diagnosis, and treatment of common diseases, but also handling and the use of veterinary drugs. Policy attention is also needed to enhance the participation of CAHWs in animal health service delivery and to appropriately integrate their activities into the existing formal animal health delivery system in Tanzania.

370.   Sylvester I. Risk factors for macro vascular diseases in relation to glycemic control among type 1 diabetic children and adolescents attending diabetic clinic at muhimbili national hospital, dar es salaam. Master of Medicine (Paediatrics and Child Health) Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background Type 1 Diabetes Mellitus (T1DM) is the most common endocrine-metabolic disorder of childhood and adolescence. It has important physical and emotional development consequences. Individuals with T1DM confront serious lifestyle alterations. These include an absolute daily requirement for exogenous insulin, the need to monitor glucose level, and pay attention to dietary intake. Hyperglycemia is the primary mediator

of atherosclerosis in T1DM. Serum lipid abnormalities are prevalent in children and adolescents with T1DM. An association between elevated hemoglobin A1C (HbA1c) and serum lipid levels exists. Its association with atherosclerosis requires early intervention, therapeutic and preventive measures. Children with diabetes are already at an increased risk of early CVD, since diabetes is now recognized as an independent risk factor for future cardiovascular events. Currently available evidence suggests that lipid and lipoprotein abnormalities are more prevalent in children with T1DM compared to their non diabetic counterparts **Objective** To determine the risk factors for macro vascular disease in relation to glycemic control among type 1 diabetic children and adolescents attending diabetic clinic at Muhimbili National Hospital (MNH). **Methodology** A hospital based descriptive cross sectional study was done. All children and adolescents aged 2 to 19 years attending diabetic clinic at MNH who met the needed criterion were enrolled in the study. Bio-data such as age, sex, weight, etc was collected using a structured questionnaire designed for the purpose of the study. Venous blood was taken from the anterior cubital fossa of each child for determination of glycosylated hemoglobin (Hba1c) and lipid profile. Abdominal ultrasound was done to 85 study participants for fatty liver assessment. SPSS version 17 was used for data entry and analysis. P - value of less than 0.05 (p <0.05) was considered statistically significant. Ethical clearance to carry out the study was sought from MUHAS higher degree research and publication committee and MNH respectively. **Results** Ninety eight (98) participants were recruited into the study, 51% were females. Dyslipidemia was found in 73.5%.The main abnormality was high low density lipoprotein cholesterol (LDL – C) found in 29.6% patients. Other abnormalities were high TC in 25/98 (25.5%), low HDL cholesterol in 13/98 (13.3%) and high triglycerides in 5/98 (5.1%) patients. It was found that high LDL and TC increased with age. Poor and very poor glycemic control, duration of diabetes and overweight was associated with high LDL and total cholesterol. Among the 85 children and adolescents who had liver ultrasound done 15.3% were found to have mild fatty liver. Among those with mild fatty liver 46.2% had high LDL – C, 38.5% had high TC and15.4% had low HDL- C. **Conclusion and Recommendation** Children and adolescents with T1DM at MNH had high proportions of abnormal lipid profile. The commonest abnormal lipid profile found was high LDL – C followed by high TC. Abnormal lipid profile becomes prevalent as the glycemic control worsens. These results highlight on the importance of glycemic control in children and adolescents with T1DM. There is an intense need of early screening for dyslipidemia and early treatment so as to prevent cardiovascular disease in high risk diabetic patients.

371.   **Talbot E, Munseri P, Teixeira P, Matee M, Bakari M, Lahey T, & Von Reyn F. Test characteristics of urinary lipoarabinomannan and predictors of mortality among hospitalized HIV-infected tuberculosis suspects in Tanzania.** *PloS one*.**2012; 7(3): e32876.**

Background: Tuberculosis is the most common cause of death among patients with HIV infection living in tuberculosis endemic countries, but many cases are not diagnosed pre-mortem. We assessed the test characteristics of urinary lipoarabinomannan (LAM) and predictors of mortality among HIV-associated tuberculosis suspects in Tanzania. **Methods:** We prospectively enrolled hospitalized HIV-infected patients in Dar es Salaam, with ≥2 weeks of cough or fever, or weight loss. Subjects gave 2 mLs of urine to

test for LAM using a commercially available ELISA, ≥2 sputum specimens for concentrated AFB smear and solid media culture, and 40 mLs of blood for culture. **Results:** Among 212 evaluable subjects, 143 (68%) were female; mean age was 36 years; and the median CD4 count 86 cells/mm^3. 69 subjects (33%) had culture confirmation of tuberculosis and 65 (31%) were LAM positive. For 69 cases of sputum or blood culture-confirmed tuberculosis, LAM sensitivity was 65% and specificity 86% compared to 36% and 98% for sputum smear. LAM test characteristics were not different in patients with bacteremia but showed higher sensitivity and lower specificity with decreasing CD4 cell count. Two month mortality was 64 (53%) of 121 with outcomes available. In multivariate analysis there was significant association of mortality with absence of anti-retroviral therapy (p = 0.004) and a trend toward association with a positive urine LAM (p = 0.16). Among culture-negative patients mortality was 9 (75%) of 12 in LAM positive patients and 27 (38%) of 71 in LAM negative patients (p = 0.02).**Conclusions:** Urine LAM is more sensitive than sputum smear and has utility for the rapid diagnosis of culture-confirmed tuberculosis in this high-risk population. Mortality data raise the possibility that urine LAM may also be a marker for culture-negative tuberculosis.

372.   **Talbot EA, Maro I, Ferguson K, Adams LV, Mtei L, Matee MI & von Reyn CF, Maintenance of Sensitivity of the T-SPOT. TB Assay after Overnight Storage of Blood Samples, Dar es Salaam, Tanzania.** *Tuberculosis research and treatment***. 2012. Background:** T-SPOT.TB is an interferon gamma release assay for detecting Mycobacterium tuberculosis infection. The requirement to process within 8 hours is constraining, deters use, and leads to invalid results. Addition of T Cell Xtend reagent may allow delayed processing, but has not been extensively field tested. **Design:** Consecutive AFB smear positive adult tuberculosis patients were prospectively recruited in Dar es Salaam, Tanzania. Patients provided a medical history, 1–3 sputum samples for culture and 1 blood sample which was transported to the laboratory under temperature-controlled conditions. After overnight storage, 25 µL of T Cell Xtend reagent was added per mL of blood, and the sample was tested using T-SPOT.TB. **Results:** 143 patients were enrolled: 57 patients were excluded because temperature control was not maintained, 19 patients were excluded due to red blood cell contamination, and one did not provide a sputum sample for culture. Among 66 evaluable patients, overall agreement between T-SPOT.TB and culture was 95.4% (95%CI; 87.1–99.0%) with Kappa value 0.548. Sensitivity of T-SPOT.TB when using T Cell Xtend reagent was 96.8% (95%CI; 88.8–99.6%). **Conclusions:** When T Cell Xtend reagent is added to specimens held overnight at recommended temperatures, T-SPOT.TB is as sensitive as the standard assay in patients with tuberculosis.

