

ABSTRACT BOOK

**THE THIRD ANNUAL SCIENTIFIC CONFERENCE
OF THE FACULTY OF MEDICINE AND
SCHOOL OF PUBLIC HEALTH
MAKERERE UNIVERSITY**

***PRIORITIES FOR RESEARCH AND BETTER
HEALTH***

SPEKE RESORT BEACH, MUNYONYO

AUGUST 29-31 2007



Message from the Dean and Director



Dear Participants,

We are very pleased to welcome you all to the third Annual Scientific Conference. The conference was co-organized by the Faculty of Medicine and School of Public Health. The enthusiasm shown by the many delegates from within and outside Uganda was very encouraging. For the second year running the Faculty of Medicine has combined forces with the School of Public Health in organizing this conference fulfilling our dream of making it a regular annual event of institutions.

The main theme of the conference is “Priorities for research and better health”. We have put up a very rich programme that discusses how prioritization of research could help improve health. There is a lot of innovative research being presented particularly by very young researchers who are going to become the pillars of research in the years to come. I am sure the three days will be informative and will provide a platform for a wealthy scientific discussion.

We are particularly very grateful to all those institutions and individuals that have supported us financially so that we are able to put up such a colourful scientific programme.

We welcome you all we wish you a pleasant stay.

Professor Nelson Sewankambo
Dean, Faculty of Medicine

Associate Professor David Serwadda
Director, MUIPH

Message from the Chairperson, Organizing Committee



It is a very exciting time of the year to have this conference. It is a time to share and learn. I am very grateful to be part of the third Faculty of Medicine and School of Public Health Scientific Conference. I am very pleased to report that the awareness of this annual conference is on the increase both locally and internationally. Increasingly more and more people are planning to present their work in this conference and others have marked it as a place they will come to update their scientific knowledge annually. I am also impressed that many students have cut their teeth in preparing and presenting their scientific work and have also received invaluable comments to improve their careers in this conference.

I highly appreciate the tireless work of the various committees; Scientific/Programmes, Finance, Publicity and Logistic to make this conference a great success. Most important of all I am grateful to those people who submitted their papers and all attendees.

Thank you.

Dr. Moses L. Joloba
Chair, Organizing Committee

Message from the Chairperson, Scientific Committee



This is a very exciting conference which has surpassed our expectations. We received excellent papers and were forced not to accept some because of limited time and space.

I would like you to come and listen to these high quality research papers: a testimony of the vibrancy and excellence of Makerere University, Faculty of Medicine and the Institute of Public Health.

I wish to thank the members of the Scientific Committee for the excellent organizational and editing skills.

Thank you all,

Professor James K Tumwine

Editor African Health Sciences and Chair Scientific Committee

2nd Annual Makerere University Faculty of Medicine/Institute of Public Health Scientific Conference

P. O.Box 7072

Kampala/Uganda

Email: jtumwine@imul.com

Organizing Committees

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4. Juliet Bakyawa, Member
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Logistics committee

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The conference has received generous support from the following organizations

MU-CWRU
Malaria Consortium
Mulago / Mbarara Teaching Hospitals Joint AIDS Program (MJAP)
IAVI/UVRI
World Health Organization, Kampala Regional Office
NUFU Program
MRC/UVRI Uganda Research Unit on AIDS
MU-JHU
MU-WRP
Baylor College of Medicine, Kampala, Uganda

**PROGRAM OF THE 3RD ANNUAL SCIENTIFIC CONFERENCE
OF SCHOOL OF PUBLIC HEALTH AND FACULTY OF
MEDICINE, MAKERERE UNIVERSITYPH AND August 29-31, 2007**

DAY 1 29TH AUGUST 2007

PARALLEL SESSION A

PLENARY SESSION

TIME	NUTRITION	Chairperson:
13.00 - 14.00	Arrival and registration	
14.00.- 14.10	Household food security, Implications for policy and action for food secure households with malnourished underfive children. <i>E. Echoka</i>	
14.10-14.20	The effect of cooked Matooke/Soyabean/Sesame composite flour in rehabilitation of severely malnourished children aged 6-59 months in Uganda <i>M. Kanyago et al.</i>	
14.20-14.30	Prevalence and risk factors for undernutrition among children living in internally displaced Persons' camps in Gulu District, Northern Uganda <i>Abwola Ohwedo et al</i>	
14.30-14.40	DISCUSSION	
14.40-14.50	Lactose intolerance among severely malnourished children with diarrhea admitted to the nutrition unit, Mulago hospital. <i>R. Nyeko et al.</i>	
14.50-15.00	Assessment of vitamin A deficiency in the Ugandan Demographic and Health Survey, 2006. <i>R. Baingana et al.</i>	
15.00-15.10	Current nutritional problems in a Kenyan society. <i>M. Wanja Ngugi et al</i>	
15.10-15.20	DISCUSSION	
15.20-15.40	TEA BREAK	
15.40-16.00	EXHIBITIONS AND POSTERS	
16.00-18.00	OFFICIAL OPENING CEREMONY	

PARALLEL SESSION B

	PUBLIC HEALTH	Chairperson:
14.00.- 14.10	Determination of the prevalence and factors associated with alcohol consumption among female undergraduates resident at Makerere University Main Campus. <i>G. Dusabe et al</i>	
14.10-14.20	A survey on the levels of lead in water for domestic consumption in Kawempe Division, Kampala.. <i>I. M. Lukwago et al</i>	
14.20-14.30	Prevalence of Hepatitis B and validity of Hepatitis B testing in patients attending the medical emergency ward of Mulago hospital, Kampala, Uganda. <i>E. Seremba et al</i>	
14.30-14.40	Prevalence and factors associated with rotavirus infection among children admitted with acute diarrhea in Mulago hospital. <i>J. N. Nakaweesi et al.</i>	
14.40-14.50	Sero-prevalence and factors associated with brucellosis among abattoir workers in Kampala and Mbarara districts. <i>I Nabukenya et al</i>	
14.50-15.10	DISCUSSION	
15.10-15.40	TEA BREAK	
15.40-16.00	EXHIBITIONS AND POSTERS	
16.00-18.00	OFFICIAL OPENING CEREMONY	

OPENING CEREMONY: PLENARY SESSION

16.00-16.45	<i>KEY NOTE ADDRESS</i> <i>Chairperson:</i>
16.45 -16.55	Welcome (Chair, Scientific Committee) Prof. James Tumwine
16.55-17.05	Remarks by the Conference Chair, Dr. Moses Joloba
17.05-17.15	Remarks by the Dean, School of Public Health, Makerere University, Prof David Serwadda
17.15-17.25	Remarks by the Dean, Faculty of Medicine, Makerere University, Prof. Nelson Sewankambo
17.25-17.35	Remarks by the Director, School of Graduate Studies, Makerere University
17.35-17.45	Remarks by the Vice-Chancellor, Makerere University, Prof. Livingstone Luboobi
17.45-18.30	Remarks by Guest of Honor and Official Opening of Conference
18.30	COCKTAIL

PARALLEL SESSION PROGRAMME FOR THE 30TH AUGUST 2007

SESSION A.

8.00-9.00	KEYNOTE ADDRESS Chairperson:
	INFECTIOUS DISEASE I: TUBERCULOSIS/HIV CO-INFECTION Chairperson:
9.00 - 9.10	Assessment of the capacity to diagnose and treat TB in Tororo district, Uganda. <i>E. Buregyeya et al</i>
9.10 - 9.20	DNA fingerprinting of <i>Mycobacterium tuberculosis</i> isolates from inmates at Luzira prison, Uganda. <i>K. E. Tsubira et al</i>
9.20 - 9.30	Comparison of methods for rapid detection of Multi-drug resistant tuberculosis in Kampala, Uganda. <i>F. Bwanga et al</i>
9.30 - 9.40	Active case finding of smear positive tuberculosis among chronic coughers in a slum setting in Kampala. <i>J. N. Sekandi et al</i>
9.40 – 9.50	DISCUSSION
9.50-10.00	Cytology of HIV-associated cervical adenitis: a retrospective analysis of 150 cases. <i>T. L. Shiramba et al</i>
10.00-10.10	The antimycobacterial activity of some medicinal plants used traditionally to treat tuberculosis in South Western Uganda. <i>C. Kirimubuzya</i>
10.10-10.20	Directly Observed treatment Short Course (DOTS) program in managing pulmonary tuberculosis and treatment outcome at a peripheral health unit and a referral hospital in Eldoret, Kenya.. <i>G. Manguro et al</i>
10.20-10.30	External quality assurance of <i>M. tuberculosis</i> drug susceptibility testing. Results from the 2006 round of the Stockholm Supranational Reference Laboratory sub-network. <i>M. Haile et al</i>
10.30-10.40	DISCUSSION
10.40 - 11.00	TEA / COFFEE BREAK / VISIT TO EXHIBITIONS/POSTERS
	INFECTIOUS DISEASE II: HIV INFECTION AND THERAPY Chairperson:
11.00-11.10	Knowledge, attitude and practices of adolescent towards dual protection for HIV/STIs and pregnancy at Nagguru Health Centre. <i>M. Katusiime et al</i>
11.10-11.20	Occurrence, management and clinical outcome of HIV-related cancers among patients on antiretroviral therapy in the DART trial at Entebbe. <i>B. Kikaire</i>
11.20 - 11.30	Amphotericin B-associated nephrotoxicity among HIV-infected patients treated for cryptococcal meningitis at Mulago hospital. <i>F. Kiveema et al</i>
11.30 - 11.40	Comparison of perceived early-onset and late-onset adverse effects to antiretroviral therapy in adults and children in Kampala. <i>P. Achii et al</i>
11.40 - 11.50	DISCUSSION
	MOLECULAR BIOLOGY OF INFECTIOUS DISEASE Chairperson: Dr Kaddu-Mulindwa
11.50-12.00	A community based study of strain diversity and drug susceptibility of TB in peri-urban Kampala. <i>B.B Asimwe et al</i>
12.00-12.10	Mutational analyses of co-trimoxazole resistance in <i>Streptococcus pneumoniae</i> and comensal <i>Streptococcal</i> species in Kampala, Uganda. <i>M. Pillen et al</i>

12.10-12.20	<i>Mycobacterium tuberculosis</i> Uganda genotype is the predominant cause of tuberculosis in Kampala. <i>B. B. Asimwe et al.</i>
12.20-12.30	Human Papilloma virus serotypes in cervical infections in Ugandan women <i>C. Banura et al</i>
12.30 - 12.40	Trends of Influenza virus isolates in Nairobi, Kenya, between 2005-2006 <i>S. M. S. Lijumo et al</i>
12.40 - 12.50	Prevalence of Methicillin resistant <i>Staphylococcus aureus</i> (MRSA) among isolates from surgical infections in Mulago hospital, Kampala, Uganda. <i>J. Ojulong et al</i>
12.50 – 13.10	DISCUSSION
13.10 - 14.00	LUNCH BREAK AND EXHIBITIONS/POSTERS
14.00-14.30	POSTER SESSION AND VISITING EXHIBITIONS
	INFECTIOUS DISEASE III: BACTERIAL PNEUMONIA Chairperson:
14.30-14.40	Ceftriaxone versus chloramphenicol for treatment of severe pneumonia in children at Mulago hospital: a randomized clinical trial. <i>K. C. Mboijana et al</i>
14.40-14.50	Clinical profile and antimicrobial susceptibility of pneumococcal bacteremia among febrile patients admitted to the emergency medical ward at Mulago hospital, Kampala. <i>G.A.K. Namayanja et al</i>
14.50-15.00	The efficacy of zinc as adjunct therapy in the treatment of severe pneumonia in children admitted to Mulago hospital. <i>M. Srinivasan et al</i>
15.00-15.10	DISCUSSION
15.10-15.30	BREAK TEA
15.30-18.00	IAMI SESSION: UPDATE ON HIV VACCINES

PARALLEL SESSION PROGRAMME FOR THE 30ST AUGUST 2007

SESSION B

8.00-9.00	KEY NOTE ADDRESS Chairperson:
TIME	ANEMIA AND LYMPHOMAS Chairperson: Dr Jackson Orem
9.00-9.10	Prevalence of anemia and its influence on treatment outcome in congestive heart failure patients attending Mulago hospital. <i>J. K. Kuule et al</i>
9.10 - 9.20	Childhood Burkitt's Lymphoma: 20 Years' experience from Uganda Cancer Institute. <i>J. Orem et al</i>
9.20 - 9.30	Burkitt's Lymphoma in Uganda: the role of immunohistochemistry. <i>L. K. Tumwiine et al</i>
9.30 - 9.40	DISCUSSION
	HIV INFECTION AND THERAPY I Chairperson:
9.40-9.50	Second line lopinavir-containing therapy is effective without major side effects alter mailing first line NNRTI containing regimens: 12 months follow up study at the Infectious Disease Institute, Mulago hospital. <i>B. Castelnovo et al</i>
9.50-10.00	Early effectiveness of NVP-based regimen in HIV-infected Ugandan children. <i>L. Barlow-Mosha et al</i>
10.00-10.10	Adherence at a regular ART clinic is associated with improved patient survival. <i>A. Abaasa et al</i>
10.10-10.20	Uptake of VCT in PMTCT-Plus Program : A case of Tororo in Uganda. <i>E. Buregyeya et al</i>
10.20-10.30	The impact of HIV infection on economic activity and economic status. <i>P. Nasirumbi et al</i>
10.30 - 10.40	DISCUSSION
10.40 - 11.00	TEA / COFFEE BREAK / VISIT TO EXHIBITIONS/POSTERS
	PUBLIC HEALTH II Chairperson:
11.00-11.10	Determination of the prevalence and factors associated with alcohol consumption among female undergraduates resident at Makerere University Main Campus. <i>G. Dusabe et al</i>
11.10 - 11.20	A survey on the levels of lead in water for domestic consumption in Kawempe Division, Kampala.. <i>I. M. Lukwago et al</i>
11.20-11.30	Prevalence of Hepatitis B and validity of Hepatitis B testing in patients attending the medical emergency ward of Mulago hospital, Kampala, Uganda. <i>E. Seremba et al</i>
11.30 – 11.4.0	Prevalence and factors associated with rotavirus infection among children admitted with acute diarrhea in Mulago hospital. <i>J. N. Nakaweesi et al.</i>
11.40-11.50	Sero-prevalence and factors associated with brucellosis among abattoir workers in Kampala and Mbarara districts. <i>I Nabukenya et al</i>
11.50-12.10	DISCUSSION

	QUALITATIVE RESEARCH METHODS IN HEALTH Chairperson:
12.10-12.20	Community follow-up of psychiatric patients in Moi Teaching and Referral Hospital. <i>D. Ndegwa</i>
12.20 - 12.30	Understanding Club foot in Uganda. <i>N. S. Gitta et al</i>
12.30 – 12.40	I think traditional healers treat epilepsy better: Assessing the need of integrating traditional healers in management of epilepsy. <i>R. Zavuga et al</i>
12.40-13.00	DISCUSSION
13.00- 14.00	LUNCH BREAK AND EXHIBITIONS/POSTERS
	PHARMACY II Chairperson:
14.0-14.10	The distribution of lamivudine , an NRTI antiretroviral drug after intravenous administration in the rabbit model using 99m Tc-Lamivudine complex. <i>F. Khaukha et al</i>
14.10-14.20	Development and validation of an RP-HPLC method for assay of the potency of Biphasic isophane insulin. <i>O. S. Okello et al</i>
14.20-14.30	Skin prick test reactivity to common allergens among women in Entebbe, Uganda. <i>H. Mpairwe et al.</i>
14.30-14.40	Antibacterial activity of a crude ethanolic extract of the leaves of <i>Tetradenia riparia</i> (Hoschist codd). <i>R. Kagalama et al.</i>
14.40-14.50	Assessing the level of adherence to HAART and its associated factors among HIV positive adults: a case study of two Ugandan treatment centres. <i>A. Natif et al.</i>
14.50-15.00	Evaluation of crude powder and ethanol extracts of <i>Albisia coraria</i> and <i>Psorospernum febringum</i> in the treatment of skin conditions. <i>S. Lanyero et al</i>
15.00-15.20	DISCUSSION
15.20-15.40	BREAK TEA
15.40-18.00	IAMI SESSION: UPDATE ON HIV VACCINES

PARALLEL SESSIONS PROGRAM FOR 31ST AUGUST 2007
SESSION A

8.00 – 9.00	KEY NOTE ADDRESS Chairperson: Prof Moses Kamya
	INFECTIOUS DISEASE : CLINICAL MALARIA
9.00 - 9.10	Factors affecting adherence to chloroquine prophylaxis for malaria among sickle cell anaemia children attending Mulago Hospital Sickle Cell Clinic <i>C. Nalunkuuma et al</i>
9.10-9.20	Association between moderate anaemia in pregnancy and helminthes, malaria and HIV infection in Entebbe, Uganda. <i>L. Muhangi et al</i>
9.20 - 9.30	Factors affecting adherence to intermittent presumptive treatment for malaria prevention in pregnancy in Kampala City Council Health centres <i>A. Hasabya et al</i>
9.30 - 9.40	Association between HIV infection and cerebral malaria in children below 12 years attending Mulago hospital, Uganda. <i>P. D. Imani et al</i>
9.40 - 9.50	DISCUSSION
	INFECTIOUS DISEASE : MALARIA PREVENTION Chairperson: Prof Fred Kironde
9.50 - 10.00	Effects of Fansidar treatment on pregnancy malaria and anti <i>Plasmodium Falciparum</i> Immunity. <i>F. Namusoke et al.</i>
10.00 - 10.10	Utilising simple community based surveys to guide program implementation: A case study of bed net distribution in four districts of Uganda . <i>S. Kironde et al.</i>
10.10-10.20	The use of indoor residual spraying using ICON and long lasting insecticide treated nets in controlling malaria epidemics in Kanungu district, Uganda. <i>S. Sebudde</i>
10.20 - 10.30	Emerging alternatives to mosquito bio-control using recombinant bacteria from <i>Bacillus thuringiensis israelensis</i> . <i>Z. N. Otieno-Anyao et al.</i>
10.30 - 10.40	DISCUSSION
10.40-11.00	TEA / COFFEE BREAK / VISIT TO EXHIBITIONS/POSTERS.
	INFECTIOUS DISEASE III: MALARIA SEQUELAE AND RESISTANCE Chairperson:
11.00-11.10	A bioinformatics approach to identification of plasmodial proteins interacting with Toll-interleukin 1 receptor resistance TIR homology domains. <i>B. Kanoi</i>
11.10-11.20	Long term cognitive impairment in children with cerebral malaria. <i>M. Boivin et al</i>
11.20 - 11.30	Seizure activity and neurologic deficit in Ugandan Children who have survived an episode of cerebral malaria. <i>R. O. Opoka et al</i>
11.30 - 11.40	Evaluation of biochemical markers of malaria in a population previously exposed to DDT through indoor residual spraying in Kihiihi sub-county, Kanungu district. <i>G. S. Bimenya et al</i>
11.40-11.50	Prescribing habits and associated factors in the event of the 2005 antimalarial policy. <i>S. P. Ucakacon</i>
11.50-12.00	DISCUSSION

	HEALTH PROFESSIONAL EDUCATION Chairperson : Dr Steven Kijambu
12.00 – 12.10	Knowledge, attitudes and practices of qualified nurses of Mulago hospital complex regarding continuing nursing education. <i>B. Oyang et al</i>
12.10-12.20	The clerkship years of the Problem Based Learning (PBL) Curriculum at the Faculty of Medicine, Makerere University, Kampala, Uganda. <i>H. Nankabirwa et al</i>
12.20 - 12.30	Ethical justice to respondents: Publication rates of Master of Medicine Research Projects at Makerere University, Uganda. <i>J. Muron et al</i>
12.30-12.40	The effectiveness of the Problem Based Learning (PBL) Curriculum to the first year medical students at the Makerere University, Faculty of Medicine <i>R. Namisango et al</i>
12.40 -12.50	The opinions of second year Problem based Learning students at Makerere University on Community-based Education Services (COBES). <i>C. Nakanwagi et al</i>
12.50 - 13.00	Infectious Disease laboratory training program. A model for developing a training curriculum. <i>A. Ogwal et al</i>
13.00-13.10	DISCUSSION
13.10 - 14.00	LUNCH BREAK / VISIT TO EXHIBITIONS / POSTERS.
	PEDIATRICS AND CHILD HEALTH Chairperson:
14.00 - 14.10	Community-based growth promotion as an entry point to integrated child health. <i>R. Muyeti et al</i>
14.10 - 14.20	Environmental predictors of cognition in Ugandan children: Implication for community-based interventions. <i>P. Bangirana et al.</i>
14.20 - 14.30	Prevalence and factors associated with moderate to severe anemia among HIV-infected children admitted at Mulago Hospital, Uganda. <i>M. Munyagwa et al</i>
14.30 - 14.40	The expectations and experiences of Pediatric patients admitted at Mulago hospital regarding the Communication skills of attending doctors. <i>S. Kiguli</i>
14.40-14.50	Prevalence and pattern of psychological disorders in first degree relatives of children with cerebral palsy in Nigeria . <i>E. Ijeze</i>
14.50-15.10	DISCUSSION
15.10 - 15.40	TEA BREAK / VISIT TO EXHIBITIONS / POSTERS
	HEALTH SERVICES RESEARCH Chairperson:
15.40-15.50	Process evaluation of lasting insecticidal nets by community medicine distributors . <i>B. Mpeka et al.</i>
15.50-16.00	Knowledge, attitudes and practices of midwives towards active management of third stage of labor to prevent postpartum hemorrhage: a case study in Mulago hospital. <i>A. N. Mayanja et al</i>
16.00-16.10	Assessing the impact of oral and dental health interventions through community-based education and service. <i>R. Zavuga</i>
16.10-16.20	Observational study of the effects of the ratio of attending health care providers to women in labor in New Mulago hospital <i>D. D. Asimwe</i>
16.20-16.40	DISCUSSION
16.40-18.00	CLOSING CEREMONY