373.   **Cosmas, R.Use of Insecticide Treated Nets and Temporal Concentration of Insecticide in Olyset Nets in Dar Es Salaam, Tanzania. Master of Science (Tropical Disease Control)Dissertation 2012. Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam***.**
 All mosquito nets act as a physical barrier, preventing access by vector mosquitoes and thus providing personal protection against malaria to the individual(s) using the nets. The pyrethroid insecticides used to treat nets, have an excito-repellent effect that adds a chemical barrier to the physical one offered by the net fabric, further reducing human–vector contact and increasing the protective efficacy of treated nets. Most commonly, the insecticide kills the malaria vectors that come into contact with the insecticide-treated nets (ITNs). By reducing the vector population in

this way, ITNs, when used by a majority of the target population (coverage rates > 80 %) has a mass effect by offering protection for all people in the community, including those who have no nets (Binka, 1998; Hawley, 2003). ITNs protect users against malaria in several ways; firstly, the fabric provides a physical barrier, so reducing man-mosquito contact. Secondly the impregnated insecticide knocks down and often kills mosquitoes that come into contact with the net. The insecticide dosage required for knockdown is well below the threshold level of mammalian toxicity (WHO, 2006). Thirdly impregnated insecticide is excito-repellent hence will prevent entry of mosquitoes into households with ITNs (Curtis et al., 1998, 2003). The two extra properties make ITNs advantageous over untreated nets, such that a treated net can be effective even if torn. If ITNs are used by the whole community the insecticidal effect results in reduced longevity of female Anopheles mosquitoes so that few survive for the time required for development of the malaria parasite to the sporozoite stage in the mosquito thereby reducing malaria transmission. Pyrethroids were developed after prolonged efforts to improve biological and chemical stability of the natural pyrethrins, which have long been known for their insecticidal effects. As well as causing a knockdown effect, insects encountering pyrethroids show restless behaviour and hyper excitability caused by involvement of the central nervous system. Pyrethroids may also have an anti-feeding effect on Anopheles mosquitoes (Becker et al., 2003). 2 The use of ITNs treated with synthetic pyrethroids is increasing fast in many malarial parts of the world including, sub-Saharan African countries. The efficacy and effectiveness of ITNs in terms of mortality and morbidity reduction in malaria endemic countries have been very well documented (Lengeler, 2004). The WHO currently advocates their universal use by all household members in malaria endemic areas. Previously, nets had to be re-treated every 6-12 months, more frequently if the nets were washed in between re-treatment. Nets were re-treated by dipping them in a mixture of water and insecticide and allowing them to dry in a shady place. Re-treatment kits (NGAO) were commercially available in retail shops, however not affordable by the needy majority, thus leading to low re-treatment rates (Chavasse et al., 1999; Mubyazi et al., 2002; Kolaczinski et al., 2004; Abdullah et al., 2005). The need for frequent re-treatment was a major barrier to widespread use of ITNs in endemic countries. For ITNs to be fully effective re-treatment rates need to be very high (WHO, 2003). The additional cost of the insecticide kit (NGAO) and the lack of understanding of its importance resulted in low retreatment rates in most African countries. One of the main programmatic issues affecting the conventional ITNs is the necessity for regular re-treatment. For a number of reasons (such as frequency and washing methods, wear and tear, UV light and others) the pyrethroid insecticide on net fabric wears off over time and has, therefore, to be replaced. There is convincing evidence that after 3 to 5 washes, the insecticide is removed from nets treated by conventional dipping. Under programmatic conditions, unless nets can be systematically be retreated after 3 washes as recommended by WHO (1998) the protective efficacy might be much lower than expected, especially if nets are frequently washed. While it is relatively easy to socially market mosquito nets to the population of endemic countries, the idea of a regular insecticide re-treatment has been found very difficult to implement (Minja, 2001; Armstrong-Schellenberg, 2002). 3 The barriers associated with the conventional ITNs that require re-treatment have been mitigated by the invention of long-lasting insecticidal mosquito nets (LLINs). Several companies have developed LLINs that maintain effective levels of insecticides for the life of the net fabric estimated to 5 years mitigating the need for conventional re-treatment. LLINs are treated in the factory with insecticide incorporated into or coated around the fibres, which makes them capable to resist multiple washes. LLINs are designed to survive for several years in the field without further maintenance, and to withstand for at least 20 washes without losing insecticidal activity. Application of LLINs is currently growing in many malaria endemic areas and these nets retain their insecticidal properties for their physical life in domestic use despite many washes (Tami et

al., 2004). The net fabric can either be polyesters with a physical life of 3–4 years or polyethylene with a physical life of 4–5 years (WHO, 2003). Currently several insecticide and net manufactures are active in developing long lasting nets technology (WHO, 2011). Several brands of nets are available in the country including Olyset, Permanet, Mbu net, Afya net, Safi net and others. Olyset nets have been found to be popular and durable than ordinary polyester nets. Currently, Olyset® nets are locally produced in East Africa by the A-Z Textile Industry in Arusha, Tanzania. Olyset® nets have permethrin incorporated into the polyethylene material during the manufacturing process at a concentration of 20g/kg (±3g/kg), 2%w/w (1.7 − 2.3% limits). The manufacturer has reported that, over time, insecticide migrates to the surface of the yarn, replacing the one that has been removed by washing. This migration being a temperature-dependent process, exposure of nets to heat after washing (e.g. few hours to sun) can accelerate it. Olyset® nets are very strong due to their thick fibres of high density polyethylene which gives them strength of about 180 denier despite the wide mesh of 4mm. Their durability and long-lasting insecticidal properties make them suitable for use in most rural settings in malaria endemic areas in Sub-Saharan Africa.

374. **Tarimo EA, Francis JM, Kakoko D, Munseri P, Bakari M, & Sandstrom E. The perceptions on male circumcision as a preventive measure against HIV infection and considerations in scaling up of the services: a qualitative study among police officers in Dar es Salaam, Tanzania.** *BMC public health*,2012; *12*(1): 529.

Background: In recent randomized controlled trials, male circumcision has been proven to complement the available biomedical interventions in decreasing HIV transmission from infected women to uninfected men. Consequently, Tanzania is striving to scale-up safe medical male circumcision to reduce HIV transmission. However, there is a need to investigate the perceptions of male circumcision in Tanzania using specific populations. The purpose of the present study was to assess the perceptions of male circumcision in a cohort of police officers that also served as a source of volunteers for a phase I/II HIV vaccine (HIVIS-03) trial in Dar es Salaam, Tanzania. **Methods:** In-depth interviews with 24 men and 10 women were conducted. Content analysis informed by the socio-ecological model was used to analyze the data. **Results:** Informants perceived male circumcision as a health-promoting practice that may prevent HIV transmission and other sexually transmitted infections. They reported male circumcision promotes sexual pleasure, confidence and hygiene or sexual cleanliness. They added that it is a religious ritual and a cultural practice that enhances the recognition of manhood in the community. However, informants were concerned about the cost involved in male circumcision and cleanliness of instruments used in medical and traditional male circumcision. They also expressed confusion about the shame of undergoing circumcision at an advanced age and pain that could emanate after circumcision. The participants advocated for health policies that promote medical male circumcision at childhood, specifically along with the vaccination program. **Conclusions:** The perceived benefit of male circumcision as a preventive strategy to HIV and other sexually transmitted infections is important. However, there is a need to ensure that male circumcision is conducted under hygienic conditions. Integrating male circumcision service in the routine childhood vaccination program may increase its coverage at early childhood. The findings from this investigation provide contextual understanding that may assist in scaling-up male circumcision in Tanzania.

375. **Tarimo G. Delay in seeking care among tuberculosis patients attending tuberculosis clinics in rungwe district, tanzania. Master of Public Health Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.*

Background: Tuberculosis is one of the major public health problems in Tanzania. The main control strategy in the country is passive case finding whereby people with symptoms are expected to go to health facilities for further investigation. Still there is delay in seeking care in the population**.** Delay in case detection and treatment may worsen the prognosis of the disease and spread of infection. It is therefore important to determine factors responsible for delay in seeking care in order to develop strategies to address them. **Objectives:** The main objective of this study was to asses social and cultural factors that contribute to delay in seeking care among tuberculosis patients attending DOTS clinics in Rungwe District **Materials and methods:** The study was a cross sectional analytical in nature conducted in Rungwe district involved 232 TB patients .Exit interview were used to collect data and data were analyzed computer software, Statistical Package for Social Science (SPSS) version 15. Convenience sampling was used to select study participants. Results were presented in frequencies, percentages and Chi-square test was applied to show the association between dependent and independent variables. Ethical issues were observed**. Results:** The study revealed majority of the patients (71%) delayed to seek care. Older (above 44 years) patients were at a significant elevated risk (OR = 3.8; 95% CI = 1.7, 8.5), to delay in seeking for health care. Similarly, although not significant, females were twice as likely as males to delay to seek for health care (OR = 2.1; 95% CI = 0.9, 4.5). Social and traditional practices had significant contribution to delay in seeking medical care. **Conclusion:** Factors associated with delay in seeking health care for more than 30 days after development of symptoms included age, gender, place of first resort and perceived severity of the disease. **Recommendation:** Community should be sensitized on seeking appropriate health care, sensitization programs should take into consideration different groups in a society such as women, elders, illiterate and poor by using culturally convenient media of communication to ensure that the whole community is reached.

376. **Tungu AM, Bråtveit M, Mamuya SD, Moen BE. Fractional exhaled nitric oxide among cement factory workers: A cross sectional study** *Occupational and Environmental Medicine***(2012).**

Background: It has been suggested that dust exposure causes airway inflammation among cement factory workers. However, there is limited information on the mechanisms of this effect. We 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 was 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. Conclusions: 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.

377. **Twaha K. Evaluation of availability and cost of essential antibiotics for paediatrics in mbeya, Tanzania. Master of Programme (Pharmaceutical Management) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam .*

Background: Poor availability of essential medicines in public health facilities and high medicines prices in the private medicines outlets are still the leading problems in the management of child health in Tanzania. Children particularly newborns, surfer from the variety of disease conditions than do adults and may require different medicines. Antibiotics play a key role in treating infectious diseases which are the major cause of morbidity and mortality in the developing world. In trying to address accessibility of Essential Medicines, the WHO releases Essential Medicine List for children, after every two years and each country is required to adopt such a new list. In Tanzania, a separate list of essential medicines for children has not yet adopted. Integrated Management of Childhood Illness (IMCI) is used as the integrated approach strategy to improve child health. **Objective:** The main objective of this study was to assess the availability, price and affordability of paediatric essential antibiotics in Mbeya Region. **Methods**: This was a cross-sectional survey in accordance with WHO/HAI methodology to assess the availability, affordability and price of essential antibiotics for children in Mbeya Region. Data were collected from 1 Medical store Department (Mbeya zonal office), 8 public hospitals, 30 Private Pharmacies and 30 Accredited Drug Dispensing Outlets. Median price of these medicines was compared with Management Science for Health reference prices, expressed as median price ratios. Average stock out days per year was assessed using a designed form. The salary of the lowest–paid unskilled government worker and National Poverty Line income were used to assess affordability of paediatric essential antibiotics. **Results:** The median availability of the lowest-price generics for paediatrics essential antibiotics at the Pharmacies, ADDO‟s and Public Hospitals was found to be 59.09%, 62.5%, and 45.5% antibiotics respectively. At the Zonal Medical stores department, only 13 out of the 22 antibiotics were in stock at the time of survey. The survey found that the median stock out days was 124 days per year. The median of Median Price Ratios of retail patient‟s prices for 20 generics antibiotics were 1.774 for 30 pharmacies. Also the median MPRs of 8 generic antibiotics were 2.0097 for 30 ADDO‟s. National Health Insurance Funds patient prices were 177.74% higher than public hospitals procurement price. Essential medicine such as Amoxicillin-Clavulanic acid syrup was absent in most of public hospitals and also not affordable at the

pharmacies for unskilled government workers in Mbeya. **Conclusion:** The survey reveals poor availability of paediatric essential antibiotics in the public sector. The stock-out days of the medicines is still high in Mbeya Region. In most of private medicine outlets some of medicines prices were at higher prices and may not be affordable for majority of the population. Therefore the availability, price and affordability of antibiotics for paediatrics should be improved in order to ensure equity in access for basic treatment option of infections in children. Through adopting health financing approach at the public hospitals, consideration of other alternative strategies for control measures of medicines prices and drug subsidation for basic essential antibiotics in the private sectors will make these commodities readily available and affordable by the majority of the people.

378.   **Uehara S, Watanabe Y, Nakazawa H, Adachi I, Aihara H, Asner DM, Mori T . & Julius T. Measurement of γ γ*→ π 0 transition form factor at Belle.** *Physical Review D*.**2012;** *86***(9): 092007.**

We report a measurement of the process $\gamma\gamma* \to \pi 0$ with a 759 fb−1 data sample recorded with the Belle detector at the KEKB asymmetric-energy $e+e-$ collider. The pion transition form factor, $F(Q2)$, is measured for the kinematical region 4 GeV2≲$Q2$≲40 GeV2, where $-Q2$ is the invariant-mass squared of a virtual photon. The measured values of $Q2|F(Q2)|$ agree well with the previous measurements below $Q2≈9$ GeV2 but do not exhibit the rapid growth in the higher $Q2$ region seen in another recent measurement, which exceeds the asymptotic QCD expectation by as much as 50%.