**PARALLEL SESSION PROGRAM FOR THE 31ST AUGUST 2007
SESSION B**

T I M E	Chairman : Prof E. Katabira
8.00 – 9.00	KEY NOTE ADDRESS Chairperson:
	PHARMACY II Chairman : Prof R. Odoi Adome
9.00-9.10	Assessment of the pattern of self medication in community pharmacies in Kampala <i>G. Osinde et al</i>
9.10-9.20	Barriers to effective communication during dispenser-patient interaction in Mulago outpatient pharmacies. <i>H. Natukunda et al</i>
9.20 - 9.30	Assessment of the pull system for improved supply of drugs and medical supplies in Kilembe hospital. <i>Y. Tumwine et al</i>
9.3 0 - 9.40	A qualitative and quantitative evaluation of prescribing errors in Outpatient clinics at the assessment centre, Mulago hospital. <i>N. Lubowa et al</i>
9.40-9.50	DISCUSSION
9.50 – 10.00	In vitro antibacterial activity of an ethereal extract of <i>Ricinus communis</i> seeds <i>B. Mwesigye et al</i>
10.00-10.10	What is the basis for use of <i>Ficus natulensis</i> in the treatment of diarrhoeal diseases? <i>C. Mark et al.</i>
10.10-10.20	Susceptibility of pathogenic enterobacteria to the methanolic extract of <i>Combretum molle</i> R.. Br. ExG. Don root. <i>F.K.K. Kimuli et al</i>
10.20-10.30	Comparative wound healing activity of solvent extracts of <i>Hypericum perforatum</i> in rabbits. <i>G. Mwebaze et al</i>
10.30 - 10.40	DISCUSSION
10.40 – 11.00	TEA / COFFEE BREAK
	HEALTH SERVICES RESEARCH : Chairman Dr Bazeyo
11.00-11.10	Inequities in assess to health services in an urban setting in Uganda. <i>C. Nabwadda et al.</i>
11.10-11.20	Urban health inequalities. <i>NM Tumwesigye et al.</i>
11.20-11.30	Motivating the health workforce in the context of decentralized health system. <i>F. Sengooba et al</i>
11.30-11.40	Private sector contribution towards health serenity center experience in response to alcoholism. <i>D. Kalema</i>
11.40 - 11.50	DISCUSSION
11.50 - 12.00	Changes in the utilization of health services among the most poor and those in rural areas. <i>EK Ekirapa et al</i>
12.00 – 12.10	Accessibility and utilization of health services for the poor and vulnerable in Uganda: A systematic review of the available evidence. <i>S.N. Kivanuka et al</i>
12.10-12.20	Equity in access o care: socially vulnerable groups in Northern Uganda <i>D. D. Asimwe et al</i>
12.20 - 12.30	DISCUSSION

12.30-12.40	The role of the media in developing health communication public campaigns for effective national health policy implication for poverty reduction in Uganda. <i>W.T. Okaka</i>
12.40 -12.50	Coping strategies for ill health among vulnerable households in an urban setting in Uganda. <i>C. Nalwadda et al</i>
12.50 - 13.00	Community perceptions of quality and its influence on the utilization of services delivered. <i>J. Kiguli et al</i>
13.00 - 13.10	DISCUSSION
13.10 - 14.00	LUNCH BREAK AND VISIT EXHIBITIONS / POSTERS
	REPRODUCTIVE HEALTH RESEARCH II
	Chairperson:
14.00 - 14.10	Knowledge and attitudes of female Makerere university students towards induced abortion for unwanted pregnancy. <i>G. Nalwadda</i>
14.10 - 14.20	A randomized clinical trial of two emergency contraceptive pill regimens in a Ugandan population. <i>J.K. Byamugisha</i>
14.20 - 14.30	Risk factors for perinatal mortality in Arua regional referral hospital, West Nile. <i>B. Akello et al.</i>
14.30 - 14.40	The effect of helminthic infections and their treatment during pregnancy on birth weight in Uganda. Results of a randomized double blind placebo controlled trial. <i>J. Ndibazza et al</i>
14.40-14.50	Knowledge, attitudes and practice of HIV post-exposure prophylaxis among healthcare workers in Kampala, Uganda. <i>J. Okoth Olweny</i>
14.50 - 15.00	DISCUSSION
15.00 - 15.30	TEA / COFFEE BREAK VISIT TO EXHIBITIONS / POSTERS.
	BACTERIAL INFECTIONS:
	Chairperson:
15.30 – 15.40	Validity of <i>Helicobacter pylori</i> stool antigen test in dyspeptic patients presenting at the Kenyatta National Hospital, Nairobi. <i>L. Guantai et al.</i>
15.40-15-50	Management of food poisoning caused by enterotoxigenic <i>E.Coli</i> producing heat stable toxins in the community in low resource countries. <i>M. Wanjiku</i>
15.50-16.00	An outbreak of pneumonic plague in Masindi district-The investigation and response, February 2007. <i>L. Lukwago et al</i>
16.00-16.10	Factors influencing the utilization of VCT among Makerere University students. <i>J. Barasa</i>
16.10-16-20	Association between mild-moderate anemia in pregnancy and helminthes, malaria and HIV infection in Entebbe, Uganda. <i>L. Mubangi et al</i>
16.20-16.40	DISCUSSION
16.40-18.00	CLOSING CEREMONY

Abstracts

ASC07:1 Seizures activity and neurological deficits in Ugandan children who have survived an episode of cerebral malaria

RO Opoka¹, J Byarugaba¹, P Bangirana¹, C.C John²

1. *Department of Paediatrics and Child Health, Mulago Hospital/Makerere University Medical School, Kampala, Uganda.*
2. *Program for Global Pediatrics and Division of Pediatric Infectious Diseases, University of Minnesota, Minneapolis, Minnesota, USA.*

Objectives: Seizures are a common presenting feature in children with cerebral malaria (CM) and multiple seizures in CM have been associated with subsequent development of epilepsy. Few studies have however examined the frequency of seizure activity in children who have survived CM.

Methods: A cohort of 86 children with CM aged three to 12 years was recruited and prospectively followed up over a period of 24 months together with 75 children with uncomplicated malaria (UM) and 105 healthy community controls (CC) of similar age as comparison groups. Seizure activity and neurological deficits was compared in the three groups over the study period.

Results: More children in the CM group reported a history of seizures over the 24 months follow up period, 13.2% (9/68), compared to the children in the UM, 6.1% (4/66) and, CC 4.3% (4/92) groups. There was significant increase in the number of children reporting seizure activity in the CM group over time from 2 children at 3 months, 3 at 6 months to 9 at 24 months ($p = 0.04$). At discharge 25.0 % (19/76) of children were identified to have neurological deficits, but most had resolved by 6 months and at 24 months only 1.5% (1/68) had persistent neurological deficits.

Conclusions: This study suggests that CM survivors are prone to recurrent seizures which may lead to subsequent development of epilepsy. Further studies are required to examine the evolution of epilepsy in children who have survived CM.

ASC07:2 Second line lopinavir/ritonavir (LPV/r) containing therapy is effective without major side effects after failing first line NNRTI containing regimens: 12 months follow up study at the Infectious Diseases Institute, Mulago Hospital.

Barbara Castelnovo¹, Fred Lutwama¹, Andrew Kambugu¹ Moses Kanya²

1. *Infectious Diseases Institute, Kampala, Uganda, Barbara Castelnovo. bcastelnovo@idi.co.ug*
2. *Makerere University, Kampala, Uganda*

Objective: To evaluate the safety and virological response to lopinavir/ritonavir containing second line therapy in patients that experienced virological failure with a non nucleoside

reverse transcriptase inhibitor (NNRTI) based regimen in Uganda.

Design: Prospective observational cohort of patients switched to zidovudine/stavudine plus didanosine plus lopinavir/ritonavir (LPV/r) capsules as second line regimen.

Methodology: Structured interview, medical examination and laboratory assessment (CD4+ T cell count, HIV-1 RNA level, liver and renal function tests) were performed every 6 months.

Results: We enrolled 40 patients; 1 died 2 weeks after enrollment and 2 were lost at follow up. Median CD4+ count at baseline was 108 cell/ μ L (range: 7-518 cell/ μ L) and median viral load was 57,718 copies/ml (range 409-750,000). 16 patients had genotypic assay at baseline. Of these 14 had developed resistance to lamivudine and 4 had other NRTI associated mutations; all 16 had developed resistance to NNRTIs. At month 6 and 12, 70% and 75% (intention to treat analysis) of patients respectively achieved viral suppression (<400 copies/ml). The median increase in CD4+ count was 114 cell/ μ L by month 12. In those that survived and remained under follow up, we did not observe any opportunistic infection or disease progression. A total of 17% patients experienced nausea and 17% diarrhea; 92% patients self-reported adherence \geq 95%. Two patients interrupted antiretroviral treatment due to didanosine intolerance.

Conclusions: Second line regimen including lopinavir/ritonavir recommended in Uganda is effective after failing a NNRTI based first line regimen and it is usually well tolerated.

ASC07:3 Early Effectiveness of NVP-based regimen in HIV infected Ugandan children

L. Barlow-Mosha¹, P Ajuna¹, M. Mubiru¹, M. Luttajumwa¹, D Bagenda, B. Musoke¹, M. Owor¹, P. Musoke^{1,2}.

¹Makerere University- Johns Hopkins University Research Collaboration (MU-JHU), ²Department of Paediatrics, Makerere University Mulago, Kampala, Uganda: International Leadership Award (EGPAF)

Background: NVP based regimens are recommended for first-line therapy by WHO for HIV-infected children in resource-limited settings.

Objective: To assess the response to treatment with a NVP-based regimen in 2 cohorts of HIV infected Ugandan children, who have been exposed and non-exposed to sdNVP at birth.

Methodology: HIV infected children were initiated on d4T/3TC/NVP. A t-test was performed to compare immunologic and virologic response at baseline versus 12, 24, 36 and 48 weeks post-therapy.

Results: Nine-two children were enrolled and started on HAART. Median age at enrollment was 1.7 yrs (0.6-6.3) in the NVP exposed cohort and 7.8 yrs (2.9-12.4) in NVP non-exposed cohort. The median CD4 percent for the NVP-exposed cohort was 14.0% at baseline and increase to 23.5%, 27.5%, 39.5%, and 33.0% at 12, 24, 36, and 48 weeks respectively. The median CD4 percent for the Non-exposed cohort was 8.5% at baseline and 14.4%, 17.5%, 18.9%, and 22.5% at 12, 24, 36, and 48 weeks respectively. A significant difference in immunologic response was found at 48 weeks ($p < 0.0001$). Median viral load at baseline was 650,568 copies/ml in the NVP exposed cohort and 239,027 copies/ml in the Non-exposed

cohort. Both cohorts had a median viral load that was non-detectable (<400copies/ml) at 12, 24, 36, and 48 weeks. Eighty percent in the non-exposed cohort and 76% in the exposed cohort had undetectable viral loads (<400copies/ml) at 48wks.

Conclusion: A NVP-based regimen in the NVP exposed and non-exposed cohorts led to a significant increase in CD4 percent and decrease in viral load after 48 weeks of therapy.

ASC07:4 Long-term cognitive impairment in children with cerebral malaria

Michael Boivin^{1,2}, **Paul Bangirana**³, **Justus Byarugaba**⁴, **Robert Opika-Opoka**⁴,
Richard Idro⁴, **Anne M. Jurek**⁵, **Baolin Wu**⁵, **Chandy John**⁵

1. *International Neurologic and Psychiatric Epidemiology Program (INPEP), Michigan State University, East Lansing, MI, michael.boivin@ht.msu.edu*
2. *Neuropsychology Section, Department of Psychiatry, University of Michigan, Ann Arbor, MI*
3. *Department of Mental Health & Community Psychology, Makerere University Institute of Psychology, Kampala, Uganda*
4. *Department of Paediatrics and Child Health, Makerere University Medical School, & Mulago Hospital, Kampala, Uganda*
5. *Global Pediatrics Program, Department of Pediatrics, University of Minnesota Medical School, Minneapolis, MN.*

Introduction: Although cerebral malaria (CM) is a major cause of mortality in sub-Saharan Africa, no prospective studies have assessed long-term cognitive impairment. It is also unclear whether uncomplicated malaria (UM) is associated with long-term cognitive deficits. Objective: To determine whether cognitive impairment is more frequent in children with CM or UM than healthy community children (CC) 2 years after the initial malaria episode.

Methods: One hundred and eighty-seven children from Kampala, Uganda, were enrolled in a prospective cohort study. Children 5-12 years of age presenting to Mulago Hospital with CM (n=44) or UM (n=54), and healthy, asymptomatic community children (n=89) from CM and UM households were enrolled. Detailed clinical information was obtained at enrollment, and cognitive testing was performed 2 years later on 165 of these children (CM, n=38, UM, n=48, CC, n=79). Primary outcome was presence of a deficit in one or more of three cognitive areas tested. A deficit was defined as a z-score of <-2 for the areas of working memory and attention and a z-score of >2 for the area of learning.

Results: At 2 year follow-up testing, 26.3% of children with CM and 12.5% with UM had cognitive deficits in one or more areas, as compared to 7.6% of community children (P =0.006 and 0.37 for children with CM and UM, respectively). Cognitive deficits occurred primarily in the area of attention, which may mediate working memory effects for CM children, especially in the visual-spatial domain. After adjustment for age, gender, nutrition, home environment and school level, children with CM had a 3.67-fold increased risk of a cognitive deficit as compared to CC (95% CI, 1.11, 12.06, P=0.03). The only clinical features correlated with risk of cognitive deficit were hyporeflexia (P=0.03) and the presence of neurologic sequelae at 3 months (P=0.05).

Conclusion: Cerebral malaria is associated with a high frequency of cognitive impairment 2 years after the initial episode, confirming that this is an important morbidity domain when clinically evaluating treatment options during the acute phase.

ASC07:5 Community-based growth promotion as an entry point to integrated child health

Rianne Muyeti¹, Joy Del Rosso² M. Kyenkya¹, X. Nsabagasani¹, C. Orone³

1. *Uganda Program for Human and Holistic Development (UPHOLD)* P.O. Box 40070, Kampala, Uganda, Tel: 0312 262 164, Fax: 0414 222 860, E-mail: Rmuyeti@upholduganda.org
2. *The Manoff Group*
3. *Ministry of Health, Uganda*

Introduction: Malnutrition is an underlying factor for up to 60% of childhood deaths (WHO, 2000) and 80% of these deaths are attributed to mild and moderate malnutrition (Promoting the Growth of Children: What Works, The World Bank, 1996). Two-thirds of child deaths could be prevented by a set of preventive and curative interventions that are available yet often do not reach the children that need them (The Lancet Child Survival Series, 2003). UPHOLD, a USAID-funded program managed by JSI Inc. works in 34 districts of Uganda supporting community-based growth promotion (CBGP) in six districts to promote low-cost high-impact preventive interventions at household level.

Objectives: A program review using quantitative and qualitative methods was conducted to assess best practices, lessons learned and potential impact of CBGP.

Methods: Growth promotion registers from 20 randomly sampled villages in four districts were reviewed covering records of 1,249 children aged 0-23 months, 180 counseling sessions observed and exit interviews held after each counselling session.

Results: High child attendance (80%+) was associated with improved growth trends. Malnutrition levels (weight-for-age below 2 SD) had reduced from 11.5% (N=736) to 7.3% (N=675) during eight months of program implementation. Three quarters of the mothers received messages relevant to the age and well being of the child, promoting the recommended low-cost high-impact interventions. In 70% of the observations, growth promoters correctly assessed the children's immunization status and referred appropriately. Well-performing implementation areas attributed success to well-established support supervision mechanisms.

Conclusions: CBGP can play a significant role in promoting child growth and health by promoting relevant 'best practices' within the local context of the community or household.

ASC07:6 Assessment of vitamin A deficiency in the Uganda demographic and health survey, 2006

R Baingana¹, D Kasozi¹, D Garrett^{2,3}

1. *Department of Biochemistry, Makerere University. Email: rbaingana@sci.mak.ac.ug*
2. *ORC Macro, Demographic and Health Surveys, 11785 Beltsville Drive, Calverton, USA;*
3. *PATH, 1455 NW Leary Way, Seattle, USA.*

Background: Vitamin A deficiency (VAD) is a significant cause of morbidity and mortality especially in women and children. However, lack of reliable tools to evaluate Vitamin A status in low-resource settings is a major challenge for the development of appropriate

intervention programs.

Aims: We report on the pioneer application of a retinol-binding protein enzyme immunoassay (RBP-EIA) on dry-blood spots (DBS) for the assessment of VAD in a population-based survey.

Methods: Capillary blood was collected onto filter paper cards (Whatman 903) from 5642 women (15–49 years) and children (6–59 months) enrolled in the Uganda Demographic and Health Survey 2006. The filter paper cards packed in plastic bags with desiccant were delivered on a cold chain to the laboratory within 7–10 days of collection. Survey DBS and volunteer matched serum samples and DBS were analysed using ScanLisa RBP-EIA (Scimedx Corp, Denville, NJ, USA) with minor changes to the manufacturer's protocol.

Results: RBP concentrations from DBS were comparable to those of serum ($r^2 = 0.63$) thus DBS was a suitable alternative sample type.

Conclusion: We recommend use of RBP-EIA on DBS for the assessment of VAD in large epidemiological surveys in low-resource settings.

ASC07:7 Comparison of methods for rapid detection of multi-drug resistant tuberculosis in Kampala, Uganda

F. Bwanga¹, S. Hoffner², M. Haile², B. B Asimwe¹, D. Kateete¹, M. L Joloba¹

1. Makerere University Kampala, Uganda, fbwanga@med.mak.ac.ug

2. Swedish Institute for Infectious Diseases, Stockholm Sweden.

Introduction: Uganda lacks a rapid method for detection of Multi drug resistant tuberculosis (MDR TB). Patients with tuberculosis are managed with one routine drug regimen. In case of MDR TB strains, patients may not respond to treatment. Those with susceptible strains are unnecessarily exposed to an expensive lengthy regimen while they could respond to a simpler one. A rapid method for detection of MDR TB in Uganda's settings is urgently needed.

Objectives: This study was undertaken to evaluate the sensitivity, specificity, and turn around time (TAT) of seven new rapid tests for detection of MDR TB in Uganda.

Methods: The study was conducted at the National TB reference Laboratory Kampala. Twenty one M. tuberculosis isolates were tested for susceptibility two isoniazid and rifampicin using seven new tests: nitrate reductase assay (NRA), microscopic observation drug susceptibility MODS, E test, Alamar blue, agar proportion method, mycobacteria growth indicator tube (MGIT), and the Genotype® MTB DR (Hain life science). Results were compared to those obtained by the Lowenstein-Jensen (LJ) proportional method as gold standard.

Results: Five of the 21 isolates were MDR strains. The sensitivity of the NRA assay, MODS, E test, Alamar blue, agar proportion, MGIT, and Genotype MTB DR for detection of MDR TB was 80%, 60%, 60%, 60%, 100%, 50% while the specificity was 100%, 94%, 100%, 94%, 94%, 92% and..., respectively. The agreement between each of the rapid tests and the gold standard ranged between 81% and 95%. The (TAT) for all the new rapid tests ranged between 7 and 14 days. NRA had the shortest TAT of 7 days for 16 (71%) of the 21 isolates and 10 days for all the isolates.

Conclusion: The agar proportion method and the NRA performed best in terms of sensitivity, specificity, agreement with the gold standard and in turn around time. All the

tests demonstrated far shorter TAT than the gold standard (30 days). This study has demonstrated that the new rapid tests can be performed in Uganda's settings.

ASC07:8 Occurrence, management and clinical outcomes of HIV related and other cancers among patients on Antiretroviral Therapy in the DART Trial at Entebbe.

Bernard Kikaire

MRC / UVRI Uganda Research Unit on AIDS, P O Box 49 , Entebbe, Uganda, Email: Ben.Kikaire@mrcuganda.org

Background: Cancers are a recognized complication of advanced HIV infection and the clinical management of cancers in our settings is challenging. We describe the occurrence and clinical outcomes of HIV related and other cancers among adult participants of the DART Trial at the MRC Entebbe study clinic.