379.   **Urassa DP, Pembe AB, Mganga F. Birth preparedness and complication readiness among women in Mpwapwa district, Tanzania** *Tanzania Journal of Health Research*, (2012); 14 (1).

Avoidable mortality and morbidity remains a formidable challenge in many developing countries like Tanzania. Birth preparedness and complication readiness by mothers are critical in reducing morbidities and mortalities due to these complications. The aim of this study was to assess knowledge and practices with respect to birth preparedness and complication readiness among women in Mpwapwa district in Tanzania. A total of 600 women who became pregnant and or gave birth two years preceding the survey were interviewed. Among them 587 (97.8%) attended antenatal clinic (ANC) at least once during their last pregnancy. Two thirds of those who attended ANC made four or more visits. The median gestation age at booking for antenatal care was 16 weeks. However, 73.9% the women booked after 16 weeks of gestation. Two thirds of the women were 20-34years old and had at least primary education level. Three hundred and forty six (57.7%) had parity between two and four. Only 14.8% of the women knew three or more obstetric danger signs. The obstetric danger signs most commonly known included vaginal bleeding during pregnancy (19%), foul smelling vaginal discharge (15%) and baby stops moving (14.3%). The majority (86.2%) of the women had decisions made on place of delivery, a person to make final decision, a person to assist during delivery, someone to take care of the family and a person to escort her to health facility. Majority (68.1%) of

the women planned to be delivered by skilled attendant. One third of the women planned to deliver at home in the absence of a skilled birth attendant. In the bivariate analysis, age of the woman, education, marital status, number of ANC visits and knowing ≥3 obstetric danger signs were associated with birth preparedness and complication readiness. In multivariate logistic regression analysis, women with primary education and above were twice more likely to be prepared and ready for birth and complications. Women who knew ≥3 obstetric danger signs were 3 times more likely to be prepared for birth and complications. In conclusion, women with higher level of education and those who knew obstetric complications were more prepared for birth and complications. Further studies are recommended to find out why women do not prepare for birth or complications especially that need blood transfusion.

380. **Vaitha SJ. Magnitude and causes of low vision in adults attending the eye clinic at Muhimbili national hospital. Master ofMedicine(Ophthalmology) Dissertation 2012.** *Muhimbili University of Health and Allied Sciences.Dar es salaam.* **Background:** Globally, in 2006, World Health Organization (WHO) estimated that there were 314million visually impaired people in the world, 153 million of them being due to uncorrected refractive error. At least 45 million working adults aged between 16-49 years were affected globally.1According to the WHO low vision is visual acuity of less than 6/18 but equal to or more than3/60 in the better eye with best possible correction or with significant visual field loss (corresponding visual field loss of less than 20 degrees)2. A person with low vision has some residual useful vision, with the potential for enhancement of functional vision if they receive appropriate low vision care services.Several studies have been done on low vision in other countries; the available literature reveal that the studies done in Tanzania were mostly among children, there is no study on low vision which has been done among adults. **Objective:**To determine the magnitude and causes of low vision in adults attending theeye clinic at Muhimbili National Hospital, Dar es salaam Tanzania. **Methodology:**A cross-sectional study was conducted between April and September, 2011. A total of 561 patients who attended the general eye clinic at Muhimbili National Hospital were thoroughly assessed and treated by ophthalmologists and refractionists. One hundred patients whose vision did not improve to 6/18 and above after surgical, medical and optical treatment were referred to the low vision clinic. These 100 patients were enrolled in the study and complete low vision assessment was done. Data were entered in computer and analyzed using SPSS version 13. **Results:**Among 561 patients, there were 100(17.83%) patients with low vision. The highest proportion (10.3) of low vision patients was found among the age group of 18-27 years age, and a gradual trend of decrease in low vision patients with increasing age (0.2% in eldest age group of 78-87 years) was observed. Optic neuropathy was the predominant cause of low vision (47%) in the study population, followed by ARMD (9%), Retinitis pigmentosa (7%), glaucoma (7%), albinism (7%), amblyopia (7%), corneal diseases (5%), refractive errors (4%), diabetic retinopathy (4%) and macular scars (3%). **Conclusion:**The magnitude of Low vision is high among adults attending the eye clinic at Muhimbili National Hospital, with younger patients being affected more than older ones. Most causes are either treatable or preventable.

381. **Veenemans J, Schouten LR, Ottenhof MJ, Mank TG, Uges DR, Mbugi EV, Ayşe Y, Demir AT, Kraaijenhagen RJ, Savelkoul H & Verhoef H. Effect of preventive supplementation with zinc and other micronutrients on non-malarial morbidity in Tanzanian pre-school children: a randomized trial.** *PloS one*.2012; *7*(8): e41630.

Background: The efficacy of preventive zinc supplementation against diarrhea and respiratory illness may depend on simultaneous supplementation with other micronutrients. We aimed to assess the effect of supplementation with zinc and multiple micronutrients on diarrhea and other causes of non-malarial morbidity. Methods and Findings: Rural Tanzanian children (n = 612) aged 6–60 months and with height-for-age z-score < -1.5 SD were randomized to daily supplementation with zinc (10 mg) alone, multi-nutrients without zinc, multi-nutrients with zinc, or placebo. Children were followed for an average of 45 weeks. During follow-up, we recorded morbidity episodes. We found no evidence that concurrent supplementation with multi-nutrients influenced the magnitude of the effect of zinc on rates of diarrhea, respiratory illness, fever without localizing signs, or other illness (guardian-reported illness with symptoms involving skin, ears, eyes and abscesses, but excluding trauma or burns). Zinc supplementation reduced the hazard rate of diarrhea by 24% (4%–40%). By contrast, multi-nutrients seemed to increase this rate (HR; 95% CI: 1.19; 0.94–1.50), particularly in children with asymptomatic *Giardia* infection at baseline (2.03; 1.24–3.32). Zinc also protected against episodes of fever without localizing signs (0.75; 0.57–0.96), but we found no evidence that it reduced the overall number of clinic visits. Conclusions: We found no evidence that the efficacy of zinc supplements in reducing diarrhea rates is enhanced by concurrent supplementation with other micronutrients. By reducing rates of fever without localizing signs, supplementation with zinc may reduce inappropriate drug use with anti-malarial medications and antibiotics.