Methods: HIV positive adults who fulfilled criteria for commencing antiretroviral therapy were eligible for enrollment into the DART Trial.

Patients are followed up at monthly intervals. Clinical and histological diagnoses of cancer recorded, and management and outcomes documented in clinical record forms.

Results: 27 patients were diagnosed with cancer, 8 of these before study enrollment. Of the 19 diagnosed in clinic; 9 were women and 10 were men. Their average age was 37 (range 24-56) years median CD4 count at enrollment 54 (range 1-187) cells / mm³ . Cancers diagnosed were: 9 Kaposi sarcoma; 4 non-Hodgkin's lymphoma; 3 cervical cancer; 2 oesophageal cancer and 1 hepatocellular carcinoma. Average time from enrolment to diagnosis was 13 months and in 9 patients diagnosis was within the first 6 months. Seven (7) patients with Kaposi Sarcoma and all patients with lymphoma received chemotherapy, all with cervical cancer, radiotherapy; and with oesophageal cancer and hepatocellular carcinoma, palliative care. Eleven (11) of the 19 cases died.

Conclusion: Cancers are frequent in advanced HIV infection and associated with very high mortality. This grave prognosis may be partly due to underlying immune suppression and partly to delayed detection or presentation.

ASC07:9 Impact of HIV-infection on economic activity and economic status

Pamela Nasirumbi, Janet Seeley, Jim Todd, Sam Biraro, Brent Wolff, Jovita Amuron, Rosette Kyomuhangi, Lieve Vanderpaal, Heiner Grosskurth

MRC/UVRI Uganda Research Unit on AIDS, c/o Uganda Virus Research Institute, P.O.Box 49, Entebbe, Uganda. Tel: 256-041-320042 & 320272; 031-262910/11; 075 731733 Mobiles: 077 403040; Fax: (0) 41-321137 Email: mrc@mrcuganda.org, Pamela.nasirumbi@mrcuganda.org

Background: The dearth of longitudinal data on the long-term impact of the AIDS epidemic on people's lives and livelihoods led to the Household Trajectory Study (HTS) in southwestern Uganda.

Objective: To investigate the impact of HIV-infection on household economic activity.

Methods: The HTS was carried out 2006-2007 in the 25 villages in southwestern Uganda from which annual demographic and serological data has been collected from the residents since 1989 (15 villages in 1989/90 and additional 10 in 2000/01). The study comprises of 3 components. In this component, questionnaire and calendar data are collected from a random sample of 144 (72 from the early 15 villages and 72 from the additional 10) equally matched households with and without an HIV infected person. The households were further stratified by wealth to represent the 'poorest', 'less-poor' and 'richer' household categories. The household head was asked to recall information about work events, farming, education, marital and health status relating to the household on a yearly basis across the years 1990 to 2006. All individuals in the household in 2006 were also asked for a calendar of events from the same years. The study focused particularly on children, especially on fostering and care givers

Results: We present the strategies for developing summary measures of household demographic and economic activity. We define methods to monitor the changes in household economic development within the different household strata over the 17 years.

Conclusions: Longitudinal data contributes to knowledge of family sociology, and policy development for families in crisis.

ASC07:10 Uptake of VCT in PMTCT-Plus program: A case of Tororo in Uganda.

Esther Buregyeya¹, John Bosco Ddamulira¹, Virgil Onoma¹, Sheba N Gitta¹, Fred Nuwaha¹

Makerere University Institute of Public Health (MUIPH), Kampala, Uganda. E-mail: eburegyeya@iph.ac.ug

Introduction: Uptake of services for prevention of mother to child transmission of HIV (PMTCT) is low in Uganda and other low income countries. We assessed the effect of ART on uptake of VCT among mothers attending antenatal in Mukujju health centre IV before commencement of ART (2002-2004) and after commencement of ART (2005-06).

Methods: Records review of antenatal data since the PMTCT project was started (2002) up to the first year of PMTCT-Plus (2006) was carried out. Monthly proportions of the mothers attending antenatal who accepted VCT were calculated. Compare the means using a t-test.

Results: During PMTCT, without the ARVS (Anti-Retro Viral Therapy) less than 30% of all the new mothers attending antenatal accepted VCT. With the introduction of provision of ARVS within PMTCT programme (PMTCT-Plus), there was a tremendous increase of mothers accepting VCT with over 80% of the new mothers testing. There was a statistically significant difference in mean acceptance of VCT in PMCT after introduction of ART ; 47.207, 95% CI; 35.5016-58.9130, p=0.000.

Conclusion: Provision of ARVs in antenatal clinics increases utilization of VCT services in ANC.

ASC07:11 Assessment of the capacity to diagnose and treat TB in Tororo district, Uganda

Esther Buregyeya¹, John Bosco Ddamulira¹, Virgil Onoma¹, Fred Nuwaha¹

Makerere University Institute of Public Health (MUIPH), Kampala, Uganda. E-mail: eburegyeya@iph.ac.ug

Introduction: Tuberculosis is one of the most common causes of morbidity and the leading cause of mortality in people living with HIV/AIDS.

Objective: We assessed the capacity of health facilities to diagnose and treat Tuberculosis in Tororo district, Uganda.

Methods: In March 2007, we conducted an assessment of all health facilities in Tororo county, Tororo district. We looked at the availability of laboratory services, assessed TB records and availability of TB drugs.

Results: It was found that, only 18% (3/17) of the health facilities could carry out sputum exam for TB, with no HCIII level able to do sputum exam. The majority of the facilities (80% of the quarters assessed) were lacking records on cure rates for the pulmonary smear positive cases. Patients were started on treatment and they even come back for more drugs but the outcome after is not shown. Lack of trained staff was reported to be the main reason for lack of TB laboratory services. Stock outs of TB drugs were also reported and the main reason was failure to order for enough drugs.

Conclusion: Lack of laboratory facilities lead to poor follow up of TB patients and incomplete records.

Recommendation: Thus there is need to strengthen laboratory human resource capacity at the lower health centres where most patients receive treatment especially in the era of HIV/AIDS and the emergency of drug resistant strains of TB.

ASC07:12 Comparison of perceived early-onset and late-onset adverse effects to antiretroviral therapy in adults and children in Kampala.

P. Achii, F.E. Kitutu, N. Anyama, R.O. Adome, F. P. Kamba

Department of Pharmacy, Makerere University, kitutufred@gmail.com

Introduction: Due to continuing organ development, children are expected to suffer more from adverse effects to antiretroviral therapy than adults. Whether this is the situation in real practice is unclear.

Objective: To compare the prevalence and outcomes of perceived early-onset and late-onset adverse effects to antiretroviral therapy in adults and children.

Methodology: A cross-sectional study of 94 adult and 39 paediatric clients on antiretroviral therapy was done at Mulago-Mbarara Joint AIDS Programme clinic, Mulago and Paediatric Infectious Diseases satellite clinics at Naguru, Mbuya and Kawempe. Data was collected by structured questionnaires and analyzed in SPSS 10.0.

Results: Early-onset nausea (OR: 1.34), mobility difficulty (OR: 6.10), headache (OR: 1.80),

malaise (OR: 1.42), dizziness (OR: 1.73), drowsiness (OR: 1.36), paraesthesia (OR: 3.51) and nightmares (OR: 5.65) were more likely in adults than children; vomiting (OR: 0.66) and anorexia (OR: 0.95) had opposite trend. The prevalence of confusion ($\chi^2=96.72$, $p<0.001$) and nightmares ($\chi^2=6.23$, $p=0.013$) was statistically different. Most late-onset adverse effects were less likely in adults than children except drowsiness (OR:1.19) and nightmares (OR: 3.06). The difference in prevalence of adverse effects widened at late onset with nausea ($\chi^2=14.46$, $p<0.001$), mobility difficulty ($\chi^2=94.19$, $p<0.001$), headache ($\chi^2=4.89$, $p=0.027$), paraesthesia ($\chi^2=58.64$, $p<0.001$), and confusion ($\chi^2=116.81$, $p<0.001$) being statistically significant. Adverse effect related termination of therapy was statistically different ($\chi^2=10.13$, $p=0.013$) and less likely in adults than children (OR:0.26).

Conclusion: Children have significant differences in the prevalence of early- and late-onset adverse effects to antiretroviral therapy from adults, which should be considered in their treatment.

ASC07:13 The distribution of lamivudin - an NRTI ARV after the IV introduction in the rabbit model using ^{99m}Tc -Lamivudin complexes

F. Khaukha, P Kiondo, R.O. Adome

*Department of Pharmacy Faculty of Medicine, Makerere University, rodoi@med.mak.ac.ug
rodoi@med.mak.ac.ug*

Background: Lamivudine is an anti retroviral agent belonging to the NRTI agents. It is also used as an antiviral agent for the treatment of chronic hepatitis B with numerous side effects that include pancreatitis, hepatitis, mitochondrial toxicity, etc.

Objective: The objective of this work was to determine the bio-distribution of lamivudin in vivo using the rabbit.

Methods: Tablets of lamivudine weighing 296.1mg of the drug were crushed and dissolved in sterile water to make 10mls of lamivudine solution. The radiopharmaceutical was made by adding 8.0mCi of ^{99m}Tc -pertechnetate to the solution of lamivudin. The labeling efficiency was determined by paper chromatography. Biodistribution of ^{99m}Tc -lamivudine was determined using SPECT gamma camera.

Results: After I.V administration of the complex into the rabbits, the drug is taken up by the virus in the liver hence its use in the imaging of the liver using SPECT gamma camera. Bio-distribution results showed there was high activity in areas that were associated with high uptake of radioactive compound. Labeling efficiency was low, This may be due to chromatography pitfalls, lack of well studied and published formula for formulation of Lamivudine radiopharmaceutical kit etc.

Conclusion: This preparatory work informs of the distribution of Lamivudin in the body and responsible for its major side effects

ASC07:14 Directly observed treatment short course (DOTS) programme in managing pulmonary tuberculosis: evaluating its success and factors improving treatment outcome at a peripheral health centre and at a referral hospital in Eldoret, Kenya

Manguro Griffin, Ndiwa Dan, Munyazi Loice and Mwaura Martin

Medical Students *Moi University school of Medicine*, E-mail mangurogriffin@yahoo.com, Telephone 254 721 908504

Introduction: Tuberculosis is one of the leading cause of death in the world accounting for between 3.5 to 4 million new cases annually. Most infections occur in sub-Saharan Africa, subsequent to HIV/AIDS. Comprehensive management, including strict adherence, proper drug regimen and use of ARV among seropositive is core in reducing mortality. Success of DOTS program in managing TB and its determinants was analyzed at Mosoriot Health Centre and at Moi Teaching and referral Hospital and compared to WHO targets

Objectives: Find out treatment success rate and factors which improve treatment outcome in PTB treatment

Methodology: Retrospective trend analysis of all patients who began treatment between January and December 2005 and the outcomes of their treatment.

Results: Both facilities offered TB and HIV follow up services. Diagnosis was not based on sputum smears. Recording was poor. Treatment success rate was only 52.55% and defaults were 36.6%. Gender and age did not have effect on outcome of treatment. HIV positive patients showed better adherence to treatment and better outcome. For HIV positive, High CD4 count on initiation of therapy, Use of ARVs and Low dose septrin PCP prophylaxis improved outcome of treatment. Use of standard therapy has greatly improved outcome.

Conclusion and recommendation: DOTS success rate in Kenya is still low compared to WHO targets. Increasing screening for HIV and access to ARV and PCP prophylaxis among HIV positive patients is key to improving outcome of PTB treatment. Emphasize on strict adherence to therapy is also key to improving management.

ASC07:15 Love madness (Furor amoris): a case report of blind love in the face of HIV/AIDS

J. Kabeega Kabengeru

SHO 1, Dept of Psychiatry, Makerere University Medical School, E-mail drkabes@yahoo.com

Introduction: Love, sexuality and reproduction are intricately connected to the HIV/AIDS epidemic. The problem of young peoples' misguided love and sexuality confronts today's health workers daily.

Objective: We present a case report of a young girl, who blindly fell in love with an HIV positive man and could not be persuaded otherwise.

The Case Report: X, a 24-year old female student nurse, virgin, was hospitalized for depression following rejection by her 48-year old HIV-positive lover, Y, who had had 3 divorces. They met at a party, interacted for 30 minutes, fell in love and five months later

planned their wedding. Before their introduction Y disclosed his HIV-positive status and X was subsequently advised not to marry him but to no avail. Y introduced to X other girlfriends to dissuade her but failed. On realizing Y's insistence not to marry her, X became profoundly depressed. Y went through the wedding, but continued to show X other girlfriends and subsequently X attempted suicide 3 times, hence the hospitalization. After 3 ECT treatments, X's mood improved. X and Y then started having sex on the ward which led to her discharge on fluoxetine 20mg daily with follow up psychotherapy. Two weeks later, her mood had improved. She was not suicidal but still in love with reluctant Y.

Conclusion: This case report shows the extent to which love can blind rationality, especially in the young, causing a dilemma in prevention efforts in the face of HIV/AIDS, thus calling for increased sex guidance amongst the youth.

ASC07:16 Assessment of the pull system for the improved supply of drugs and medical supplies in Kilembe hospital

Tumwine Yona, Kutwabami Paul, R Odoi – Adome, Kalyango N Joan

Department of Pharmacy, Faculty of Medicine, Makerere University, nakayaga2001@yahoo.com

Background: The pull system of drug distribution was introduced in Uganda in 2003 to ensure that drugs and medical supplies are available at service delivery points and to reduce the rate of drug expiry. However, its effect in handling these problems has not been assessed.

Objective: To assess the pull system strategy for improved availability of drugs and medical supplies in Kilembe hospital

Methods: A cross sectional study was carried out at Kilembe hospital. Records for 12 medical supplies and 28 drugs were reviewed from the push (2000/2001) and pull system (2004 /2005). Key informant interviews were conducted with some hospital staff. Study variables included availability of essential drugs and supplies, stock management, supervision and other factors affecting availability. Data was analyzed with SPSS.

Results: Average percentage days out of stock in the push system for drugs and medical supplies were 14 and 1.7 respectively and 3.3% for drugs and 1.2% for medical supplies in the pull system. The proportion of drugs that were out of stock in 2000/2001 (73.2%) was significantly different from that in 2004/2005 (39.3%). A total of 25 items valued at 3,168,400/= were expired in 2000/2001 period as compared to 13 items valued at 2,613,850/= in the 2004/2005 period. Problems identified with drug supply were lack of transport, low staffing levels and lack of staff training.

Conclusions: The supply of drugs has improved tremendously with the pull system. The rate of drug expiry has also reduced. Staffing and transportation were main hindrances cited in drug availability.

ASC07:17 Environmental predictors of cognition in Ugandan children: implications for community based interventions

Paul Bangirana¹; Michael J. Boivin^{2,3}; Richard Idro⁴; Robert O. Opoka⁴; Justus Byarugaba⁴; Anne M. Jurek⁵; Chandy C John⁵

- 1 *Department of Mental Health and Community Psychology, Makerere University Institute of Psychology, Kampala, Uganda, P.O Box 7062, Kampala, Uganda, Tel: 256-772-673831 Email: pbangirana@yahoo.com*
- 2 *International Neurology and Psychiatry Epidemiology Program (INPEP), Michigan State University, East Lansing, MI, USA*
- 3 *Neuropsychology Program, Department of Psychiatry, University of Michigan, Ann Arbor, MI, USA*
- 4 *Department of Paediatrics and Child Health, Mulago Hospital/Makerere University Medical School, Kampala, Uganda*
- 5 *Global Pediatrics Program, Department of Pediatrics, University of Minnesota, Minneapolis, MN, USA*

Background: Several diseases and adverse conditions affect the cognitive development of children in developing countries for which community interventions have been suggested. Identification of environmental factors that best predict cognition in these children can help in developing these interventions

Objective: To identify environmental variables which best predict cognitive functioning in Ugandan children.

Method: A cohort of 89 healthy children 5-12 years of age were followed over 24 months and had cognitive tests measuring visual spatial processing, memory, attention and spatial learning administered at 0, 6 and 24 months. Environmental variables including nutritional status, child's educational level, mother's education, socioeconomic status and quality of the home environment were also measured at baseline. A mixed effects model was then used to identify predictors of cognition over the 24 months.

Results: Child's education predicted memory ($p=0.03$), attention (0.01) and spatial learning ($p=0.05$); nutrition predicted visual spatial processing ($p=0.002$) and spatial learning ($p=0.008$); home environment predicted memory ($p=0.003$).

Conclusion: Cognition in Ugandan children is predicted by child's education, nutritional status and the home environment thus community interventions to improve cognition may be effective if they target multiple predictor variables.

Key words: cognition, child development, community intervention, environment

ASC07:18 Prevalence and pattern of psychological disorders in first-degree relatives of children with cerebral palsy in Enugu, Nigeria.

Ijezie E

Department of Paediatrics, School of Health Sciences, Kampala International University, Western Campus, P.O.Box 71, Ishaka, Busbenyi, Uganda, Email: echeyijezie@yahoo.com.

Introduction/ Background: Cerebral Palsy (CP) is the commonest motor disability in childhood world-wide. It causes a wide variety of psychological effects on relatives and caregivers. Elucidating the psychological impact it has on first-degree relatives will help create a pre-emptive and preventive strategy that can be incorporated in its management.

Objective: To determine the prevalence and pattern of psychological disorders in parents and primary school-age siblings of children with CP seen at the Paediatric Neurology Clinic of the University of Nigeria Teaching Hospital (UNTH), Enugu, Enugu State, Nigeria.

Methods: The study was carried out in the Paediatric Neurology Clinic of the UNTH, Enugu, Enugu State, Nigeria; in the schools attended by siblings of CP patients and in their homes. The study population included 80 children with CP and their 144 parents and 129 siblings. The controls were 129 children without CP or other chronic illness and their 144 parents. Both groups were matched for age, sex, and socio-economic class. Proforma for bio-data, history, clinical and Edinburgh classification of CP type with deficits; Socio-economic classification system of Oyediji; the 60-item General Health Questionnaire (GHQ); the Zung Self-Rating Depression Scale (ZDS); the Rutter's Behavioral Scale for Children (Teachers') were used as instruments for the study. The approval of the Ethical Committee of the UNTH, Enugu, Nigeria was obtained. Informed verbal consent was obtained from the patients' parents before recruitment of the parents and patients as well as from the control parents. Similarly, consent was obtained from head teachers and class teachers of the schools attended by the siblings of CP patients and controls.

Results: Eighty-four percent (84%) of the parents of children with CP had psychological morbidity compared to 6.9% of controls ($p < 0.05$). Eighty-four percent and 33.3% of the parents and controls, respectively, had depression ($p < 0.05$). Mothers of the children with CP were significantly more affected than fathers, with psychological morbidity found in 70.3% of fathers compared with 95.0% of mothers ($p < 0.05$) and depression found in 65.6% of fathers compared to 98.7% of mothers ($p < 0.05$). Among the controls, mothers were more affected than fathers, with psychological morbidity in 4.7% of fathers, compared to 8.8% of mothers ($p < 0.05$) and depression in 18.7% of fathers, compared to 45.0% of mothers ($p < 0.05$). For the siblings of the CP patients, 5.4% showed behavioral abnormalities compared with 2.3% of controls ($p < 0.05$).

Conclusion: Significant psychological morbidity, including depression occurs among parents of children with CP, with mothers being more commonly affected than fathers. Primary school-age siblings of the CP patients, do not have significant behavioral abnormalities, however, they do have higher rates of behavioral abnormalities than controls.

ASC07:19 Childhood Burkitt's lymphoma, 20 years experience from Uganda Cancer Institute.

Jackson Orem, Albert Maganda, Elisabete Weiderpass , Edward Katongole Mbidde

Uganda Cancer Institute, Kampala, Uganda, JOrem@mucwru.or.ug

Background: Burkitt's lymphoma (BL) is the commonest childhood tumor in Sub Saharan Africa. The incidence has increased lately in Uganda during HIV epidemic. There has been no previous association between HIV and childhood BL.

Objective: This study looks at the possible impact of HIV on BL by comparing presentation and outcome.

Material and methods: Review of BL cases at Uganda Cancer Institute (UCI) a national cancer treatment center between 1985-2005 done. Children 2-15 years with BL treated between Jan 1985 to December 2005 were eligible. Demographics and clinical data (age, gender, symptoms, disease site, stage, treatment and outcome) were abstracted, a standard questionnaire. Analysis was by (χ^2) test for descriptive statistics and Kaplan-Meyers for survival.

Results: 1238 charts were reviewed, 781(63%) males and 457(37%) females. Median age was 7years. The commonest presenting symptoms were fever (50%), weight loss (48%) and night sweat (26%). The commonest disease sites were face (78%), abdomen (68%), and lymph nodes (17.9%). Overall significant increase in BL cases has occurred between time <1996 and >1996(325 vs 913), but no change in clinical characteristics noted. Mortality has decline with time <1996 and >1996(OR 4.0 CI 1.98, 4.42) including among subset of HIV positive (OR 5.9 CI 1.47, 23.97). Median survival has improved overtime including among HIV +ve <1996 and >1996(3.6mnts CI .23, 7.0, 12.0mnts CI 4.5, 19.2).

Conclusion: Despite the current increase in BL, during HIV epidemic in Uganda, there is no change in clinical characteristics. On the contrary there is overall improvement in disease outcome and survival overtime even among HIV infected children.

ASC07:20 "I think traditional healers treat epilepsy better" assessing the need of integrating traditional healers in management of epilepsy.

Robert Zavuga¹, Emmanuel Ssemmondo², Haruna Muwonge², Harriet Birabwa³

1 Makerere University Faculty of Medicine BDS IV email: rzavuga@med.mak.ac.ug

2 Makerere University Faculty of Medicine MBChB IV

3 Makerere University Faculty of Medicine, department of Psychiatry

Introduction: Traditional Healers have managed epileptics long before the introduction of modern medicine. As much as modern medicine has existed for almost 150 years in Uganda, its practices have failed to completely replace traditional medicine's and it's no suprise that a statement " I think traditional healers treat epilepsy better" of course ahead of medical doctors came up in an FGD session held during the KAP study carried out in Kawempe division about epilepsy. Consequently, traditional healers have to be intergrated in

management of epileptics for better results. This is so because traditional medicine practices are deeply embedded in lives of most people in Uganda.

Objective: To assess the need of integrating traditional healers in epilepsy management in Kawempe division.

Methods: The study was carried out from August to September 2006 among household heads or their spouses in 6 parishes of Kawempe division, Kampala. It was an exploratory and descriptive study in which 384 respondents were interviewed to explore the knowledge, attitudes and practices towards epilepsy. In addition, FDG's and Key informant interviews were utilised.

Results: Thirty six percent of the respondents said that epilepsy can successfully be treated by using traditional medicine while 28% mentioned drugs as a treatment option. The rest were not sure of what treats better. There was also a positive correlation between level of education and treatment options. ($P= 0.027$). Respondents who did not study up to Secondary School Level proffered traditional medicine.

Conclusion: There is still preference of traditional medicine to modern medicine in management of patients with epilepsy. This calls for interventions for integrating traditional healers in epilepsy management if we are to achieve better results.

ASC07:21 Management of food poisoning caused by enterotoxigenic *E. coli* producing heat stable toxins in community in low resource countries - Kenya

Margaret Wanjiku¹, J.N. Muthotho²

1. *Nutrition and Health Program, King Baudouin Foundation (Kenya), P.O. Box 3944, Nakuru. Tel: 0720-891128, healthpro99@yahoo.com*
2. *Kenya Medical Research Institute, P.O. Box 54840, Nairobi, Kenya*

Background: The emerging entero pathogens that is toxic *E.coli* and *Shigella* organisms transmitted by untreated water and unhygienically prepared foods is creating a major problem in the community. The 14 years study in Kenya shows food and waterborne diseases are still a major problem. The use of antibiotics has not reduced morbidity and mortality. The main cause of this problem of toxin producing *E. Coli*. This calls for a new approach by management toxin producing food poisoning agents and neutralize toxins already produced.

Methods: From 1983, food poisoning agents were investigated during the outbreak in Kenya. Sensitivity was done, toxin produced was investigated, and model of transmission was studied. Health providers were advised on drugs to use for management i.e antibiotics with toxin neutralizing agents (attapulgate) and those without.

Results: From 1983, new food poisoning toxin producing agents have been discovered and added to conventional ones thus making management of food poisoning more expensive and difficult. 23% of food poisoning was found to be due to Heat stable toxin producing *E. Coli*. These organisms continued, developing resistance to new drugs through plasmid resistant factors. Food poisoning due to toxigenic agents (*E. Coli*) responded better with antibiotics combined with activated attapulgate (magnesium aluminum silicate). This is a chemical that has a high absorbent power to neutralize toxins produced. Those treated with antibiotics continued to have stomachache and constipation.

Conclusions: Our study shows that antibiotics with attapulgate are among the cheapest

drugs for food poisoning due to food and water borne toxin-producing agent. Chlorination of water at "Point of use" is recommended in controlling food / waterborne diseases in low-resources countries.

ASC07:22 Understanding clubfoot in Uganda

Sheba N Gitta, J. Konde-Lule, S.Neema, T.McElroy.

Makerere University Institute of Public Health, Kampala, Uganda, Email: sgitta@iph.ac.ug

Background: In Uganda, approximately 1000 infants are born with clubfeet annually and there are about 10000 children with neglected clubfoot. Unlike many disabilities, there is a low-technology treatment available for correcting clubfoot in children: the Ponseti method.

Objectives: To investigate the local explanatory models for clubfoot and identify current treatment-seeking behaviour in Uganda.

Methods: Rapid ethnographic study conducted in the districts of Kampala, Masaka, Ntungamo, Mbarara, Mukono, Mbale, Iganga, and Tororo. Data collection involved 48 focus group discussions (community members), 157 interviews (community leaders, practitioners treating clubfoot and parents of affected children) and participant observation.

Results: Across all ethnic groups, no single local term exists for what biomedicine describes as clubfoot. Children with clubfoot are given special names which demonstrate they are disabled. There is uncertainty about the cause of clubfoot, with several probable theories mentioned; these included: heredity, higher power, contraceptives and environmental factors. Both biomedical and traditional care for clubfoot was identified. Medical pluralism exists with many respondents reporting concurrent and sequential use of multiple treatment methods for clubfoot. Treatment seeking was influenced by: awareness, beliefs, delivery place, access to health-facility, poverty, social influence, responsibilities at home, stigma, past care experiences and good treatment outcomes.

Conclusions and Recommendations: Local dialects have no unique name for clubfoot, therefore, awareness campaigns should utilise visual aids. Since clubfoot is grouped with other physical disabilities, universal health consultation for children with congenital physical impairment should be promoted. Communities should be sensitized on the existence of corrective treatment for clubfoot at all regional hospitals. Midwives, nurses and traditional healers should be trained to identify and refer children with clubfoot.

ASC07:23 Determination of the prevalence and factors associated with alcohol consumption among female undergraduates resident on Makerere University main campus.

Gloria Dusabe, Norbert Anyama, Paul Kutuyabami, Odoi Adome, Ronald Kiguba

Department of Pharmacy, Faculty of Medicine, Makerere University, gngutse@yahoo.com

Background: Data suggest that a large proportion of university students drink alcohol worldwide. That notwithstanding, there is a paucity of data on the extent of alcohol consumption and its associated factors among female undergraduate students in a Ugandan

university setting.

Objectives: To assess the extent of alcohol consumption and its associated factors among Makerere University female undergraduates.

Methods: This cross-sectional study was conducted on Makerere University main campus in March 2007. A total of 180 respondents who agreed to participate in the study were assessed using semi-structured questionnaires. We used sampling proportionate to size to recruit the respondents from each female hall of residence. Alcohol consumption was defined as a respondent having drunk an alcoholic beverage in the 3 months prior to the start of the study. These included beers, wines and spirits.

Results: Mean age was 21.4 (SD 3.72) years with a range of 19 to 27 years. The prevalence of alcohol consumption was 48.2%. The most frequently consumed alcoholic beverage was wine (57.8%) followed by beers (19.5%) and spirits (14.5%). The main reasons for consuming alcohol were socializing (41%), freedom (19.2%), and availability (19.2%). The most frequently reported consequence was having unplanned sex (48.3%). On multivariate analysis, pursuing a science-based course was found to be significantly associated with alcohol consumption (OR = 2.24, 95% CI; 1.16-4.34, P=0.016) compared to arts-based courses.

Conclusion: The extent of alcohol consumption was high. The most frequently cited reason for alcohol consumption was socializing, and unplanned sex was the commonest consequence.

ASC07:24 Skin prick test reactivity to common allergens among women in Entebbe, Uganda.

**Harriet Mpairwe¹, Lawrence Muhangi¹, Juliet Ndibazza¹, Josephine Tumusiime²,
Laura C. Rodrigues³, Alison M. Elliott^{1,3}.**

1 MRC/UVRI Uganda Research Unit on AIDS, Uganda Virus Research Institute, P.O. Box 49, Entebbe, Uganda, Email: mpairweus@yahoo.com

2 Entebbe Hospital, P.O. Box 29, Entebbe, Uganda.

3 London School of Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

Background: Worm infections may have a role in prevention of allergy and atopic sensitisation.

Objectives: To identify allergens causing atopic sensitisation among women in Entebbe, Uganda; estimate prevalence of atopic sensitisation; investigate associations between atopy and allergic diseases and explore whether infection with worms is associated with reduced prevalence of atopy and allergic diseases.

Methods: The study population was a sub sample selected from the first 790 women of the trial population of 2500. All 43 women with reported history of asthma or eczema and 95 randomly selected women with no such history were studied. Women were tested by skin pricks for atopic reactions to house dust mites, moulds and weed pollens commonly occurring in the study area, pets and cockroach. Associations between worms and asthma were explored in the case control study and associations between worms and atopy were investigated in a group representing a random sample of all women.

Results: Overall prevalence of skin prick test reactivity to any allergen was 30.5%. House dust mites and cockroach were the main causes of sensitisation. Reactivity was higher among

women with a history of asthma/ eczema. Mansonella perstans was statistically significantly associated with lower atopy (aOR 0.14; 95% CI 0.03 – 0.69) and hookworm infection with a lower frequency of reported history of asthma (aOR 0.41; 95% CI 0.19 – 0.92).

Conclusions: In Entebbe, Uganda, house dust mites and cockroach are common causes of atopic sensitisation, and some worm infections are associated with reduced risk of atopy and asthma.

ASC07:25 Development and validation of an RP-HPLC method for assay of the potency of biphasic isophane insulin.

Okello O. Simmons, Robbert BD Otto, N Anyama and R.O. Adome

Department of Pharmacy, Makerere University Faculty of Medicine

Background: Insulin preparations available on the Ugandan Market are not tested for quality and potency. Reliance is on cGMP inspection of pharmaceutical plants and manufacturers Q.C tests to assess the quality of insulin products and yet Insulin products that even passed manufacturers Q.C tests can lose potency if not stored at 2- 8 degrees Celsius

Objective: To develop an RP-HPLC method to be used to assess the potency of insulin preparations available in Uganda.

Methods: HPLC solvents are prepared from HPLC grade materials and degassed.

A compendial preparation was used to prepare the external standard of concentration 0.4mg/ml. Test /analyte samples are prepared to obtain a concentration identical to that of the reference. Peak responses of test samples were compared with those of calibration standard/ external standard. Retention time was chosen as the criteria for labeling the peaks. Peak area was selected as the parameter for quantitation of insulin.

Results: The P.H of the preparations studied were all within the range specified by the B.P and U.S.P. Resolution (Rs): The resolution between the peak of interest and the closest eluting peak was greater than 1.5. Baseline separation was achieved.

Theoretical Plates (N). The average number of theoretical plates was above 2000 implying that the efficiency of the separation was acceptable.

Conclusion: The method was robust, as it gave accurate results even after the low P.H had caused some changes in the solid support as evidenced by decrease in column efficiency.

ASC07:26 A survey on the levels of lead in water for domestic consumption in Kawempe division, Kampala

Lukwago M Idriis, R. B.D. Otto, R.O. Adome

Department of Pharmacy, Makerere University Faculty of Medicine

Background: Water is a potential source of toxic heavy metals that dissolve in it from the atmosphere such as lead from exhaust fumes of automobiles and those leached from the soils. Very little or no attention has been given to establishing the levels of lead in these water supplies.

Objective: To assess whether the levels of lead in domestic water supplies of Kawempe Division are within the recommended limits.

Methods: This was a cross-sectional study carried out in Kawempe division. Out of 18 parishes, 6 were purposively selected. Methodology was adopted from the hand book, Rapid assessment of drinking – water quality (RADWQ) developed by UNICEF & WHO under the Joint Monitoring Program (JMP). Spring & tap water, the only 2 domestic water sources in the division were sampled. Samples were collected in PVC containers and analyzed using Atomic Absorption Spectrophotometry

Results: Almost all the water sources sampled did not conform to the JECFA standard of 0.01mg/L. Only 3 samples conformed with the JECFA standard, 2 taps & the L. Victoria sample. Eight samples had moderately high conc. of Pb (0.019-0.069mg/L), 7 springs & 1 tap. Seven samples had extremely high conc. of Pb (>0.07mg/L), 5 taps & 2 springs. 8 out of the 18 samples conformed to the Uganda national standard for potable water for Pb (0.05mg/L).

Conclusion: Concentration of lead was generally higher in tap water compared to spring water. Comparing the levels of lead in tap water and L. Victoria suggests contamination of water during treatment or transit to the users. Pb contamination of spring water is probably due to lead deposits in those areas

Key words: Water, lead, domestic consumption

ASC07:27 Community follow-up of psychiatric patients in Moi teaching and referral hospital

David Ndegwa

Moi university school of medicine, P.O.Box 4606 Eldoret, Tel 0721-659321 /0728-002214

Email - ndegwadav@yahoo.com

Introduction: Community mental health nursing focuses on facilitating and using therapeutic relationships with persons families and populations at risk to promote treat and restore the mental health of the public.

Study objective: To evaluate the community environment and family support to psychiatric patients.

Methodology: Study area: Psychiatry ward Moi teaching and referral hospital

Study Population: All patients in the psychiatry ward in Moi teaching and referral hospital.

Study Design: A descriptive cross-sectional study.

Sampling technique: Multi stage sampling

Data Collection tools: In-depth interviews and focus group discussions

Results: The families of the clients were found not to be aware of what the client was being treated for, and tended to treat them as patients even during phases of disease remission. They were also been so overprotective and denied the clients any means of self reliance e.g. business and even some refused them to marry. They generally considered mad men/women. After the visit the family understood the disease process and approached the client in a more positive way and took him like any other human being. They also realized that lack of family support as a main cause of relapse(s).

Conclusion: Family support and health education are major determinants in the disease progression and prognosis. Psychiatric community health nurses should be incorporated in

mainstream health care delivery systems to ensure equitable health care. Family – health provider conference before discharge/ parole. To assess the psychosocial support available.

ASC07:28 Prevalence of methicillin resistant staphylococcus aureus (MRSA) among isolates from surgical site infections in Mulago Hospital, Kampala Uganda.

Ojulong Julius, Mwambu Tom Philip, Joloba Moses, Kaddu-Mulindwa D.H

*Department of Medical Microbiology, Makerere University, 2. Mulago Hospital complex, Kampala..
ojulong_julius@yahoo.co.uk, 0772 604907*

Background: MRSA isolates are resistant to penicillins and all other p-lactam antibiotics. Nosocomial MRSA are also resistant to a variety of other antibiotic classes. MRSA infections are associated with a high morbidity in Uganda. There is limited data on the magnitude of MRSA in surgical site infections. The objective of this study was to determine the prevalence of MRSA among *S. aureus* isolates from surgical site infections in Mulago Hospital, Kampala Uganda.

Methods: One hundred eighty eight pus swabs were collected from patients with surgical site infections. Swabs were inoculated for culture at the Microbiology laboratory Faculty of Medicine, Makerere University. *S. aureus* was identified biochemically. All *S. aureus* isolates were subjected to oxacillin agar screen and then tested with a polymerase chain reaction (PCR) assay for detection of the *mecA* gene which codes for oxacillin resistance.

Results: Out of the 188 specimen cultured, 54 (28.7%) grew *S. aureus*. Seventeen (31.5%) of the 54 isolates were confirmed as MRSA by PCR.

Conclusion: Our study shows a high prevalence of MRSA in surgical site infections in Mulago Hospital.

ASC07:29 Validity of helicobacter pylori stool antigen test in dyspeptic patients presenting at the Kenyatta National Hospital, Nairobi.

**Lawrence Guantai M¹, Rvathi Gunturu², Thomas M. Mutie³, Japheth K. Magambo¹,
Mary Mungania³**

1. *Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University of Agriculture and Technology*;
2. *Aga Khan University Hospital, Nairobi*;
3. *Kenyatta National Hospital, Nairobi, gmitongo@yahoo.com*

Background: *Helicobacter pylori* is a major cause of chronic gastritis and peptic ulcer, and is associated with gastric cancer and gastric mucosa associated lymphoid tissue (MALT) Lymphoma. Although stool antigen tests have been put into the market for diagnosis of active *H. pylori* infection these rarely have been validated in Kenya.

Objective: To evaluate the clinical value of a new test, Rapid Strip! HpSA™ (Meridian Bioscience, Europe), for diagnosis of *H. pylori* infection in dyspeptic patients presenting at

Kenyatta National Hospital in Nairobi.

Design: Prospective, cross-sectional descriptive study.

Subjects: Fifty patients aged between 14-73 years, presenting with dyspepsia and referred for upper gastro-intestinal endoscopy were recruited into the study from July-to November 2006, at Kenyatta National Hospital. Rapid strip! HpSA was used to detect H pylori stool antigens and results read by two observers. Diagnosis of H pylori infection was confirmed when both rapid urease test and histology were positive; this was considered as gold standard. The absence of H pylori infection required the two tests to be negative.

Results: H pylori infection was present in 35 (70%) patients and absent in 15 (30%) patients as determined by the gold standard diagnosis. The Rapid strip! HpSA produced positive and negative results in 33 (66%) and 17 (34%) patients respectively. Compared with the gold standard, the HpSA was inaccurate in 4(8%) patients (1 false positive and 3 false negatives), giving a sensitivity, specificity, positive predictive and negative predictive values and total accuracy of the rapid HpSA of 91.4% (32/35), 93.3% (14/15), 97% (32/33), 82.4% (14/17) and 92% (46/50), respectively. The likelihood ratio for 'a positive test result was 13.714 and for a negative test result 0.09; both values fulfill the criteria for a good diagnostic test

Conclusion: The stool antigen test, Rapid strip! HpSA is a simple non invasive and accurate test for the diagnosis of active H pylori infection

ASC07:30 An Outbreak of pneumonic plague in Masindi District - The investigation and response, February 2007

Luswa Lukwago^{1,2}, Joseph F. Wamala², Mucunguzi Akasiima², Monica Musenerol, Mugagga Malombo, Julius Lutwama³, Rita Mbabazi⁴, John Kirungi⁴, Atek Kagirita⁵, and Ambrose Talisuna¹

1 *Ministry of Health*

2 *Makerere University Institute of Public Health, Wamala F Joseph, MBCbB, MPH Ministry of Health - Epidemiology Surveillance Division P. O. Box 7272, Kampala Uganda. E-mail: Lwamala@yahoo.com*

3 *Uganda Virus Research Institute*

4 *Masindi district*

5 *Central Public Health Laboratories*

Background: An outbreak of pneumonic plague constitutes a public health emergency. The Ministry of Health received a report of a disease outbreak in Masindi district on the 14th February 2007. The tentative diagnosis was viral hemorrhagic fever with plague and meningococcal meningitis as differential diagnoses.

Objectives: The main objective of the investigation was to determine the cause of the outbreak so as to initiate appropriate response activities to control the outbreak.

Methods: We interviewed and examined cases, reviewed hospital records, and searched for additional cases in the villages that reported cases. The line list developed was used to describe the outbreak so as to focus the interventions. Laboratory investigations were conducted to determine the etiology.

Results: Laboratory analysis using PCR confirmed Plague bacillus. The index case had a history of travel and residing in the plague endemic Nebbi district. The rest of the cases had

a direct link with this index case either through nursing and care or traveling to Nebbi for burial of the dead due to plague. A total of 22 cases were reported between February 2 and 27, 2007. The attack rates were highest in: the 20-29 years age-group (204/100,000); and in Kajebe village (404/100,000). The overall Case Fatality Rate was 45.5%.

Conclusion: The response activities included training of health workers in appropriate case management; public health education using radio talk shows and film shows; and active case finding in the affected villages.

ASC07:31 Trends of influenza virus isolates in Nairobi Kenya between 2005 – 2006.

S.M.S. Lifumo¹, G. Gachara^{1,2}, W.O. Ochieng¹, J.M. Magana¹, & J.M. Simwa¹

Centre for Virus Research, ARI Unit, Kenya Medical Research Institute, Nairobi, Kenya; Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya; Correspondence email: symolis@gmail.com / symolis@yahoo.co.uk / smorris@kemri-nitm.or.ke

Introduction: Influenza viruses can cause a wide spectrum of illness and are a major cause of morbidity and mortality worldwide. Continuous surveillance for the identification and typing of isolates is important for epidemiological reasons, timely therapeutic intervention and regular updating of influenza vaccine in order to provide maximum protection against this virus.