382. **Wangwe PJT, Balandya, B.Accuracy in diagnosis of postpartum haemorrhage using visual estimation of blood loss versus change in haematocrit in a tertiary teaching hospital in Tanzania.***Tanzania Journal of Health Research*, (2012); 14 (2): 1-9.

Postpartum haemorrhage is the leading cause of maternal death in the developing country and yet is poorly diagnosed due to inaccurate measurement of blood loss following delivery. A study was carried out at Muhimbili National Hospital (MNH) Tanzania between October 2005 and January 2006 to determine the accuracy of visual estimation of blood loss (VEBL) in comparison to laboratory measurement of blood loss in diagnosis of primary postpartum haemorrhage (PPH). A total of 426 pregnant women who were in active phase of labour were recruited and their venous blood was drawn for estimation of haematocrit before delivery and 12 hours thereafter. Active management of third stage of labour was conducted by giving 10IU of oxytocin (intramuscularly or intravenously) and this was followed by visual estimation of blood loss. The proportion of patients who developed PPH was then determined by both methods. The mean duration of third stage of labour was 8.3 minutes and mean blood loss was 164.9ml. The

prevalence of PPH was 8.9% and 16.2% by VEBL and changes in haematocrit, respectively. Change in haematocrit in diagnosis of PPH was found to be more accurate, specific with high positive predictive values compared to VEBL. The need for additional uterotonics was 5.8% and the commonest labour complications associated with PPH were second degree tear, retained placenta and EUA for continued bleeding. In conclusion, VEBL using calibrated vessel will increase accuracy where conventional method using non calibrated method is used for diagnosis of PPH. Service providers working in labour wards need to be trained on how to estimate blood loss using simulated methods so as to increase their long term memory and accuracy in diagnosis of post-partum haemorrhage, hence provision of immediate intervention.

383.   Xu YJ, Foubert K, Dhooghe L, Lemière F, Maregesi S, Coleman CM, Zou Y, Ferreira D, Apers S, & Pieters L. Rapid isolation and identification of minor natural products by LC–MS, LC–SPE–NMR and ECD: Isoflavanones, biflavanones and bisdihydrocoumarins from *Ormocarpum kirkii. Phytochemistry*.2012; *79*: 121-128.

The combination of the hyphenated techniques LC–MS and LC–SPE–NMR constitutes a powerful platform for the rapid isolation and identification of minor components from natural sources. Electronic circular dichroism (ECD) is a useful tool to determine the absolute configuration of small quantities of chiral molecules. In order to search for minor constituents present in an *Ormocarpum kirkii* extract, these techniques were applied for the separation and structure elucidation of a series of isoflavanones, biflavanones and biscoumarins. After optimization of chromatographic conditions and subsequent isolation, MS and 1D and 2D NMR data were collected. Experimental and calculated ECD spectra were used in conjunction with NMR data to confirm the absolute configuration of these compounds. Eight compounds were identified for the first time and six have been previously reported. The present approach offers a strategy for accelerating research on natural products.

384.   Yahya N, & Mustaffa MS. Application Of Rational Emotive Behaviour Therapy In Addressing The Problems Of Bulliying In The School: A Case Study. *Journal of Educational Psychology and Counseling*. 2012; 6: 123-128.

This study was to examine the theoretical approach that can be used against the client in solving a problem. This study was performed on one client at a school in Kluang, Johor who have behavior problems and negative thoughts. This study focuses on two aspects of the problems can be identified, namely the problem of aggressive acts such as bullying and fighting the teachers and the problems do not feel accepted by their friends and not loved by their parents. This study was conducted to provide a one-time counseling sessions and has been running for thirty minutes. Counselor had also sought approval for the session to be recorded as a reference and collection for the counselor. The suitable theory to used in thid session is rational emotive behaviour theory. The tecnique in REBT such as role-playing was applied in this session due to the client's unrational behaviour. Client behave in improper manner due to the negitive thoughts. Based on counselor's

reading on theory shows that it is suitable to be applied in session as to help client to achieve his/her goals and success in life. Keywords: REBT, Bulliying, Role-playing.

385.   Yahya N, & Zakariah MH. Synthesis and Characterization of YBa2Cu3O7 (Y123) via Sol Gel Method for Development of Superconducting Quantum Interference Device Magnetometer. *Journal of nanoscience and nanotechnology*. **2012; 12(10): 8147-8152.**

Electromagnetic (EM) waves transmitted by Horizontal Electric Dipole (HED) source to detect contrasts in subsurface resistivity termed Seabed Logging (SBL) is now an established method for hydrocarbon exploration. However, currently used EM wave detectors for SBL have several challenges including the sensitivity and its bulk size. This work exploits the benefit of superconductor technology in developing a magnetometer termed Superconducting Quantum Interference Device (SQUID) which can potentially be used for SBL. A SQUID magnetometer was fabricated using hexagon shape-niobium wire with $YBa_2Cu_3O_7$ (YBCO) as a barrier. The $YBa_2Cu_3O_7$ samples were synthesized by sol–gel method and were sintered using a furnace and conventional microwave oven. The YBCO gel was dried at 120 °C in air for 72 hours. It was then ground and divided into 12 parts. Four samples were sintered at 750 °C, 850 °C, 900 °C, and 950 °C for 12 hours in a furnace to find the optimum temperature. The other eight samples were sintered in a microwave with 1100 Watt (W) with a different sintering time, 5, 15, 45 minutes, 1 hour, 1 hour 15 minutes, 1 hour 30 minutes, 1 hour 45 minutes and 2 hours. A DEWAR container was designed and fabricated using fiberglass material. It was filled with liquid nitrogen (LN_2) to ensure the superconducting state of the magnetometer. XRD results showed that the optimum sintering temperature for the formation of orthorhombic Y-123 phase was at 950 °C with the crystallite size of 67 nm. The morphology results from Field Emission Scanning Electron Microscopy (FESEM) showed that the grains had formed a rod shape with an average diameter of 60 nm. The fabricated SQUID magnetometer was able to show an increment of approximately 249% in the intensity of the EM waves when the source receiver offset was one meter apart.

386.   Yahya N, Akhtar MN, & Koziol K. Encapsulation of Ni0. 8Zn0. 2Fe2O4 Single Crystals in Multiwall Carbon Nanotubes. *Journal of nanoscience and nanotechnology*. **2012; 12(10), 8116-8122**.