Methods: In the period between 2005 – 2006, we received 759 throat swabs from 11 sentinel clinics in 2005 and 150 samples in 2006 from 10 clinics that are involved in influenza surveillance around Nairobi. Direct fluorescent antibody testing (DFAT) identified 277 samples positive for influenza B in 2005, and 34 in 2006. All samples in 2006 and DFAT positive samples in 2005 were inoculated to Madin Darby Canine Kidney (MDCK) cell line and upon development of cytopathic effect (CPE), haemagglutination (HA) was carried out to identify positive isolates and haemagglutination inhibition (HAI) test was done on the positive samples to identify the influenza strains.

Results: In 2005, a total of 136 isolates were typed and 135 were found to be influenza B/Shanghai/361/2002 like while 1 was found to be influenza B/Hong Kong/330/2001 like. In 2006, 5 isolates were typed and 4 were found to be influenza A/New York/55/2004 - like while one was found to be influenza B/Malaysia/2506/2004 - like.

Conclusion: The results show changing trends of influenza isolates since they changed from B/Shanghai/361/2002 – like in 2005 to B/Malaysia/2506/2004 – like in 2006. This is the first time to isolate Influenza A (A/New York/55/2004 – like) in Kenya since the study began.

ASC07:32 Seroprevalence and factors associated with brucellosis among abattoir workers in Kampala and Mbarara districts, Uganda

Nabukenya I, Nasinyama G. W., Kaddu-Mulindwa D., Karamagi C.

Makerere University, Kampala: lennfaitb@yahoo.com, lennfaitb@vetmed.mak.ac.ug

Introduction: Brucellosis is among the most widespread zoonotic infections transmitted from infected animals to humans by contact with blood, fetuses and membranes, uterine secretions, aborted material or through consumption of infected raw animal products. In Uganda, there is no information available to the public domain on prevalence of brucellosis among abattoir workers.

Objective: To estimate the seroprevalence of brucellosis and risk factors associated with it among abattoir workers in Kampala and Mbarara districts.

Methodology: A cross-sectional study was done in 2007 in Kampala City Council and Mbarara Municipal Council abattoirs. Abattoir workers (232) aged 18 years and above who had worked there for at least three months and consented to participate in the study were included. Socio-demographic, occupational and health-related data was captured using a questionnaire. Malaria a common misdiagnosis for brucellosis was assessed using a Giemsa stained blood smear while brucellosis was tested using Microplate Agglutination Test and Standard Tube Agglutination Test. 12 Key informant interviews were conducted. Data was analyzed in SPSS.

Results: Seroprevalence of brucellosis was 21% (95%CI 15 - 27) and prevalence of malaria was 3% (95%CI 0-6). One case of dual infection of brucellosis and malaria (*Plasmodium falciparum*) was found. Use of full protective gear when working had reduced risk (OR 0.02, 95%CI 0.002 – 0.2) and past experience with brucellosis had increased risk (OR 3.9, 95%CI 1.6 – 9.5).

Conclusions: This prevalence of brucellosis is high while dual infection and malaria prevalence is low. Measures need to be put up to control brucellosis among abattoir workers.

ASC07:33 Prevalence of hepatitis B and validity of hepatitis B testing in patients attending medical emergency ward, Mulago Hospital, Kampala-Uganda

E Seremba¹, P Ocama¹, CK Opio¹, M Kagimu¹, D Thomas², HJ Yuan³, N Attar³, WM Lee³.

1Makerere Medical School, Kampala, Uganda, 2Johns Hopkins Medical School, Baltimore and 3UT Southwestern Medical School, Dallas TX.

Background: The prevalence of hepatitis B virus (HBV) in Africa varies widely. Commercially available rapid slide assays (RSA) are used for most routine clinical testing in sub-Saharan Africa.

Objectives: We determined the prevalence of HBV markers among patients in a large city

Emergency Medical Ward (EMW) in Uganda and evaluated the accuracy of RSA in this setting.

Methods: Sera from 380 consecutive patients were tested for HBsAg in Kampala by RSA and sent frozen to Dallas for additional testing including EIA for HBsAg, total anti-HBc, anti-HBs, HBeAg and anti-HBe, anti-HIV and, on HBsAg positives nucleic acid testing (NAT) and genotyping. Additional NAT by bDNA was done on a random sample of 20 sera that were HBsAg negative in both assays.

Results: 31 (8.2%) were HBsAg positive in Kampala but 49 (12.9%) HBsAg pos in Dallas; 26 were concordant between the two sites; 48/ 49 EIA pos Dallas samples were NAT pos (44 bDNA, 4 PCR). However, 4 more NAT pos samples were identified Among 23 discordant HBsAg sera (neg Kampala, pos Dallas), 22 were NAT pos, 20 HBeAg neg, and 16 had low viral loads (<20,000 IU/mL). 5/5 tested thus far were genotype A.

Conclusions: In this in-hospital study, (13.7 %) had evidence of HBV by NAT. RSA missed at least 1/3 due to apparent low sensitivity.

Recommendation: In addition to EIA, additional NAT seems necessary, since several false negative HBsAg tests were identified. Chronic hepatitis B in sub-Saharan Africa is not reliably detected by RSA.

ASC07:34 Prevalence and factors associated with rotavirus infection among children admitted with acute diarrhoea in Mulago hospital

Jane S. Nakawesi, Eric Wobudeya, Edison A. Mworzi, James K Tumwine

Department of Paediatrics and Child Health, Makerere University Medical School, P.O Box 7072 Kampala, Uganda. Correspondence: Email: jnakawesi@med.mak.ac.ug; Tel: 0782 226 406

Background: Rotavirus is the commonest cause of severe dehydrating diarrhoea among children worldwide. By five years almost all children will have had an episode of rotavirus diarrhoea. Hitherto the current magnitude of rotavirus disease in Uganda was unknown.

Objective: To determine the prevalence and factors associated with rotavirus infection among children aged 3-59 months admitted with acute diarrhoea to Acute Care Unit (ACU) of Mulago Hospital

Methods: Three hundred ninety children, aged 3-59 months with acute diarrhoea were recruited, after consent by the caretakers. Information on clinical, sociodemographic, and laboratory tests was recorded. Stool samples were tested for rotavirus antigens using the DAKO IDELA EIA kit.

Results: The prevalence of rotavirus infection was 45.4%. Rotavirus was significantly associated with caretaker education above secondary level [OR 1.9(95%CI,1.2-2.9)];p=0.003, more than 4 people in the house [OR1.6(95%CI,1.1-2.6)];p=0.025 and breastfeeding [OR13.7(95%CI,1.6-116.1); p=0.017. No significant association was found between rotavirus infection and nutrition, HIV and attendance of day care.

Conclusion and recommendations: Rotavirus infection is highly prevalent among children with acute diarrhoea admitted to ACU Mulago Hospital. A rotavirus vaccine is recommended and a community based study to identify the type of rotavirus strains in Uganda is needed so that an appropriate vaccine can be used if a decision to give the vaccine is made.

ASC07:35 Ceftriaxone versus chloramphenicol for the treatment of severe pneumonia in children at Mulago Hospital: a randomized clinical trial.

Katureebe Cordelia Mboijana¹, Edison Mworozzi¹, D.H.Kaddu-Mulindwa², Ndeezi Grace¹, J.K.Tumwine¹

1. *Makerere University Department of Paediatrics and Child Health*, Cell phone 0772372411, E-mail: cordeliambojana@yahoo.com.
2. *Makerere University, Department of Microbiology*

Introduction: Acute lower respiratory tract infections are a leading cause of morbidity and mortality in Sub-Saharan Africa. The world health Organization (WHO) still recommends chloramphenicol for the treatment of severe pneumonia in children aged less than five years. However up to 20% of children fail treatment due to the emergence of resistance by bacteria. Several centres now use ceftriaxone a third generation cephalosporin reported to be efficacious in the treatment of severe pneumonia. However the high cost of ceftriaxone is too prohibitive to allow for its routine use in resource constrained countries like Uganda.

Objective: To compare the efficacy of ceftriaxone versus chloramphenicol in the treatment of severe pneumonia in children aged 6-59 months admitted to acute care unit Mulago Hospital.

Methods: This was a double blind randomized placebo controlled trial of 352 children with severe pneumonia and whose caretakers gave informed consent, were randomized to receive either intravenous ceftriaxone (75mg/kg/ day) or intravenous chloramphenicol (100mg/kg/ day) for seven days. The primary outcomes measured were: mortality; treatment success or failure (measured as time to normalization or no normalization of respiratory rate, temperature and oxygen saturation). Adverse effects associated with ceftriaxone and chloramphenicol were reported. Data was entered in to Epiinfo 6.4 software and analyzed using an SPSS package. The chi-square test with corresponding risk or odds ratios and 95% confidence intervals were used for categorical variables and the student's t test was used for continuous variables. Kaplan-Meier survival curves for the survival analysis measured by time to the event; and logistic regression for factors predicting outcome in both treatment groups.

Results: Mortality was similar in the two groups: 8.5% in the chloramphenicol arm and 7.5% in the ceftriaxone arm; RR 1.15(95% CI 0.57-3.35); p=0.69. This difference was not statistically significant. The fever clearance time, time to normalization of respiratory rate, oxygen saturation, and disappearance of chest in drawing were similar in both treatment groups. There were minor adverse events noted.

Conclusion: Intravenous ceftriaxone is as efficacious as intravenous chloramphenicol in the treatment of severe pneumonia in children.

ASC07:36 The efficacy of zinc as adjunct therapy in the treatment of severe pneumonia in children admitted to Mulago hospital

Maheswari Srinivasan, G. Sarah Kiguli, Grace Ndeezi, James K Tumwine

Department of Paediatrics and Child Health Makerere University Medical School Correspondence: mahesprathiv@yahoo.co.in Tel:07124044079

Background: Acute lower respiratory tract infections account for up to 30% of all childhood deaths in developing countries. Zinc deficiency is a global nutritional problem affecting populations of low socioeconomic status in both developing and developed countries. In Uganda zinc deficiency is widespread: 20-69 % in children and 21-29% in adults. Randomised controlled studies of zinc as adjunct therapy for pneumonia have yielded conflicting results.

Objectives: To determine the efficacy of zinc supplementation as adjunct therapy in the treatment of severe pneumonia in children admitted to the Mulago Hospital Paediatric wards.

Methods: In this double blind randomised placebo-controlled clinical trial, children aged between 6-59 months (n=176) with severe pneumonia according to WHO classification were randomized to zinc acetate or placebo once daily for seven days along with standard antibiotics for severe pneumonia, from September 2006 to March 2007. Clinical signs, symptoms and complication of pneumonia were assessed and recorded at 6-hour intervals. Analysis was by intention to treat.

Results: Overall mortality was 28(7.9%): 7(3.9%) in zinc group and 21(11.9%) in placebo group, (p=0.005); Relative Risk (RR) 0.33(95% CI of 0.15-0.76. The Relative Risk Reduction was 0.67(0.24-0.85) while Absolute Risk Reduction (ARR) was 0.0795. The Number needed to treat was 13. Zinc supplementation was well tolerated

Conclusion: Zinc given as adjunct therapy in the treatment of childhood severe pneumonia significantly reduced mortality compared to the placebo. We recommend that all children admitted with severe pneumonia should receive zinc supplementation as adjunct therapy.

ASC07:37 Burkitt's lymphoma in Uganda: the role of immunohistochemistry

Robert Lukande, Henry R. Wabinga, Lynnette Kyokunda Tumwine

Department of Pathology, Makerere Medical School, P.O. Box 7072, Kampala, Uganda, tumwinelvnnette@yahoo.com; Ivntumwine@med.mak.ac.ug, Tel: 256772 494119; Fax: 25641 530412

Background: Haematoxylin and eosin staining has remained the standard diagnostic method for Burkitt's lymphoma. Ancillary tests including immunohistochemistry, not widely available in developing countries, are key tools in verifying the diagnosis of lymphomas with equivocal morphological findings.

Objective: To establish the reliability of haematoxylin and eosin staining in the diagnosis of

Burkitt's lymphoma using immunohistochemistry as the gold standard.

Design: Laboratory cross sectional study

Setting: Department of Pathology, Makerere University Medical School, Uganda

Subjects: One hundred thirty eight formalin fixed paraffin embedded biopsies of Burkitt's lymphoma previously diagnosed from January 2001- December 2005

Intervention: The biopsies were retrieved and reanalyzed using haematoxylin and eosin staining. They were also subjected to a panel of monoclonal antibodies comprising of CD20, Bcl-2 and Ki-67. Main outcome measures: Sensitivity, specificity, positive and negative predictive values

Results: Of the 138 tumours, 88.4% were extra-nodal: jaw 36.2%, ovary 21 %, gastrointestinal tract 12.3% other abdominal 11.6%. Males (55.8%) predominated. The sensitivity and specificity of haematoxylin and eosin were 93.2% and 50% respectively. The positive and negative predictive values were 91.7% and 55.6%. The "starry-sky" appearance had low sensitivity (44.2%) and specificity (33.3%)

Conclusions: Histology using haematoxylin and eosin staining is sensitive in the diagnosis of Burkitt's lymphoma but not very specific. The starry-sky appearance, commonly used in the diagnosis of Burkitt's lymphoma, had low sensitivity and specificity. Immunohistochemical staining with CD20, Ki-67 and Bcl-2 is necessary for difficult cases.

ASC07:38 Clinical profile and antimicrobial susceptibility of pneumococcal bacteremia among febrile patients admitted to the emergency medical ward at Mulago hospital, Kampala

Namayanja G.A.K.¹, **Joloba M.L.**², **Salata R.A.**³, **Namale A**⁴

1. Department of Internal Medicine, Makerere University, grakye2005@yahoo.com

2. Department of Microbiology, Makerere University.

3. Makerere University-Case Western Reserve University Research collaboration.

4. CDC Entebbe

Background: We set out to determine the prevalence, clinical profile and antimicrobial susceptibility of *S. pneumoniae* bacteremia among febrile patients in above facility.

Objectives: To determine the prevalence, clinical presentation, short term clinical outcome and antimicrobial susceptibility patterns of *S. pneumoniae* bacteremia among febrile patients admitted to the emergency medical ward at Mulago hospital.

Methods: Descriptive cross sectional study with follow up of patients with confirmed *S. pneumoniae* bacteremia on blood culture. Febrile patients with an oral temperature of 37.8°C and above were sampled consecutively until the sample size was achieved. Using a standardized questionnaire, data on socio-demographics clinical features and outcome were collected. Blood was drawn for complete blood count, serum chemistry, bacterial culture and sensitivity. Data was analyzed using SPSS version 12.0.

Study setting: Emergency medical ward, Mulago Hospital Kampala, Uganda.

Study participants: A total of 386 febrile patients aged 13-81 years, who were admitted from November 2006 to March 2007 in the emergency medical ward were enrolled.

Results: The prevalence of *S. pneumoniae* bacteremia was 9.8% (38/386). Of these 68% were HIV infected. The mean oral temperature was 38.6°C and mean duration of fever was 3

weeks. Cough was reported by 78.9% and headache by 36.8% with a mean duration of 3 weeks. Cigarette smoking was noted in 15.8%. Multilobar consolidation on chest x-ray, was noted in 58% (11/19). The mean neutrophil percentage was 77.4 ± 12.6 % with a neutrophilia of $\geq 75\%$ present in 68%, impaired renal function with creatinine of $\geq 1.3\text{mg/dl}$ was found in 68%. Cough ($p=0.014$), chest signs ($p=0.048$), meningeal signs ($p=0.001$), neutrophil percentage ($p=0.004$), multilobar consolidation ($p=0.001$) were significantly associated with *S. pneumoniae* bacteremia, but cigarette smoking ($p=0.775$) was not. All *S. pneumoniae* bacteremia isolates were resistant to cotrimoxazole, but all were susceptible to ceftriaxone and erythromycin while only 21.1% were susceptible to penicillin. On follow up of the patients, the mean hospital stay was 8.6 days; 34.2% developed septicaemia, 28.9% pneumonia while 13.0% developed meningitis. Complete recovery was noted in 78.9%, and mortality in 7.9% (3/38) due to meningitis. Other bacteria isolated included *Salmonella* 3.4% (13/386), *Staphylococcus aureus* 1.6%, *pseudomonas aeruginosa* 5, *E.coli* 5, *Klebsiella pneumoniae* 3, *Haemophilus influenzae* 2, *Acinetobacter* 2, *norcadia* 1.

Conclusion: *S. pneumoniae* bacteremia is common among febrile patients admitted on the medical emergency ward at Mulago Hospital. The isolates are resistant to cotrimoxazole and penicillin which are the commonly available antibiotics. Mortality is more likely in those with leucopenia, anemia, HIV infection, meningitis and dehydration.

ASC07:39 Prevalence of anemia and its influence on treatment outcome in congestive heart failure patients attending Mulago hospital.

Kuule JK¹, Freers J¹, Lwabi P²

1. Department of medicine, Makerere Medical School, P.O B OX 7072 Kampala. ikkkuule2000@yahoo.com
2. Department of Pediatrics and Child health, Makerere Medical School.

Background: The occurrence of anemia in congestive heart failure portends a worse outcome as it increases morbidity and mortality. Unfortunately most of the studies looking at anemia in congestive heart failure have been carried out in western society and there is limited literature available from Sub-Saharan Africa.

Objective: To determine the prevalence of anemia and its influence on treatment outcome in congestive heart failure patients attending Mulago hospital.

Methods: This was a cross sectional study carried out in Mulago National referral hospital. 157 Patients admitted with congestive heart failure were recruited consecutively. All patients underwent echocardiography and had hemoglobin level determined. They were then followed up for two weeks and then re-assessed.

Results: One hundred and one (64%) had anemia at admission. The mean hemoglobin was 11.2g/dl. Increasing age was the most important risk factor for having anemia in congestive heart failure ($p=0.004$). The in-hospital mortality by the end of the two weeks was 10.2% and was significantly higher in the anemic patients compared to their nonanemic counterparts ($p=0.05$). The mean length of stay in hospital was 7.5 days but did not differ significantly between anemic and non-anemic patients.

Conclusion: The prevalence of anemia is high among patients with congestive heart failure attending Mulago hospital. The presence of anemia in congestive heart failure was associated with worse outcome.

ASC07:40 Assessing the impact of oral and dental health interventions through community based education and service (COBES). A case study of Lugazi primary school going children in Mukono district.

Robert Zavuga

Makerere University Faculty Of Medicine Bds IV, Email: rzavuaa@med.mak.ac.ua

Introduction: Despite the burden of oral health disease in Uganda, preventive measures through public oral health education have not been functional. Presently, oral health is not a priority of the Ugandan Ministry of Health yet it is documented as part of the National Minimum Health Care Package (NMHCP). The benefits of oral health and dental care have not been shared by everyone. This inequality is aggravated by poverty, poor living conditions, ignorance and lack of proper policies that provide sufficient oral education; yet oral health conditions are largely preventable.

Objective: To provide oral health services and oral health education to primary school going children in rural areas of Lugazi.

Methodology: Basic dental services were provided together with oral health education to pupils of St. Kizito Primary School in Lugazi. A simple questionnaire was first administered to every child which addressed the knowledge, attitude and practices on oral health before a full dental examination was done. These interventions were summed up with sessions of oral health education.

Results: One hundred and twenty two children were examined, 79 were boys the rest being girls. Hardly 5% of the children examined had ever visited a dentist for a check up. None of the examined children had ever seen an oral health educator in any health outreach.

Conclusion: COBES activities are expected to provide a ray of hope in Lugazi since they fill in the missing gaps left by the Ministry of Health through its implementers providing basic dental services and oral health education for prevention purposes.

ASC07:41 The effect of helminth infections and their treatment during pregnancy on birthweight in Uganda: results of a randomized double-blind, placebo controlled trial.

Juliet Ndibazza,¹ Denise Akishule,⁴ Lawrence Muhangi,¹ Margaret Nampijja,¹ Harriet Mpairwe,¹ Joseph Bukusuba,¹ Juliet Nabulime,¹ Robert Kizindo,¹ Trinh Duong,³ Moses Muwanga,² Alison Elliott.^{1,3}

- 1 MRC/UVRI Uganda Research Unit on AIDS, Uganda Virus Research Institute, P.O. Box 49, Entebbe, Uganda, Email address: jnbazza@yahoo.com
- 2 Entebbe Hospital, P.O. Box 29, Entebbe, Uganda.
- 3 London School of Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT, UK.
- 4 Makerere University, P.O. Box 7062, Kampala, Uganda.

Background: It is suggested that helminths may be associated with adverse birth outcomes, particularly low birthweight.

Objective: To examine the effect of helminths and their treatment during pregnancy on birthweight.

Methods: A cohort of 2507 women was recruited to a trial of antihelminthic treatment in pregnancy. After providing stool and blood samples, women in the second or third trimester of pregnancy were randomized to receive albendazole or placebo and praziquantel or placebo. Birthweights were recorded.

Results: The prevalence of helminths at enrolment was 68%, including hookworm (45%), *Mansonella perstans* (21%), *Schistosoma mansoni* (18%), *Strongyloides* (12%), *Trichuris* (9%) and *Ascaris* (2%). Data were available for 2335 deliveries which resulted in 2368 births. Birthweight was available for 1964 babies (84%). Mean birthweight was 3.15 kg (sd 0.52) with 8.4% low birthweight (below 2.5 kg). As expected, low birthweight was associated with twins or triplets, maternal HIV and malaria, young maternal age and poor socio-economic status. However, helminth infection showed no association with absolute birthweight (adjusted mean difference in birthweight 0.00 (-0.05, 0.05) kg; $p=1.0$) or low birthweight (adjusted odds ratio 0.85 (0.56, 1.27); $p=0.4$). There was no effect of albendazole or praziquantel on birthweight either in the study group as a whole (for albendazole -0.01 (-0.05, 0.04) kg, $p=0.8$; for praziquantel 0.01 (-0.06, 0.03) kg, $p=0.6$), or in subgroup analyses among women with susceptible species (albendazole among women with hookworm: -0.01 (-0.05, 0.03) kg, $p=0.5$; praziquantel among women with schistosomiasis: 0.06 (-0.04, 0.17) kg, $p=0.2$).

Conclusion: Our results show no evidence of a detrimental effect of helminths, or a beneficial effect of their treatment in pregnancy, in relation to birthweight in a population with light-moderate helminth infection intensity.

ASC07:42 Risk factors for perinatal mortality in Arua regional referral hospital, West Nile, Uganda

Beatrice Akello¹, Elizabeth Nabiwemba¹, Christopher Garimoi Orach¹, Christine Zirabamuzaale¹, Patrick Anguzu²

1. *Makerere University School of Public Health, Department of Community Health and Behavioural Science, Kampala, Uganda*; Correspondence to: Beatrice Akello. Phone 0712830717, E-mail; bakello@numatuganda.org.

2. *Arua Regional Referral Hospital*

Introduction Since the mid 1990s, Uganda has had an estimated 2 million internally displaced persons (IDPs) in the Northern and Eastern districts. A major cause of morbidity and mortality amongst IDP children is protein energy malnutrition.

Objective To estimate the prevalence of and describe the risk factors for protein energy malnutrition among the under five years old children living in internally displaced people's camps in Omoro county, Gulu district.

Methods This was a cross sectional study carried out in internally displaced people's camps, Omoro county, Gulu district during 13th and 23rd September 2006. Anthropometric measurements of 672 children aged 3 – 59 months were undertaken and their caretakers/parents interviewed. The anthropometric measurements were analyzed using z-scores of weight for height (W/H) and height for age (H/A) indices. Qualitative data were collected through 5 focus group discussions, 15 key informant interviews and observation. Data were captured using Epi Data version 3.0 and analyzed using EPI-INFO 6.03 and SPSS 11.0 computer packages.

Results The prevalence of stunting was 52.4% whereas acute malnutrition was 6.0%. Being a male child was a risk factor for stunting Adjusted OR 1.57 95% CI 1.149-2.126; p value=0.004. Children in the age group 3 – 24 months were at risk of acute malnutrition Adjusted OR 2.781 95% CI 1.257-6.153; p value=0.012 while deworming was protective against acute malnutrition Adjusted OR 0.435 95% CI 0.218-0.876; p value=0.018.

Conclusion There is high prevalence of stunting among children in the IDP camps in Omoro county, Gulu district. Male children are at an increased risk of stunting while children in the age group 3 – 24 months are at an increased risk of suffering from acute malnutrition.

ASC07:43 Knowledge, attitudes and practice of midwives towards active management of third stage of labour to preventing post partum haemorrhage: a case study in Mulago hospital

Naamala Allen Mayanja, Nalwadda Gorrette

Makerere University, Department of Nursing, naamallen@yahoo.com Tel: 0712 941455

Introduction: Annually over 500,000 women die as a result of child birth globally, 25-60% of these die due to postpartum hemorrhage. Most of these deaths occur in developing

countries. Maternal mortality ratio in Uganda is 505/100,000 live births. Post partum hemorrhage is a major cause of death and contributes 26% of maternal mortality. Uterine atony is the commonest cause of post partum hemorrhage and can be prevented by using active management of third stage of labor (AMTSL) by 60%.

Objectives: Specifically this study explored knowledge, attitudes, practices and barriers towards AMTSL

Methods: It was a descriptive cross-sectional study design, in which self-administered questionnaires were administered to 117 midwives practicing in 3 labor wards in Mulago hospital and 50 were observed with checklists while carrying out deliveries.

Results: Midwives had fairly good knowledge about AMTSL, 70.9% correctly defined it and 81.2% mentioned its advantage as reduction of blood loss. Surprisingly only 33.3% knew the order of events of AMTSL> among those observed while practicing, only 26% used controlled cord traction and only 26% used pitocin. This indicates that practice of AMTSL was poor. Barriers to practice of AMTSL mentioned included, staff shortage 47.6% fear of placenta retention 36.9% and lack of relevant delivery equipment 36.9%.

Conclusions/ Recommendation: AMTSL is poorly practiced by midwives of Mulago hospital; a task force should be put in place to strengthen practice of AMTSL.

ASC07:44 Factors influencing the utilisation of VCT among Makerere university students

Joyce Barasa

Faculty of Medicine, Makerere University, Jbarasa@med.mak.ac.ug

Introduction: With no cure yet in place ,Prevention of HIV transmission remains key in the fight against the AIDS pandemic. Despite its great role in the prevention of HIV transmission however the extent of VCT utilization was not known. This study therefore assessed factors affecting the utilization of VCT services among Makerere University students.

Objectives: The objectives of the study were to determine the proportion of university students utilizing VCT and identify the factors influencing the utilization of the services The study also assessed health service delivery and community factors influencing the utilization.

Methodology: This was a cross-sectional study, quantitative data was collected from Makerere University students' community. Study population comprised of both male and female students who were residents of different halls. Of the 9 undergraduate halls of residence 6 halls were selected. 312 students were randomly selected, 208 males and 104 female. Pre-tested questionnaires containing both open and closed ended questions were then self administered to the respondents who were guided to complete them. Data collected was analyzed using SPSS programme.

Results: Only (39.1%) of the students were found to utilize VCT services. Knowledge of students about HIV/AIDS and VCT was good. Main source of information was radios(49.3%). 95% of the respondents could mention at least 3 modes of HIV transmission, 75% were willing to test, (96%) knew the importance of VCT and 52% preferred being counseled by a female counselor. (31%) of respondents feared testing. 86.2% perceived services offered as good.

Conclusion: Utilization of VCT services was found to be low despite good knowledge about VCT. Fear of positive results was the major factor affecting VCT utilization.

Recommendations: There is need for more logistic support to health workers to increase VCT outreaches and educational campaigns.

ASC07:45 Knowledge and attitudes of female Makerere university students towards induced abortion for unwanted pregnancy

Hope Mackline, Nalwadda Gorette

Department of Nursing, Faculty of Medicine Macklinehope@yahoo.com,
gnalwadda@gmail.com

Introduction: Induced abortion is a vital reproductive health problem world wide and also in Uganda. About 297,000 induced abortions are performed in Uganda each year and nearly 85,000 women are treated for complications of abortion.

Objectives: Ascertain the knowledge and attitudes of female University students about induced abortion, and to obtain their views on the legal status of induced abortion in Uganda.

Methodology: The study was descriptive and cross-sectional in nature. Data was collected from 230 female Makerere University students and analyzed using SPSS 11.0 program

Results: The majority of respondents (95.6%) were aware of different approaches to prevent unwanted pregnancy including induced abortion (27.0%). Knowledge on induced abortion was high, 63% could correctly define induced abortion, and 81.7% knew complications/effects of induced abortion. Media and home were key sources of information. Abortion was reportedly carried out mainly by doctors (74.8%), nurses (45.2%), self (38.7%), relative (29.1%), herbalist (29.6%) and witch doctors (13.5%). Private clinics and hospitals were the commonest mentioned, as places where abortion is carried out. Methods mentioned for inducing abortion included: drugs (55.7%), local herbs (46.6%), and using metals/sticks (23%). Overall attitudes towards practice of induced abortion were negative. Majority (75.7%) were against government legalizing induced abortion.

Conclusion: Awareness of induced abortion was high but actual information concerning dangers was lacking, however attitude towards induced abortion were negative.

ASC07:46 A randomized clinical trial of two emergency contraceptive pill regimens in a Ugandan population

Josaphat K Byamugisha^{1,2}, Florence M Mirembe¹, Elisabeth Faxelid², Nazarius M Tumwesigye³, Kristina Gemzell-Danielsson⁴

¹ *Makerere University Faculty of Medicine, Dept of Obstetrics and Gynecology, Kampala Uganda*

² *Division of International Health (IHCAR), Dept. of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden*

³ *Department of Epidemiology and Biostatistics, Makerere University School of Public Health, Kampala Uganda*

⁴ *Dept. of Woman and Child Health, Division of Obstetrics and Gynecology, Karolinska Institutet, Stockholm, Sweden*

Background: Recently trials on emergency contraception (EC) have indicated that laevonorgestrel (LNG) used alone has fewer side effects and is more efficacious than the Yuzpe regimen (high dose combined oral contraceptive pills). However, the side effects and acceptability may vary between different groups or societies.

Objective: The primary objective of this study was to determine side effects and acceptability of two emergency contraceptive pill (ECP) regimens among users in Kampala, Uganda.

Study design: Randomized clinical trial.

Methods: Three hundred thirty seven women were enrolled in a double blind randomized clinical trial in Kampala, Uganda. Women requesting ecps within 72 hours after an unprotected sexual intercourse received either laevonorgestrel or the Yuzpe regimen. The women returned for follow up after three days and a follow-up interview was performed after one year.

Results: Laevonorgestrel had significantly fewer side effects than the Yuzpe regimen ($p < 0.001$). There was a significant association between having worries about the method and experiencing the side effects ($p < 0.001$). Both ECP regimens were acceptable for use by the studied women but this could be because most (81%) were prime users of EC. The majority would recommend the ECP regimens for use by other clients.

Conclusions: Levonorgestrel is a superior option to the Yuzpe regimen and should be promoted as the recommended ECP in this population. Having worries about the ecps may influence experience of the side effects. The latter should be explored further.

Key words: Emergency contraceptive pills, levonorgestrel, Ugandan

ASC07:47 Observational study on the effects of the ratio of attending health care providers to women in labour in new Mulago hospital labour ward, Kampala, Uganda.

Asiimwe Denis Douglas

Faculty of Medicine, Makerere University, Kampala, Uganda M.B.Ch.B. IV student.

Introduction: Mulago Hospital is the national referral hospital. The new Mulago labour ward is meant for abnormal labour, however more than half of the pregnant women admitted to this ward go through normal labour. The shortage for health care providers is clearly evident in this labour ward.

Objectives: To determine the ratio of attending doctors to the number of women in need of care in the labour ward. To determine the ratio of the number of attending midwives to the number of women in need for care in the labour ward. To determine the effects of the above ratios on the obstetric care given to women in the labour ward.

Methodology: Observations of activities in labour ward for 2hours/day over a 5 week period. Participation in the activities above. Interviewed the in-charge of the labour ward.

Findings: The ratio of the attending doctor to women was 1:12. The ratio of the attending midwives to women was 1:20 in 24 hours (recommended is 1:3 in 24 hours). The effects of the above shortages included: The partograph is not used to monitor labour, some of the women go through 1st and 2nd stages of labour unattended to, majority of women are attended to after at least 1hour after their arrival to the labour ward and emergency care services are compromised

Conclusions: The ratio of the number of attending health care providers to the number of women in need of this care in the labour ward is much lower than the recommended. This had negative effects on the obstetric care in the new Mulago labour ward.

Keywords: pregnant women, obstetric care, health care providers, abnormal labour.

ASC07:48 The role of media in developing health communication public campaigns for effective national health policy implementation for poverty reduction in Uganda

Wilson Truman Okaka

*Makerere University, Faculty of Arts, Department of Mass Communication, [Kampala-Uganda].
Telephone: [Mobile: 0782-588846] Email:wokaka@arts.mak.ac.ug [or email: nupap2000@yahoo.com]*

Introduction: The health policy implementation is being done in a social, economic, environmental, policy and legal context dominated by poverty and underdevelopment issues. The major stakeholders in the policy implementation drive are: the central government, the districts, local communities, donors, and households. Lack of health policy awareness is responsible for the rising incidents of illnesses, diseases, death and poverty in Uganda.

Objectives” The aim is to discuss the role of the media in health communication campaigns to create, raise, develop and sustain awareness among all the key actors in health policy delivery in Uganda.

Methods: Literature review of relevant theories of communication, national health policy and health sector strategic plan and participatory communication models.

Results: The use of both mass media and interpersonal communication channels provide the maximum audience exposure to the messages for effective health policy implementation among the intended audiences in Uganda

Conclusion: The media plays a key role in health communication campaigns is the foundation for creating, raising, developing and sustaining awareness and education for positive health behaviour change among all the major stakeholders. The campaigns should be theory driven and gender based for effectiveness.

ASC07:49 Coping strategies for ill health among vulnerable house holds in an Urban Setting in Uganda

Christine Nalwadda, Juliet Kiguli, Sheba .N.Gitta, Nazarius .M.Tumwesigye; The Urban Equity Gauge Project's Research Team

*Makerere Institute of Public Health (MUIPH), Makerere University, Kampala, Uganda
Email: cnalwadda@iph.ac.ug*

Background: Programs meant to address the needs of the poor get disproportionately captured by the non poor. Following a baseline survey, an ethnographic study was undertaken to further explore and understand how vulnerable households cope with ill health.

Objectives: To assess how households of different social economic groups cope in event of long-standing and debilitating ill health .

Methods: In-depth interviews with heads of households or their spouses were conducted in Makindye Division Kampala district. All households scoring at least 3 using the vulnerable household index from the quantitative survey were selected. Households were identified using social mapping data from the baseline study.

Results: Malaria was the most prevalent illness, being reported by 20/23 (87.0%) respondents. Generally, children were reported to suffer most illnesses. The most commonly reported chronic illness was hypertension; mainly affecting household heads. Majority of respondents sought care from the formal health care facilities (both public and private) followed by self treatment. Commonest source of money for healthcare was relatives (13/23), closely followed by rent (9/23) and petty trading (5/23). Only 2 persons mentioned membership in 'money go rounds', a form of social network, to manage health care problems.

Conclusion: It was evident that poor households continue to suffer from illness particularly malaria. Vulnerable house hold s generally lack sustainable source of income to cater for health care

Recommendation: Health care providers should avail low cost services targeting the poor and promote sensitization about prevalent diseases.

ASC07:50 Prevalence of impaired glucose tolerance in a rural and an urban population in Kenya

Wanjihia, V.W.¹, Kiplamai, F.K.², Mwaniki, D.L.¹, Christensen, D.L.^{3,5}, Kilonzo, B.W.¹, Tetens, ^{1,4}, Boit, M.K.², Kaduka, L.U.¹, Borch-Johnsen, K⁵, Friis,H³.

1 *Centre for Public Health Research, KEMRI, Nairobi, Kenya, wvanjihia@kemri-nuitm.or.ke*

2 *Department of Exercise, Recreation and Sport Science, Kenyatta University, Nairobi, Kenya*

3 *Institute of Public Health, University of Copenhagen, Copenhagen, Denmark*

4 *Department of Nutrition, Danish Institute for Food and Veterinary Research, Søborg, Denmark*

5 *Steno Diabetes Center, Gentofte, Denmark*

Background: Diabetes Mellitus is a metabolic disorder characterized by chronic hyperglycaemia, arising from a defect in insulin secretion, or insensitivity to its action. Type II Diabetes Mellitus, can be aptly named a "bad food disease" in combination with other lifestyle factors and a susceptible genotype. The adaptation of western lifestyles is known to lead to increasing prevalence of type II diabetes mellitus in Africa. Presence of IGT suggests an early stage of a diabetes epidemic and with the predicted increase in Type II Diabetes, approximately by 50% (from 9.4 million to 14.1 million) between 2001 and 2010, it is possible that a large percentage of the populations, in both rural and urban areas may be in the pre-diabetic stage.

Methods: A cross-sectional comparative survey where the prevalence of IGT was determined in a rural and an urban community in Kenya. A total of 663 subjects, 406 rural (185 men, 221 women) and 257 urban (139 men and 118 women) aged 20-60 years were screened for impaired glucose tolerance (IGT) using the 2-h value after 75 g oral glucose values for whole blood venous glucose concentration according to WHO criteria.

Results: The prevalence of Impaired Glucose Tolerance (IGT) was 5.7% and 7.8% for the rural and urban population respectively. Among the rural populations, it was respectively 4.9% and 5.6% for men and women, while among the urban population; it was 6.4% and 10.8% for men and women respectively. There was a significant difference in the prevalence of IGT among the men (5.2%) and women (7.7%) ($P=0.259$), however the trend indicates a significant positive correlation ($CF=0.204$, $p<0.01$, $n=623$) between age and the prevalence of IGT.

Conclusion: These data indicate a high prevalence of IGT in rural and urban areas, which suggests the presence of pre-diabetes risk factors among the populations studied. However the urban population and the elderly are generally at more risk of type II Diabetes.

ASC07:51 Equity in access to care: Socially vulnerable groups in Northern Uganda.

Asiimwe Denis Douglas¹, Ramullah Namisango Kasozi¹, and Sarah Kiguli²

1. *Makerere University, Faculty of Medicine, students*
2. *Department of Paediatrics and Child Health.*

Introduction: Primary Health Care in Uganda is provided through the Uganda National Minimum Health Care Package. UNMHCP aims to provide essential health care for all. Northern Uganda has been at war for twenty years.

Setting: In 1995 Uganda created internally displaced people (IDP) camps to provide security for the population attacked by the rebel group Lord's Resistance Army. Approximately two million people (85% women and children), live in 144 IDP camps. The difficult living conditions in IDP camps may have a direct effect on health.

Objectives: 1) To determine whether UNMHCP meets IDPs health needs; and 2) To highlight ways how IDPs health needs can be addressed.

Design: Two randomly selected camps were visited. Data were collected through direct observation, key informant discussions, and review of available IDP data.

Findings: The findings were 1) Women and others in IDP camps face a multitude of social problems; 2) IDP camps have inadequate supplies of clean safe water and waste disposal systems; 3) Shelters are small, overcrowded huts; 4) The majority of the > 1,000 Northern Uganda deaths per week occur outside a health facility; and 5) The IDP depend on the World Food Program for sustenance.

Conclusions: UNMHCP does not fully meet the health needs of Northern Uganda's socially vulnerable people. A more effective response requires ramping up services to address the magnitude of the social problems and unmet IDP health needs. Health professional training could empower health service providers to better address Uganda's socially vulnerable groups.

ASC07:52 Accessibility and utilisation of health services for the poor and vulnerable in Uganda: a systematic review of available evidence.

SN Kiwanuka¹, GW Pariyo¹, EK Ekirapa¹, S Peterson^{1,2}, O Okui¹

1. *Makerere University Institute of Public Health, Kampala, Uganda. P.O.Box 7072, kampala, Uganda. Email: ksuxane@yahoo.com.*
2. *Karolinska Institutet, Stockholm, Sweden*

Background: Inequality and inequity in the utilization and access to health care among people belonging to different socio-economic backgrounds has been reported in Uganda. This review paper endeavours to explore what has been reported in published and other unpublished formal studies in Uganda.

Objective: To locate and appraise socio-economic differences in morbidity, access to and utilisation of health care in Uganda.

Method: Systematic review of relevant published and unpublished literature.

Sources: Studies in the English language identified from PubMed, Popline, African Index Medicus and the World Wide Web, grey literature of formal reports from studies done in Uganda by government, bilateral and multi-lateral agencies, and university graduate students and faculty.

Main outcome measures: Information on the distribution of illness, access to- and utilisation of health services for people belonging to different socio-economic and vulnerability groups.

Findings: Forty-eight studies out of 678 identified met the study criteria. The poor and vulnerable experience a greater burden of disease but have poorer access to health care than the non-poor. The barriers to utilisation of health services include shortage of drugs and skilled staff, late referrals, health worker attitude, cost of care, lack of knowledge, distance and poor quality of services. The poor/vulnerable are more affected by user-charges and their abolition in Uganda has largely been perceived as pro-poor.

Conclusion: The poor still experience a greater burden of disease, and have poorer access to health care than the non-poor. Distance to service points, perceived quality of care and availability of drugs are key determinants of utilisation.

ASC07:53 Community perceptions of quality and its influence on the utilization of services delivered

J Kiguli, EK Ekirapa, O Okui, GW Pariyo

Makerere University Institute of Public Health, Kampala, Uganda, Department of Health Policy Planning and Management, 3rd floor Room 327, P.O.Box 7072, kampala, Uganda. Email: Ekky@iph.ac.ug

Introduction: Quality health care is a pre-requisite for everybody. However available research has shown that the quality of services delivered is often not satisfactory. In such circumstances, the poor and vulnerable often suffer more than those who are better off.

Objectives: This study set out to investigate user perceptions, definitions and preferences with regard to quality health care among vulnerable populations.