Magnetic nanoparticles in the hollow region of carbon nanotubes have attraction due to their changing physical electrical and magnetic properties. Nickel zinc ferrite plays an important role in many applications due to its superior magnetic properties. $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals were encapsulated in multiwall carbon nanotubes (MWCNTs). The magnetic nano crystals were prepared using a sol–gel self combustion method at the sintering temperature of 750 °C and were characterized by XRD, FESEM, TEM and VSM. Initial permeability, Q-factor and relative loss factor were measured by impedance vector network analyzer. XRD patterns were used for the phase identification. FESEM images show morphology and dimensions of the grains of $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals and $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals in MWCNTs. TEM images were used to

investigate single crystal and encapsulation of $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals in the MWCNTs. VSM results confirmed super paramagnetic behaviour of encapsulated $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals. It was also attributed that encapsulated $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals in MWCNTs showed a higher initial permeability (51.608), Q-factor (67.069), and low loss factor (0.0002) as compared to $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals. The new encapsulated $Ni_{0.8}Zn_{0.2}Fe_2O_4$ single crystals in the MWCNTs may have potential applications in electronic and medical industries.

387.   Yahya N, Akhtar MN, Nasir N, Kashif M, Shafie A, & Zaid HM. Guided and Direct Wave Evaluation of Controlled Source Electromagnetic Survey Using Finite Element Method. *Journal of Electromagnetic Analysis and Applications*. **2012; 4:135.**

Deep target hydrocarbon detection is still challenging and expensive. Direct hydrocarbon indicators (DHIs) in seismic data do not correspond to economical hydrocarbon exploration. Due to unreliability in seismic data for the detection of DHIs, new methods have been investigated. Marine controlled source electromagnet (MCSEM) or Sea bed logging (SBL) is new method for the detection of deep target hydrocarbon reservoir. Sea bed logging has also the potential to reduce the risks of DHIs in deep sea environment. Modelling of real sea environment helps to reduce the further risks before drilling the oil wells. 3D electromagnetic (EM) modelling of seabed logging requires more accurate methods for the detection of hydrocarbon reservoir. Finite element method (FEM) is chosen for the modelling of seabed logging to get more precise EM response from hydrocarbon reservoir below 4000 m from seabed. FEM allows to investigate the total electric and magnetic fields instead of scattered electric and magnetic fields, which shows accurate and precise resistivity contrast below the seabed. From the modelling results, It was investigated that Hz field shows higher magni- tude with 342% than the Ex field. It was observed that 0.125 Hz frequency can be able to show better resistivity contrast of Hz field (31.30%) and Ex field (16.49%) at target depth of 1000 m below seafloor for our proposed model. Hz and Ex field delineation was found to decrease as target depth increased from 1000 m to 4000 m. At the target depth of 4000 m, no field delineation response was seen from the current electromagnetic (EM) antenna used by the industry. New EM antenna has been used to see the EM response for deep target hydrocarbon detection. It was investigated that novel EM antenna shows better delineation at 4000 m target depth for Ex and Hz field up to 10.3% and 15.1% respectively. Novel EM antenna also shows better Hz phase response (128.4%) than the Ex phase response (38.3%) at the target depth of 4000 m below the seafloor.

388.   Yahya N, Kamel NS, & Malik AS. Speckle noise filtering based on signal subspace technique. In Computational Intelligence and Cybernetics (CyberneticsCom), International Conference on 2012, July; IEEE. 2012; 168-174.

In this paper, a subspace-based technique for speckle noise reduction in images is proposed. The **method** is based on a linear model obtained by minimizing the energy of image distortion while keeping the energy of the residual noise in each spectral component below some given threshold. Image enhancement is achieved by removing the

noise subspace and estimating the clean signal from the remaining signal subspace. The performance of the proposed approach is tested with simulated images and real SAR images, and compared with Lee and homomorphic anisotropic diffusion filters. The **results** indicate that the proposed technique increases the signal-to-noise ratio (SNR) by 3.6dB to 5.7dB over the noisy image. In addition, the proposed SDC algorithm is better at preserving the fine texture and introduces less blurring effect into the denoised image.

389.   Yahya N, Kamel NS, & Malik AS. Speckle reduction of SAR images based on signal subspace technique. In Intelligent and Advanced Systems (ICIAS), International Conference on. 2012, June; IEEE. 2012; (2): 670-675.

In this paper, speckle removal from synthetic aperture radar (SAR) images using subspace-based technique is proposed. The fundamental principle is to decompose the vector space of the noisy image into signal-plus-noise subspace and the noise subspace. Noise reduction is achieved by removing the noise subspace and estimating the clean image from the remaining image subspace. Linear estimation of the clean image is performed by minimizing image distortion while maintaining the residual noise energy below some given threshold. Since the noise is considered to be additive with subspace technique, a homomorphic framework is used to convert the multiplicative speckle noise into additive. The performance of the proposed approach is tested with simulated images and with real SAR images, and compared with Lee filter. The results indicated significant improvements by the proposed technique in terms of structural similarity index measure (SSIM) and equivalent number of looks (ENL).

390.   Yahya N, Nasir N, Akhtar MN, Kashif M, Hussain T, Zaid HM, & Shafie A. Electromagnetic Response Studies of the Antenna for Deep Water Deep Target CSEM Environments. Journal of Electromagnetic Analysis and Applications. 2012; 4(12): 513.

The Controlled Source Electromagnetic Method (CSEM) is used for offshore hydrocarbon exploration. Hydrocarbon detection in seabed logging (SBL) is a very challenging task for deep hydrocarbon reservoirs. The electromagnetic field response of an antenna is unable to detect deep hydrocarbon reservoirs due to a weak electromagnetic signal response in the seabed logging environment. This work premise deals with the comparison of the electromagnetic signal strength of a new antenna with a straight antenna and the orientation of an antenna for deep target hydrocarbon exploration. Antenna position and orientation (Tx and Ty) was studied using Computer Simulation Technology software (CST) for deep targets in marine CSEM environments. The model area was assigned as $(40 \times 40$ km) to replicate the real seabed envi- ronment. From the results, the new dipole antenna shows an 804% and 278% increase in electric and magnetic field strength than the straight antenna. An electric (E) and magnetic (H) field component study was done with and without the presence of a hydrocarbon reservoir. Ex and Hz field component responses with the new antenna at the 1 km target were measured in a deep water environment. It was analyzed that the antenna shows 53.10% (Ex) and 83.13% (Hz) field difference in deep water with and without a hydrocarbon

reservoir at the 30 m antenna position from the sea floor. From the antenna orientation results, it was observed that, the electric field Ex and magnetic field Hz responses decreased from 18% to 12% and 21% to 16%, respectively but was still able to detect the deep target hydrocarbon reservoir at the 4 km target depth. This EM antenna may open new frontiers for the oil and gas industry for deep target hydrocarbon detection (HC).