Methods: The study was done in Iganga and Bushenyi and it was qualitative in nature. Interviews and focus group discussions were held with community members, opinion leaders and health officials. Nudist software was used for data entry and thematic/latent content analysis was used for interpreting the results.

Results: The findings revealed that communities perceive poverty to have both economic and social dimensions linked to deprivation. The ranking of the quality of health care depended on the availability of infrastructure, personnel, supplies as well as good interpersonal relationships. The same factors were reported to affect the quality of services. Different aspects of quality influenced the choice of facilities where they sought care. For severe cases, perceived better quality services were sought from hospitals (PNFP or GOV) while for minor illnesses they went to private facilities, which they also visited because of short waiting times, availability of drugs and polite treatment.

Conclusions: The emerging issues were that improvement of the quality of health services should focus on infrastructure, adequate staff, improvement of staff attitudes and essential drug provision.

ASC07:54 Changes in the utilization of health services among the most poor and those in rural areas.

EK Ekirapa¹, O Okui¹ S Peterson^{1,2}, GW Pariyo¹

1. *Makerere University Institute of Public Health, Kampala, Uganda. Department of Health Policy Planning and Management, 3rd floor Room 327, P.O.Box 7072, Kampala, Uganda. Email: Ekky@iph.ac.ug*
2. *Karolinska Institutet, Stockholm, Sweden*

Introduction: Uganda has implemented a series of health sector reforms to make services more accessible to the entire population of Uganda. An empirical assessment of the likely impact of these reforms is important for informing policy decision making.

Objectives: This study set out to describe the changes in utilization of health services that have occurred among the poor and those in rural areas between 2002/3 and 2005/6.

Methods: Secondary data analysis of the Uganda National Household Surveys (UNHS) 2002/2003 and 2005/2006 was carried out using STATA. Univariate, bivariate and multivariate analysis was done. The poor were identified using an asset based index.

Results: There has been some reduction in the influence of cost and distance, however, they still remain important barriers to seeking health services especially among the most poor and those in the rural areas. For severe illnesses government or PNFP facilities are used. Hospital services are utilised more by the least poor and those in urban areas while government facilities and traditional healers, are utilised more by the most poor.

Conclusions and Recommendations: Cost and distance are important barriers to seeking health services especially among the vulnerable. The most poor and those in rural areas utilise government facilities and traditional healers more, while the least poor and those in urban areas utilise hospital services more. Public private partnerships should be broadened to increase access to quality health services among the vulnerable. Policy makers should consider advocating for targeted subsidies instead of general subsidies. Services in the public sector should be strengthened.

ASC07:55 Private sector contribution towards health. Serenity centre experience in response to alcoholism.

Kalema David

Serenity Centre, P. O. Box 31749 KLa, 0414267580 Mob: 0772481003, serenity@utlonline.co.ug

Introduction: The 2004 global status report on alcohol put Uganda as the country with the highest consumption rate of 19.5 liters per capita. Substance/alcohol abuse is the major factor to the spread of HIV/AIDS. The alcoholic/drug addict is sick person and without intervention often ends in premature death. Realizing that this problem had received inadequate attention, individuals formed and on 1st August 2001 registered as an NGO, Serenity Centre; Uganda's pioneer Alcoholism program.

Objective: The objective of this paper is to highlight the achievements of Serenity Centre

interventions in the last one year.

Methodology: Intervention is divided into 2; Residential Treatment based on the 12 steps Alcoholics Anonymous is supplemented by psychiatric and psychological diagnosis and subsequent treatment which may include; detoxification, one on one, group and cognitive therapy, stress management, life skills and spiritual empowerments. The after care program helps the discharged clients to develop a plan for relapse prevention.

Results: A sample of March 2006 – March 2007 statistics indicated admission of 64 clients: 95% alcoholics and 5% drug addicts. The average admission age is 37; 95% males and 5% females. Of the 96% who completed treatment 67% are sober up to date, of which 13% relapsed but recovered.

Conclusion: Private initiatives need to be supported, to enhance their capacity in dealing with this problem and work for substance abuse free Uganda.

ASC07:56 Motivating the health workforce in the context of decentralized health system

Freddie Ssenooba, Elizeus Rutebemberwa

Makerere University School of Public Health, Email: Ssenooba@iph.ac.ug Tel 0414 509 316

Background: Decentralization is among the major reforms that have unfolded across the globe and in health care delivery systems. Hypothesized benefits include responsiveness and efficiency in decision making, accountability and as a method to build democracy among health service users. The international community trying to scale-up essential interventions grappling with human resource problems aggravated by the incentive environment inherent in decentralized governance systems.

Objectives: Six local government authorities (districts) were the basis of exploring changes in the incentive environment of the health workforce due to decentralization policy. The study findings were generated by triangulating both qualitative and quantitative methods. policy technocrats and health managers were interviewed along with 589 individual health workers from 101 health facilities.

Results: Unlike the old centralized system of direct posting upon graduation, decentralization created a demand-driven recruitment. The District Service Commissions – decentralized structures responsible for human resource planning and management were poorly resourced for the mandate – creating big delays in recruitment processes such as soliciting job adverts, interviews and appointment. An inward-looking ethnic-patronage system had developed and used to screen potential recruits and discriminating against persons born from outside the recruiting district. Workers described a “cage syndrome” a feeling of being trapped into a district system with no institutional arrangements to promotion and career growth. Workers in underserved areas felt particularly underprivileged due to stringent controls against them taking annual or study leave. Performance accountability of health workers to local authorities was an aspect that bred a widely shared (74%) sense of insecurity in the job tenure. Performance judgments were largely divorced from institutional failures such as poor drug budgets and higher workloads or depressed salaries. “Politicking” and “appeasement” to wards local leaders were described as among the major adoptive survival strategy especially among workers with management responsibilities.

Conclusions: The design and strategies to motivate the workforce need to pay attention to decentralized health systems of human resource management.

ASC07:57 Urban health inequalities

Tumwesigye NM, Nalwadda C., Ssengooba F.

Makerere University Institute of Public Health, Kampala Uganda, Contact email: nazari@iph.ac.ug

Introduction: A study was carried out in Makindye division of Kampala city in Uganda in 2006 with one of the objectives being to establish health inequalities in the division. This analysis examines health inequalities in terms of prevalence due to diarrhoea, cough and flue, and perceived malaria fever in the division.

Methods: Six parishes out of twenty were randomly selected. Four zones, two of which were considered poor and other two non-poor, were selected with the help of division technical team. In each zone, twenty-five house holds were selected using a systematic sampling procedure, and the head of household/spouse was interviewed using a structured questionnaire. Some of the questions assessed the assets in each household and they were used to compute a wealth index for each household.

Results: The prevalence of diarrhoea, cough and flue, and perceived malaria fever did not significantly vary by economic status of the zone of residence nor that of individual households. However, among households that had adult patients, cough and flue were significantly more common among poor households compared to non-poor ones.

Conclusion: There is no sufficient evidence to show that health inequalities in regard to morbidity due to malaria fever exist between poor and non-poor households nor between poor and non-poor zones in Makindye division. Researchers need to look into other causes of morbidity to establish health inequalities between poor and non-poor areas and households.

ASC07:58 Inequities in access to health services in an urban setting in Uganda

Christine Nalwadda, Nazarius M.Tumwesigye, The Urban Equity Gauge Project's Research Team

*Makerere Institute of Public Health (MUIPH), Makerere University, Kampala, Uganda
Email: cnalwadda@iph.ac.ug*

Background: All population groups should have equal opportunity to be health. Health inequities are masked problems in urban settings, and are rarely documented due to limited research.

Objectives: To assess and document household responses to ill health among different socio-economic groups, as an entry point for actions towards better targeting of programs to the poor and vulnerable groups in urban settings.

Methods: A baseline survey was conducted in Makindye division where six parishes were randomly selected and 12 poor and 12 non poor zones were purposively selected. Respondents included heads of household or spouses and adult patients.

Results: A total of 603 households from poor and non poor zones were visited. Malaria was reported as the commonest illness among all wealth quintiles followed by cough and flu. Majority (70.5 %) of the households among the poor had a member who fell sick but did not seek care, compared to 36.1% of the households in the highest quintile. The poor did not seeking care due to lack of money while the non-poor did not consider it necessary. Half of the patients among the poor were treated at home, compared to 35.3% of the non poor. Only 46.2% of the patients among the poor visited a health worker compared to 58.8% of the non poor.

Conclusion: There are significant differences in access to health care services between the poor and non poor in the urban setting.

ASC07:59 Comparative wound healing activity of solvent extracts of *Hypericum perforatum* in rabbits

G. Mwebaze, N. Anyama, S. Soans, B. Onegi, G. Kibumba, P. Kutwabami and R.O. Adome

*Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, Uganda;
Email: nanyama@med.mak.ac.ug*

Background: *Hypericum perforatum* L. (Fam. Hypericaceae), a well known herbal remedy is also traditionally applied on wounds to promote healing.

Objective: We investigated the comparative wound-healing potency of ethereal and methanolic leaf extracts of *Hypericum perforatum*.

Methods: 100g of the powdered leaves of *H. perforatum* were separately macerated using 500ml of methanol and diethyl ether, and extracted using a rotary evaporator and soxhlet extractor respectively. Two rabbits each had an area of 5 x 4 cm² of the dorsolateral flanks shaved. Three incisions of length 2cm and depth 2mm were made on each rabbit and the ends of the wounds tapered off using sutures. The wounds were then dressed with the ethereal extract, methanolic extract and normal saline (0.9% NaCl as the control) for five days. Using tracing paper and graph paper, the area of the wound was measured at 2, 4, 24, 48 and 72 hours post-incision and the rate of wound contraction determined.

Results: For the first rabbit, at 4 hours post-incision, the rates of wound contraction for the ethereal extract, methanolic extract and normal saline were 1.75, 1.07 and 0.86 mm²/hr for the first rabbit; and 1, 0.54 and 0.33 mm²/hr at 25 hours. For the second rabbit, at 5 hours post-incision, the rates of wound contraction for the ethereal extract, methanolic extract and normal saline were 2.0, 1.89 and 1.5 mm²/hr for the first rabbit; and 1.08, 0.86 and 0.7 mm²/hr at 15 hours.

Conclusion: The methanolic and ethereal extracts of the leaves of *Hypericum perforatum* showed wound healing properties with the latter having a comparatively higher potency.

ASC07:60 Susceptibility of pathogenic enterobacteria to the methanolic extract of Combretum molle R.Br exG. Don root.

F.K.K. Kimuli, S. Soans, N. Anyama, P.F. Kamba, M. Nassozi, B. Onegi and R.O. Adome

*Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, Uganda;
Email: susan_soans@yahoo.co.in*

Background: Decoctions of the roots of Combretum molle R.Br exG.Don (Fam. Combretaceae) are commonly used to treat diarrhoea and dysentery, albeit with limited scientific evidence.

Objective: We tested the antibacterial activity of the methanolic extract of Combretum molle against Escherichia coli, Shigella dysenteriae and Salmonella typhimurium.

Methods: 450g of the dried roots of Combretum molle were extracted using 1.5 litres of methanol. The extract was dissolved in DMSO and antimicrobial activity of 250mg/ml and 500mg/ml concentrations determined using the agar well diffusion method. Tetracycline (250mg/ml) was used as the positive control and normal saline (0.9% NaCl solution), the negative control. Serial dilutions of the extract were used to establish a minimum inhibitory concentration (MIC) for the test organisms. The lowest inhibitory concentration that showed no growth on solid medium was regarded as the Minimum Bactericidal Concentration (MBC).

Results: The mean diameters of the zones of inhibition for 250mg/ml of the extract against E. coli, S. dysenteriae and S. typhimurium were 16.6mm, 17mm and 15.6 respectively. Doubling the concentration of extract to 500mg/ml increased the zones of inhibition. The positive control, tetracycline 250mg/ml, gave corresponding inhibition diameters of 23.6mm, 53mm and 47.3mm respectively. The MICs for the root extract were 7.81mg/ml, 3.91mg/ml and 15.63mg/ml, and MBCs 15.63mg/ml, 7.81mg/ml and 31.25mg/ml in that order.

Conclusion: Common pathogenic enteric bacteria show susceptibility to the methanolic extract of the roots of Combretum molle in-vitro. The extract was less potent compared to tetracycline.

ASC07:61 What is the basis for use of Ficus natalensis in the treatment of diarrhoeal diseases?

C. Mark, N. Anyama, S. Soans, P.F. Kamba, H. Oria, B. Onegi, P. Kutwabami and R.O. Adome

*Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, Uganda;
Email: nanyama@med.mak.ac.ug*

Background: Diarrhoeal diseases cause considerable morbidity in rural sub-Saharan Africa. The rationale for use of the aqueous extracts of the leaves of the bark cloth fig, Ficus natalensis (Hochst.) Fam Moraceae, in treatment of diarrhoea is unclear.

Objective: This study assessed the antibacterial activity of methanolic and ethereal leaf

extracts of *Ficus natalensis* against *Shigella sonnei*, *Salmonella typhimurium* and *Escherichia coli*.

Methods: 100g of the powdered leaves of *F. natalensis* were macerated using methanol and diethyl ether over four days. Solid extracts were dissolved in DMSO and antimicrobial activity of 100mg/ml against *S. sonnei* (ATCC 25931), *S. typhimurium* (ATCC 13311) and *E. coli* (HTCC 25922) determined using the agar well diffusion assay. Gentamicin (10µg/ml) was used as the positive control and normal saline (0.9% NaCl solution), the negative control. Phytochemical analysis was carried out qualitatively to ascertain the groups of active principles present in the solvent extracts.

Results: Both methanolic and ethereal leaf extracts of *F. natalensis* did not exhibit any antibacterial activity against the test organisms. The diameters of the zones of inhibition of gentamicin against *S. sonnei*, *S. typhimurium* and *E. coli* were 19, 27 and 21mm. Phytochemical studies showed the presence of tannins in the methanolic extract, while alkaloids and anthracenosides were absent in both extracts.

Conclusion: Methanolic and ethereal leaf extracts of *Ficus natalensis* did not exhibit any antibacterial activity. Tannins present in the methanolic leaf extract have astringent activity. This could provide a partial explanation for traditional use of the leaves of this plant in treatment of dysentery and other diarrhoeal diseases.

Key words: In-vitro studies, *Ficus natalensis*, antidiarrhoeal agents, antibacterial agents, phytochemistry

ASC07:62 In-vitro antibacterial activity of an ethereal extract of *Ricinus communis* seeds

B. Mwesigye, N. Anyama, S. Soans, B. Onegi, P.F. Kamba, R.B.D Otto, P. Kutyabami and R.O. Adome

Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, Uganda;
Email: nanyama@med.mak.ac.ug

Background: *Ricinus communis* L. (Fam. Euphorbiaceae), also known as the castor oil plant, is widely used in Uganda for the treatment of burns, bed sores and skin infections.

Objective: This study examined the antibacterial activity of an ethereal extract of the seeds of *Ricinus communis*.

Methods: 600g of the powdered dry seeds of *Ricinus communis* were extracted using ethyl ether. 100mg/ml of the extract was dissolved in DMSO and antibacterial activity against *Staphylococcus aureus* (ATCC 25923), *Escherichia coli* (ATCC 25922) and *Pseudomonas aeruginosa* (ATCC 27853) determined using the agar well diffusion assay. Gentamicin (40mg/ml) was used as the bioactive positive control. Serial dilutions of the extract (100 to 0.39mg/ml) and of gentamicin (40 to 0.078mg/ml) were tested against each of the pathogenic bacteria to establish a minimum inhibitory concentration (MIC) for each micro organism under study.

Results: This ethereal extract showed antibacterial activity with a diameter of inhibition zone of 19mm and MIC 0.39mg/ml against *S. aureus*; 16mm and 1.56mg/ml against *P. aeruginosa* and 20mm and 0.78mg/ml against *E. coli*. The diameters of the zones of inhibition of gentamicin (40mg/ml) against *S. aureus*, *P. aeruginosa* and *E. coli* were 20, 18

and 21mm respectively and the corresponding MICs 0.78mg/ml, 0.156mg/ml and 0.625mg/ml.

Conclusion: The study demonstrated antibacterial activity of the ethereal extract of the seeds of the castor oil plant (*Ricinus communis*) against some common pathogenic bacteria.

ASC07:63 Evaluation of the efficacy of crude powder and the ethanol extracts of *Albisia coraria* and *Psorospermum febringum* in the treatment of skin conditions

Sandra Lanyero, B Onegi and R.O. Adome

Department of Pharmacy Faculty of Medicine, Makerere University, nanyama@med.mak.ac.ug

Background: In Africa, and in Uganda specifically, several plants are used as traditional medicines and as a source of pharmacologically active drugs. Majority of these however have yet to be studied empirically.

Objective: The purpose of the study was to compare the efficacies of the two herbal preparations in the treatment of the different dermatological conditions.

Methods: This study was carried out at Nakifuna Health Centre III for a period of 6 weeks. Two types of ointments were under study; a 5 % crude powder and 5% ethanolic extract ointment of *Albisia coriaria* and *Psorospermum febrifugum*. The crude powder ointment was prepared by pounding and sieving stem bark which was then dispersed in petroleum jelly to make the 5% ointment; the *Albisia* and *Psorospermum* were mixed in the ration of 7:3. The ethanolic extract was prepared by pounding, sieving and soaking the stem bark in 70% ethanol for 5 days. The ethanol was recovered and the dry extracts dispersed in petroleum jelly to make a 5% ointment. A total of thirty patients were recruited; fifteen each were randomized to one of the ointments. Test on patients: Twenty-six (26) patients visiting Nakifuna Health Centre with two proven skin infections of tinea capitis, tinea corporis, eczema and maculo-popular rashes were recruited to the study. Appointments were made for visits to the Health centre on weeks 0, 2 and 4. on each visit patients were counseled on the application of the ointments. Photographs were taken to facilitate visual capturing of any changes in the skin conditions.

Results: Both ointments were found to be most effective in the management of tinea infections, maculo-papular rash and eczema. The crude powder ointment was more effective in the treatment of tinea infections.

Conclusion: There is evident value in the plant species studied.

ASC07:64 A qualitative and quantitative evaluation of prescribing errors in outpatient clinics at assessment centre Mulago hospital

Lubowa Nasser, N. Anyama, Richard Odoi Adome

Department of Pharmacy, Makerere University Faculty of Medicine

Background: A number factors impact on treatment failure. Poor prescribing is among them. Prescribing errors result into inadequate treatment, drug resistance, increased medical costs, morbidity and mortality. In developed countries like USA, It is estimated that 2% of inpatients are harmed by medication errors.

Objective: The purpose of this work was to identify common prescribing errors and their causes in out patient clinics, assessment centre, Mulago hospital.

Methods: This was a cross-sectional study/descriptive survey method on evaluation of prescribing errors in out patient clinics, assessment centre, Mulago hospital. Primary data was collected by filling 60 patient questionnaires, 38 health worker questionnaires and reviewing 175 prescription forms at the Out patient clinics, Assessment Centre, Mulago National Referral and Teaching Hospital.

Results: Sources of nonprescription drugs were mainly clinics (51%) and pharmacies (45%). Most patients claim to buy full course of treatment (63%) for prescribed drugs. Factors that determine the quantity of medicines bought include amount of money (62%), severity (16%) by illness and instructions by health worker (23%). Most patients spent 5-6 minutes with the prescriber. In general the following were noticed; About 60% had the wrong dosage strength, about 10% had the wrong dosage frequency, about 3% had wrong drugs prescribed for a given condition and only one prescription form had drugs prescribed in wrong dosage form.

Conclusion: Overall there was a strong indication of poor prescription that require immediate attention

Key words: prescription writing drug misuse, hospital

ASC07:65 Barriers to effective communication during the dispenser-patient interaction in Mulago outpatient pharmacies

H. Natukunda, P. Kutyabami, F. Kitutu, N. Anyama and R.O. Adome

*Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, Uganda;
Email: pkutyabami@med.mak.ac.ug*

Background: A critical component of dispensing is the communication of drug-related information to the patient. This communication process may be obstructed by a number of factors resulting in patients' failure to comprehend the information necessary for appropriate drug use.

Objective: The aim of this study was to determine the barriers to effective communication between dispensing staff and patients.

Methods: A cross-sectional study involving 110 observations of the dispensing process and

interviews with 20 dispensing staff and 110 patients. Frequencies of communication barriers were determined.

Results: Majority of the patients had a low education level (primary and below, 50%) and most were females (87%). The dispensing staff were mostly male (75%) with education level of diploma holder and below (60%). Factors identified as communication barriers were of three categories, [1] staff-related factors: language barrier (85%), time constraint (30%) and poor communication skills (25%); [2] patient-oriented factors: poor education background (40%), poor patient attitudes, which included lack of cooperation and mistrust (30%), patient's disease state (25%) and patient's economic state (25%); and [3] administrative factors: heavy workload (95%), lack of drugs (55%), and lack of privacy and other design factors that created physical barriers (45%).

Conclusion: Several barriers were noted to impede effective communication during the dispensing process. These need to be addressed in order to improve patients' comprehension of drug-related information.