391.   **Yahya N, Nasir N, Akhtar MN, Kashif M, Zaid HM, & Shafie A. Modeling of Antenna for Deep Target Hydrocarbon Exploration.** *Journal of Electromagnetic Analysis and Applications*. **2012;4:30.**

Nowadays control source electromagnetic method is used for offshore hydrocarbon exploration. Hydrocarbon detection in sea bed logging (SBL) is a very challenging task for deep target hydrocarbon reservoir. Response of electromagnetic (EM) field from marine environment is very low and it is very difficult to predict deep target reservoir below 2 km from the sea floor. This work premise deals with modeling of new antenna for deep water deep target hydrocarbon exploration. Conventional and new EM antennas at 0.125 Hz frequency are used in modeling for the detection of deep target hydrocarbon reservoir. The proposed area of the seabed model (40 km ′ 40 km) was simulated by using CST (computer simulation technology) EM studio based on Finite Integration Method (FIM). Electromagnetic field components were compared at 500 m target depth and it was concluded that Ex and Hz components shows better resistivity contrast. Comparison of conventional and new antenna for different target depths was done in our proposed model. From the results, it was observed that conventional antenna at 0.125 Hz shows 70%, 86% resistivity contrast at target depth of 1000 m where as new antenna showed 329%, 355% resistivity contrast at the same target depth for Ex and Hz field respectively. It was also investigated that at frequency of 0.125 Hz, new antenna gave 46% better delineation of hydrocarbon at 4000 m target depth. This is due to focusing of electromagnetic waves by using new antenna. New antenna design gave 125% more extra depth than straight antenna for deep target hydrocarbon detection. Numerical modeling for straight and new antenna was also done to know general equation for electromagnetic field behavior with target depth. From this numerical model it was speculated that this new antenna can detect up to 4.5 km target depth. This new EM antenna may open new frontiers for oil and gas industry for the detection of deep target hydrocarbon reservoir (HC).

392.   **Yahya N, Puspitasari P, Koziol K, & Pavia G. New Approach to Ammonia Synthesis by Catalysis in Magnetic Field.** *Journal of Nano Research*. **2012; 16: 119-130.**

Ammonia production is a capital-intensive industry as it requires high temperature (400-500oC) and also high pressure (150-300 bar) for its daily operations. An earnest effort was made to synthese ammonia gas using an in-house designed microreactor. The production of ammonia was carried out in a magnetic field reaction zone, with the reaction temperature of 30°C - 280°C and ambient operation pressure. $Mn_{0.8}Zn_{0.2}Fe_2O_4$ nanoparticles, synthesized using the sol gel method, were used as the

catalyst for the ammonia synthesis. XRD confirmed the single phase ferrites and FESEM images revealed nanofibre-like morphology when sintered at 700oC in argon gas. Electron diffraction was performed using HRTEM and obtained diffraction patterns confirmed the crystal structure of the catalyst. By using the Kjeldahl method it was found that the reaction carried out in 1 Tesla magnetic field gave approximately 46% ammonia yield. The proposed new method could be appealing for ammonia manufacturers due to highly economical implication which may offer urea producers a potential contender in the competitive market place.

393.   Yahya N. S1. 2: Status Epilepticus: What's New?. Malaysian Journal of Paediatrics and Child Health. 2012; 17(1).

The talk will briefly cover the epidemiology of status epilepticus (SE) in children and the latest understanding of the pathophysiology. The main focus will be on the options of treatment based on the current evidence in literatures. The management of SE will be discussed started with pre-hospital as well as treatment of early SE, followed by the management of established SE and some discussions on refractory SE. The role of EEG in the diagnosis and monitoring of SE will also be highlighted.

394.   Yamanis TJ, Doherty IA, Weir SS, Bowling JM, Kajula LJ , Mbwambo JK , Maman S. From Coitus to Concurrency: Sexual Partnership Characteristics and Risk Behaviors of 15-19 Year Old Men Recruited from Urban Venues in Tanzania *AIDS and Behavior*, (2012) ; 1-11.

Understanding the uptake and patterns of sexual partnerships of adolescent males reveals their risky behaviors that could persist into adulthood. Using venue-based sampling, we surveyed 671 male youth ages 15-19 from an urban Tanzanian neighborhood about their sexual partnerships during the past 6 months. The proportion of males who had ever had sex increased with age (21 % at age 15; 70 % at age 17; 94 % at age 19), as did the proportion who engaged in concurrency (5 % at age 15; 28 % at age 17; 44 % at age 19). Attendance at ≥2 social venues per day and meeting a sexual partner at a venue was associated with concurrency. Concurrency was associated with alcohol consumption before sex among 18-19 year olds and with not being in school among 15-17 year olds. We find that concurrency becomes normative over male adolescence. Venue-based sampling may reach youth vulnerable to developing risky sexual partnership patterns.

395.   Youmans S, Ngassapa O, & Chambuso M. Clinical pharmacy to meet the health needs of Tanzanians: Education reform through partnership across continents (2008–2011). *Journal of public health policy*.2012; 33: S110-S125.

In 2009, the Muhimbili University of Health and Allied Sciences (MUHAS) School of Pharmacy began to revise its BPharm curriculum for students entering in 2011. Its goal was to assure these pioneer students and their successors would be prepared to lead pharmacy practice to improve patient care and health outcomes in Tanzania. Building on its own experience and recommendations from other parts of the world, MUHAS actively

engaged counterparts from the University Of California San Francisco School Of Pharmacy. MUHAS's vision was to create a curriculum to educate students to become 'clinical pharmacists' with a more direct patient-care focus. This means a major expansion in activities undertaken by newly graduating pharmacists – beyond preparing and dispensing medications. With the transformation from a traditional curriculum (knowledge-based) and teaching (lectures), the new approach emphasizes interprofessional team care, clinical science content (treatment and prevention of diseases), and experiential learning opportunities from classrooms to patient-care settings. Assessments of strengths and weaknesses of previous graduates' performance in their early employment informed curricular revision; evaluation of the competence of students and of new graduates will guide further revisions to assure preparation of effective pharmacists to lead practice in Tanzania.

396.   **Zaid HM, Yahya N, Latiff NA, & Demiral B. September. Synthesis and characterization of dielectric nanoparticles for application in enhanced oil recovery. In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012:(ICFAS2012) .2012; 1482 (1):146-151.**

A non-invasive electromagnetically enhanced oil recovery (EOR) method by injecting nanofluids into the oil reservoir simultaneously with electromagnetic irradiation, with the intention to create disturbance at oil-water interfaces and increase oil production has been proposed. Dielectric nanoparticles having relatively high dielectric loss factor were chosen due to the abundance of bound surface charges which exist at the surface. In this research, zinc oxide, ZnO and aluminium oxide, Al2O3 nanoparticles were successfully synthesized by sol-gel method. Zinc nitrate hexahydrate and aluminium nitrate nonahydrate were used as the precursors for ZnO and Al2O3 respectively. Solutions formed by dissolving zinc nitrate hexahydrate and aluminium nitrate nonahydrate in nitric acid were stirred in 14 days to ensure homogeneity. The resulting xerogels were annealed at various temperatures; 200°C, 250°C and 300°C for ZnO and 900°C, 1000°C and 1100°C for Al2O3 , respectively. The as-synthesized ZnO and Al2O3 nanoparticles were characterized by X-Ray Diffraction (XRD), Field Emission Scanning Electron Microscope and Energy Dispersive X-Ray Spectroscopy (EDX). XRD analysis shows that the resulting nanoparticles have high crystallinity, which can be indexed to standard hexagonal structure for both ZnO and Al2O3 , having average crystallite size of 45nm and 38nm, respectively. Dielectric properties of both nanoparticles shows that Al2O3 has higher dielectric losses in the low frequency region compared to ZnO which may be resulted from its highly porous structure and impurities existence.

397.   **Zaid HM, Jamal MR, Yahya N, & Shafie A. (2012, September). Magnitude of EM wave versus offset study in the detection of deep reservoir using sea bed logging method. In INTERNATIONAL CONFERENCE ON FUNDAMENTAL AND APPLIED SCIENCES 2012;(ICFAS2012) (Vol. 1482, No. 1, pp. 170-175): AIP Publishing.**

Seabed Logging (SBL) is a method developed to detect the location of hydrocarbon reservoir below the seabed. This method, which uses Electromagnetic (EM) wave of low frequency, has shown highly promising results in the detection of hydrocarbon up to 1000 m deep below the seafloor. However, the method is not as successful in the detection of deeper target (>1000 m) due to the attenuation of EM wave. The objective of this research is to study the Magnetic Versus Offset (MVO) in the detection of deep hydrocarbon targets. CST software was used to simulate the environment and SBL setup and it was able to show the magnitude of electric field at various offsets. The MVO at various offsets was studied for targets from 500 m to 4000 m using EM of frequencies 0.125 and 0.0625 Hz. The results showed that the MVO at intermediate offset which ranges between −3000 m until −6000 m from the antenna demonstrated distinctive differences between the environments with hydrocarbon from the one without hydrocarbon in detection of deep reservoir.

398.   Zephania M. The prevalence of bacterial contamination in donated blood in dar es salaam, tanzania, 2010. Master of Science in Epidemiology and Laboratory Management   Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam*.

Introduction: Blood transfusion services are required to provide blood and components which are safe in cost effective way for transfusion into patients who require the blood products. **Study objective**: This study aims to determine the prevalence of bacterial contamination and the antimicrobial resistance pattern in collected blood in Eastern zone blood transfusion centre. **Methodology**: A cross-sectional study was conducted at Eastern Zone Blood Transfusion Services located at Mchikichini, Ilala District, in Dar es Salaam. Stored whole blood bags were selected from the refrigerator containing 500 blood bags using a simple random sampling technique. About 384 blood bags were randomly picked for study, each blood bag was given an ID number (1-500), and a table of random numbers was used to select the 384 donated blood bags. Culture was done on different media; isolates were identified using standard biochemical and bacteriological methods. Kirby- Bauer disk diffusion method was used for antimicrobial susceptibility testing according to existing guidelines of CLSI. Data entry and analysis were performed using EpiInfo 3.5.1. **Results:** About 11 (2.8%) were found to have bacterial contamination, of which 9 (2.3%) were gram positive cocci and 2 (0.5%) gram positive rods**.** The bacterial isolates were about 7 (63.6%) coagulase negative staphylococci identified as *Staphylococcus epidermidis* and 2 (18.2%) were micro cocci identified as *M.luteus* and bacilli species identified as *Corynebacterium diphther*oids. Sensitivity among the organisms were varied; as all the 11 (100%) of the organisms isolated were sensitive to amikacin, of which 7 (100%) *Staphylococcus epidermidis* were sensitive to ciprofloxacin, gentamycine, cefriaxone, erythromycin and co-trimoxazole. Gram positive rods were tested against erythromycin and Gentamycine; where 100% were sensitive to Gentamycine and (60.5%) were sensitive to erythromycin. *M.luteus* were tested against ceftriaxone and gentamycin had (98%) and (97.5%) sensitivity to these antibiotics respectively. Gram positive rods showed (100%) resistant to ampicilin, cotrimoxazole and tetracycline **Conclussion:** The isolates obtained in the donated blood are skin

associated organisms and are considered as contaminants related to procedure during donor bleeding or taking sample for culture.

399.   Zinga M. Malaria parasitaemia and associated preventive factors among pregnant women in misungwi and nyamagana district, mwanza region, 2012. Master of Science in Tropical Diseases Dissertation 2012. *Muhimbili University of Health and Allied Sciences.Dar es salaam*

Background: Malaria is still a problem during pregnancy in Tanzania and is associated with maternal anemia, premature delivery, intrauterine growth retardation and low birth weight. Tanzania adopted The World Health Organization (WHO) recommendation that all pregnant women living in sub-Saharan Africa countries with stable malaria transmission to receive Intermittent Preventive Treatment during pregnancy (IPTp) using two doses of *Sulphadoxine Pyrimethamine*, use Insecticide treated bed nets (ITNs) and effective case management of malaria and anemia. There is increased SP resistance and low uptake of IPTp-SP and unequal distribution of prevention tools like ITNs between rural and urban settings in the country. This study aims at determining preventive factors that are associated with presence of malaria parasitaemia and anemia among pregnant women. **Methods:** A cross-sectional hospitalbased study was conducted between May and June 2012, where a pretested questionnaire was administered to 400 pregnant women at selected nine antenatal clinics in Misungwi and Nyamagana districts in Mwanza and blood samples were collected for determining malaria parasitaemia and anaemia. The antenatal booklets were inspected for timing and number of visits to the clinic, obstetric history and use and timing of IPTp-SP. Data were entered, cleaned and analyzed using STATA software version 10. Data were summarized using frequency distribution tables for categorical variables and by calculating means and standard deviations for continuous variables. For categorical variables proportions were compared using $X2$ test or Fisher's exact test, logistic regression were used to identify independent predictors of malaria and SP use. **Results:** Of the 400 pregnant women studied, 5.5% (22/400) had *P.falciparum* malaria. The prevalence of anaemia was 48.6% (194/399). Coverage of SP for at least one dose was 40% and for second dose was 16%. About 98% of respondents reported to own and use ITNs. No significant association was observed between malaria parasitaemia and anaemia (OR=0.87, 95%CI, 0.36-2.02, P=0.7). Risk factors for malaria parasitaemia were primigravidae (AOR=2.53,95%CI, 0.97-6.58, P=0.05) and non- use of SP (AOR=7.68, 95%CI, 1.74-33.75. P=0.007). **Conclusion:** 5.5% of pregnant women had malaria parasitaemia, About 50% had mild anaemia. However given the health impact of the diseases in pregnancy, antenatal interventions such as IPTp-SP are needed to be improved to reach the recommended coverage.

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