Key words: dispensing, communication barriers, medicine use

ASC07:66 Assessment of the patterns of self medication in community pharmacies in Kampala

G. Osinde, P. Kutuyabami, F. E. Kitutu, G. Kibumba, R. O. Adome

Department of Pharmacy, Faculty of Medicine, Makerere University, kitutufred@gmail.com

Introduction: Self medication is when individuals function in their own behalf regarding health promotion, decision making, prevention, detection and treatment of self recognized illnesses or symptoms with or without professional assistance. Self medication is on the increase and yet sometimes it leads to poor or even hazardous self care decisions.

Objective: To assess the patterns of self medication in community pharmacies in Kampala; with particular interest in the commonly treated illnesses, the medications used, and the sources of drug use information.

Methods: It was a descriptive cross-sectional study. Pre-tested, structured questionnaires were administered to 250 respondents drawn randomly from five community pharmacies in Kampala.

Results: Fifty five percent of the respondents were male (n=244). Majority (62% n=244) of the clients seeking self medication in the community pharmacies were aged between 21 to 40 years. Over 60% of the respondents had achieved up to tertiary level of education. Twenty nine percent of respondents were acting on behalf of the patients. Antibiotics were the most used drugs (21% n=244) and antipsychotics were least used (1% n=244). Other drugs included analgesics (16%), antimalarials (8%), antifungals (8%). The commonly treated illnesses were respiratory tract infections (24%), gastrointestinal infections (18%), and malaria fever (12%). Friends/colleagues were the major source of drug use information (30% n=244). Also 23% of the clients obtained there drug use information from doctors. Others got it from their experience with previous medication (23%), and other medical personnel (12%).

Conclusion: Self medication is mostly done by the educated people, who use antibiotics most of the time and their major source of drug use information are friends and colleagues.

ASC07:67 Antibacterial activity of a crude ethanolic extract of the leaves of *Tetradenia riparia* (Hochst.) Codd

R. Kagalama, S. Soans, N. Anyama, H. Oria, R.B.D. Otto, B. Onegi and R.O. Adome

Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, UGANDA; Email: susan_soans@yahoo.co.in

Background: The musk bush, *Tetradenia riparia*, (Hochst.) Codd Fam. Lamiaceae, is a relatively common drug in herbal medicine, chiefly used for treatment of respiratory problems, stomach-aches, diarrhoea and malaria.

Objective: The purpose of this study was to evaluate the activity of *Tetradenia riparia* against common respiratory tract pathogenic bacteria.

Methods: 750mls of 99% ethanol were used to macerate 278g of the dried leaves of *Tetradenia riparia*. A concentration of 50mg/ml of the extract was prepared by dissolving in DMSO and antibacterial activity against *Streptococcus pneumoniae* (INV104B), *Streptococcus pyogenes* SF370 (M1) and *Haemophilus influenza* (F3031) determined using the agar well diffusion method. Ampicillin (0.5mg/ml) was used as the positive control. The tube dilution method was used to establish a minimum inhibitory concentration (MIC) for each of the test organisms. The test tubes that showed no visual growth were sub cultured to determine the lowest concentration that showed no growth on solid medium, the Minimum Bactericidal Concentration (MBC).

Results: The ranges of the diameters of the zones of inhibition for 50g/ml of the extract against laboratory strains of *S. pneumoniae*, *S. pyogenes* and *H. influenza* were 21 to 22.5mm, 12.5 to 14mm and 14 to 15mm respectively. 50mg/ml of ampicillin gave corresponding inhibition diameters of 29 to 30mm, 31 to 32mm and 36 to 38mm respectively. The MICs of the leaf extract were 390.25µg/ml, 781.25µg/ml and 781.25µg/ml, and MBCs 781.25µg/ml, 6250.00µg/ml and 3215.00µg/ml in that order.

Conclusion: The ethanolic extract of *Tetradenia riparia*, shows antibacterial activity against common respiratory pathogens although this activity appears to be less than that of ampicillin.

Key words: *Tetradenia riparia*, antibacterial agents, respiratory pathogens, in-vitro

ASC07:68 Lactose intolerance among severely malnourished children with diarrhoea admitted to the nutrition unit, Mulago hospital

Richard Nyeko, Israel Kalyesubula, Hanifa Bachou and Edison Mworoz

Department of Paediatrics and Child health, Mekerere University Medical School, Email: rnyeko@med.mak.ac.ug; phone 0712 494046

Background: Lactose intolerance, a common complication of diarrhoea in infants is more frequent and severe in children with malnutrition leading to an increased risk of treatment failure and death. The standard management of severely malnourished children involves the use of lactose-based high energy milk; however, some of these children may be lactose

intolerant thus contributing to the high rate of unfavorable treatment outcome.

Objective: To determine the prevalence and factors associated with lactose intolerance among severely malnourished children with diarrhoea aged 3-60 months admitted to Mulago hospital nutrition unit.

Methods: A descriptive cross sectional study involving 196 severely malnourished children with diarrhoea was carried out in the nutrition unit. Clinical and laboratory characteristics were determined at enrollment. Stool pH and reducing substances were used to document evidence of lactose intolerance.

Results: The proportion of severely malnourished children with lactose intolerance was 50/196 [25.5%], and it occurred more commonly in children with kwashiorkor 27/75 (36.0%) than marasmic-kwashiorkor 6/25 (24.0%) and marasmus 17/96 (17.7%). Factors independently predicting lactose intolerance were; oedematous malnutrition ($p=0.032$), perianal excoriation ($p=0.044$), high mean stool frequency ($p<0.001$) and >2 diarrhoea episodes in the previous 3 months ($p=0.007$).

Conclusions: The prevalence of lactose intolerance in this study of 25.5% is high. The factors independently associated with lactose intolerance were oedematous malnutrition, perianal excoriation, higher stool frequency and having >2 diarrhoea episodes in the previous 3 months. We recommend that routine stool pH and reducing substances should be performed in severely malnourished children with diarrhoea for appropriate management.

ASC07:69 The Effect of cooked matooke/soybean/sesame composite flour in rehabilitation of severely malnourished children aged 6-59 months in Uganda

M. Kanyago¹, F. Isabirye Muranga¹, F. Nabugoomu², J.M. Ntambi³, J.T. Kakitahi⁴
and E. K. Kiboneka⁵

1. Department of Food science and Technology, Makerere University, P. O. Box 7062 Kampala, Uganda
2. Department of Mathematics, Makerere University, P.O Box 7062 Kampala, Uganda
3. Department of Biochemistry and of Nutritional Sciences, University Of Wisconsin-Madison USA
4. Institute Of Public Health, Medical School Makerere, University P. O Box 7062 Kampala, email: jtkakitahi@msn.com
5. Mwanamugimu Nutrition Unit Mulago Hospital, P. O Box 7072 Kampala, Uganda

Objective: The study aim was to test the adequacy of a matooke/soybean/sesame flour formulation as a weaning food on malnourished children on catch-up growth.

Methods: 100 severely malnourished children admitted at Mwanamugimu Nutrition Unit Mulago hospital, Kampala, Uganda, where randomly allocated to either the instant matooke based composite flour diet (test) group or the traditional Mwanamugimu dietary regime (control) group. Blood samples were taken during recruitment and before discharge for testing serum albumin, ferritin and retinol levels.

Results: The results revealed significantly ($P<0.05$) higher energy and protein intakes for porridge in the instant matooke based composite flour (test) diet, significantly ($P<0.05$) higher protein intake for kitoobero in the Mwanamugimu dietary regime (control) diet but energy intake for kitoobero and energy and protein intakes for HEM was comparable between both groups. They also reveal a significantly ($p<0.05$) higher weight gain, and no significant difference in serum albumin, ferritin and retinol values between the test and

control groups.

Conclusion: The results confirm that the optimized matooke/soybean/sesame composite flour formulation was adequate as a weaning food and that matooke flour can be used as a vehicle food for malnutrition intervention.

Key Words: Matooke; Optimization; Malnourished;

ASC07:70 Household food security: Implications for policy and action for food secure households with malnourished under fives.

Elizabeth Echoka

Centre for Public Health Research, Kenya Medical Research Institute echoka@kemri-nuitm.or.ke

Background: Childhood malnutrition still remains a major public health concern in the developing world. Food security is a key determinant to nutritional security, however there are households that are food secure but still experience malnutrition.

Objective: The study was undertaken to establish barriers to child nutrition security in food secure households.

Methods: A cross-sectional study was conducted in Mjini village in Bungoma. A representative sample of 170 food secure households with children aged 6-59 months was selected using multi stage sampling. Data was collected using an interview schedule, anthropometry, observation checklist and FGD. Bivariate analysis using Pearson's chi-square and binary logistic regression analysis was used in data analysis.

Results: The following were found to threaten children's nutritional security in food secure households. Lack of knowledge on frequency of feeding (60% vs. 38%, $p=0.016$, $OR=2.5$), and on the 3 major foods groups (52% vs. 25.6%, $p=0.006$, $OR=3.13$), inadequate breastfeeding (48% vs. 13%, $p=0.008$, $OR=6.2$), untimely weaning (74% vs. 44%, $p=0.001$, $OR=3.6$), feeding <3 times (59% vs. 35%, $p=0.009$, $OR=2.2$), lack of stimulation when feeding child (47% vs. 18%, $p=0.001$, $OR=4$), lack of deworming (90% vs. 75%, $p=0.004$, $OR=2.9$), poor environmental sanitation (79% vs. 44%, $p=0.001$, $OR=4.9$), storing cooked food uncovered (74% vs. 18%, $p=0.001$, $OR=6.8$), feeding child with dirty hands (59% vs. 18%, $p=0.001$, $OR=6.4$) and diarrheal morbidity.

Conclusion: Food security alone is insufficient to assure nutrition security and may have a limited effect on the nutritional well being of underfives. Proper and sustained education of caregivers on infant and young child feeding practices through a multifaceted intervention programme dealing with behavior/ attitude change and redesign of nutrition education are recommended.

ASC07:71 Current nutrition problem in Kenyan society

Mary Wanja Ngugi¹, J.N. Muthotho², Njenga Njoroge³

1. *Nutrition and Health Program, King Baudouin Foundation (Kenya), P.O. Box 3944, Nakuru. Tel: 0720-891128, healthpro99@yahoo.com*
2. *Kenya Medical Research Institute, P.O. Box 54840, Nairobi, Kenya*
3. *Life Springs Counseling Services. P. O. Box 3944, Nakuru*

Introduction: The current daily meals for all Kenyans is creating many medical nutrition problems. For people of 35 years old, mental fatigue, back ache, joint muscle pains, swollen joint (arthritis like) Neuropathy have become major clinical presentation. Current meals lack Zinc, Selenium, manganese, Magnesium, Calcium, Copper, Vitamins A and B and essential amino acids. This is due to over cooking and high use of polished grains.

Methods: Nutrition health clinics were started in 2001. All patients over 35 years old suffering form mental Fatigue, general muscle pain, Swollen joints (arthritis like) Neuropathy, indigestion - Loss of appetite and recurrent itchy skin condition were enrolled in programs. Locally available foods rich in Zinc, Selenium, manganese, Copper, Vitamins A, B and other essential amino acids were incorporated in daily meals for the family. Breakfast, lunch or supper Forms to monitor clinical changes and BMI were used for a number of months. Artificial micro-nutrients were used for serious cases but later changed to natural diet supplying the same.

Results: Most patients who were registered had been on conventional drugs. Regular intake of porridge rich in Micro - Nutrients; - Zinc, Selenium, Vitamins A,B,C and K and Magnesium were seen to improve conditions of joint plans, lethargy and neuropathy, in our elderly clients. It is also proved highly effective in reducing micronutrient deficiencies as well as improving vitality.

For those who were suffering form skin conditions the rate at which healing of the skin was remarkably faster when put on this natural regimens.

Conclusion: Our study shows that the above current medical problems facing Kenyan society can easily be controlled by people feeding on food rich in Zinc, Selenium, Vitamins A,B,C and K and Manganese, Magnesium, Copper, Vitamins A and B and essential amino acids. Polished foods are not good for low resource countries.

ASC07:72 Knowledge, attitudes and practices of qualified nurses of Mulago hospital complex regarding continuing nursing education (CNE)

Oyang Benard, Charles Peter Osingada

Makerere University, Department of Nursing,, boyang@med.mak.ac.ug

Introduction: The rapid changes currently taking place within the health care system have increased pressure from professional bodies and the general public for nurses to engage in continuing education (CE) to ensure quality health care delivery to patients and to safeguard the public.

Objectives: To determine the knowledge, attitudes, and practices of staff nurses of Mulago hospital regarding CNE, and to determine the availability of CE programmes for them.

Methods: A descriptive cross-sectional study employing quantitative methods of data collection was used. A total of 180 self-administered standardized structured questionnaires were distributed to conveniently sampled qualified nurses working within the various departments of the hospital; 165 completed questionnaires were used for data analysis.

Results: Majority of nurses at the hospital are aware of the requirement for CNE and hold positive attitudes towards such programmes. However, they face numerous challenges in their attempts to access such programmes, most of which arise from institutional factors

(e.g., local CE policies), professional factors (e.g., staff position), and personal factors (e.g., cost, time). Availability of CE programmes also demonstrated a significant effect on their participation. Nurses indicated a variety of learning needs, including use of computer, new drug therapies, patient care services, and communication skills among others.

Conclusion: Staff nurses have an unlimited desire for CE. Meeting their learning needs by use of appropriate CE delivery methods, in addition to motivation, would certainly enhance their participation despite the numerous challenges they face in accessing CE programmes. However, further studies to explore reasons for inadequate participation and negative attitudes that some nurses hold towards CE is recommended.

ASC07:73 Publication rates of Master of medicine research projects in Makerere University, Uganda.

Muron Julius, Kalungi Sam, Bimenya Gabriel, Katabira Elly

Department of Psychiatry, Makerere University, P.O. Box 7072, Kampala. Fax: 256-41-504760, E-mail: juliusmuron@yahoo.co.uk

Introduction: Presentation of research findings to the wider community and for peer review is an ethical obligation in research. The Master of Medicine training requires completion of a research project. Most of these investigators justify the study by aiming to influence medical planning and practice.

Objectives: The aim of this study was to estimate the publication rates, examine the factors limiting the publication of Master of Medicine research projects of Makerere University.

Methods: The Dissertations of Master of Medicine graduates submitted to Makerere University from 1993-2003 were examined by use of a standardized questionnaire administered either by telephone interview or interviewing respondents physically. Data was analyzed on SPSS, Pearson Chi-Square was used to compare categorical variables. P-Value of $P < 0.05$ was the set standard for significant difference.

Results: Principle investigators of 102 dissertations participated in the study and 23.5% had published their research findings in International Journals while 20.6% could be cited on internet. 39.2% had presented the research findings in international conferences, and only 9.8% were certain that the research had contributed to practice guidelines. Lack of guidance, lack of time, no motivation, lack of money and lack of interest were cited as limiting factors. The factors significantly correlated with Journal publication were study design ($P = 0.014$) and conference presentation ($P = 0.028$).

Conclusion: The rates of communication of Master of Medicine research findings submitted to Makerere University to wider community is very low. As a result such findings are not peer reviewed and contribute less to medical interventions. The Makerere University Medical Research Ethics Committee needs to get more involved in this final stage of research protocol.

ASC07:74 Infectious diseases institute laboratory training program: a model for developing a training curriculum

Alex Ogwal, Priscilla Aquilla Omwangangye, Gisela Schneider

Infectious Diseases Institute, Faculty of Medicine, Makerere University, P.O Box 22418, Kampala, Uganda. Tel; +256-772-370490; Email: aogwal@idi.co.ug

Introduction: In service training is essential in developing and sustaining capacity of healthcare professionals. This can be achieved when training programmes aim at improving participants' knowledge, attitudes and skills in a particular area that is directly related to essential competencies required of health workers in performing their responsibilities and tasks. Unfortunately most in service training is undertaken without proper curricula. Conceivably, this compromises quality and standards in training outcomes.

Objective: To document the process aimed at developing a comprehensive laboratory training curriculum based on a novel skill oriented course with participation of stakeholders.

Methods: In developing and implementing a laboratory training program at the Infectious Diseases Institute, a stakeholder participatory process was employed. This included identification of stakeholders and training needs through a desk review and stakeholder interviews and participatory processes. Course aims, objectives and content was jointly developed and reviewed by stakeholders. The curriculum was reviewed and piloted.

Results: A comprehensive laboratory training curriculum on HIV/ART laboratory management was developed and piloted. A novel skill based course organization was designed that allows team building between laboratory personnel and other health workers. A rigorous monitoring and evaluation system was designed.

Conclusions: Full participation of stakeholders in the overall process of curriculum development is crucial in designing effective health training programmes which maximizes utilization of limited resources and avoids duplication. Innovative training approaches in course design and implementation involving team building among health workers provide opportunities for informing and reforming healthcare systems.

ASC07:75 The opinions of the second year Problem Based Learning (PBL) students at Makerere University Faculty of Medicine (MUFOM) on Community Based Education and Services (COBES) (July-September 2004) relevance in allowing students to appreciate Primary Health Care (PHC).

C. Nakanwagi¹, R.N. Kasozi¹, and S. Kiguli²

1. *Makerere University Faculty of Medicine students*

2. *Department of Paediatrics and Child Health, Makerere University, Kampala, Uganda.*

Introduction: The Uganda National Minimum Health Care Package (UNMHCP) is a government policy that aims at implementing PHC in Uganda, with the intention of providing essential health care for all, with special attention directed to women and children. COBES is a new innovation in the PBL curriculum that allows students to appreciate

UNMHCP. Thus COBES enables students to learn, observe, and participate in health service delivery in the various districts of the country.

Methods: From July to September 2004, the first year PBL students (now 2nd year students), were assigned to suitable sites in different districts of the country to fulfill their COBES requirements. During that time, students continued with the PBL learning process while at the same time participating in outreach programs, appreciating principles of epidemiology, and understanding the health care service delivery system in the country at their respective COBES sites.

Objectives: (1) To determine how students felt the UNMHCP addressed PHC at the different COBES sites in Uganda. (2) To determine how students felt the UNMHCP addressed women's health issues in practice at the different COBES sites in Uganda.

Design: Questionnaires were randomly distributed to the 2nd year PBL students. Also, focus group discussions were held to validate the content of the questionnaires.

Results: In general, students rated the implementation of the twelve elements of the UNMHCP at their respective sites highly in the questionnaire. In particular, with the use of the Likert Scale, the highest rated elements were immunization (4.51 ± 1.11) and control of communicable diseases (3.90 ± 0.99). Regarding the focus groups, most discussants complemented the Government's effort in implementing PHC through the Package, which was strongly reflected in the frequent immunization practice. As regards to women health issues, family planning (4.14 ± 1.07) and safe motherhood (3.90 ± 0.82) scored highly. The focus group discussants slightly agreed that women's health issues were being addressed at their sites, claiming that more effort was still required.

Conclusion: In general, students felt that their respective COBES sites have made an effort to implement the UNMCHP. However, some elements of the Package are not in practice in some sites due to limited resources. Furthermore, though UNMCHP in theory addresses women's health issues, more effort must be made to put it into practice at the various COBES sites.

ASC07:76 The clerkship years of the Problem Based Learning (PBL) curriculum at the Faculty of Medicine, Makerere University, Kampala, Uganda.

Harriet Nankabirwa¹, Ramullah Namisango Kasozi¹, Sarah Kiguli²

1. *Makerere University Faculty of Medicine, students*
2. *Makerere University, Faculty of Medicine, Department of Paediatrics*

Introduction: Makerere University Faculty of Medicine, which was started approximately 85 years ago, was operating on a lecture system of training undergraduate medical students. In 2003, the school changed its mode of training and adopted the new curriculum, problem based learning (PBL).

Context: In August 2006, the pioneers of the PBL curriculum (currently 4th year medical students) commenced their junior clerkship. This clerkship is unique in that it used to be offered in the 3rd year of study (under the lecture system), but with PBL it starts a year later. As such, there were many skeptics from the various teaching hospitals about our medical and clinical competencies as PBL students.

Objective: To describe our experience as pioneer clerkship students in the PBL curriculum.

Description: As students, we were excited to be clinical students but at the same time afraid because there was negative feedback about the curriculum and its capacity to produce competent doctors. Some of the criticisms came from various physicians from the training hospitals and from the medical council of the country. As such, we tighten our belts and stormed in the wards with braveness in an effort to challenge the negative attitude against us. Fortunately, the clinical exposure and community based education services (COBES) course units (which we had done for the past 3 years) had prepared us for clerkship. Interestingly, when we worked on ward many health professionals were surprised at our knowledge, enthusiasm, and professionalism while interacting with the patients. Thus, we proved that PBL did prepare us well for our junior clerkship. However, the assessment of our junior clerkship was based on the lecture system of examination instead of a PBL type of assessment.

Recommendations: Increase timely communications between Faculty of Medicine and teaching hospitals regarding the training of PBL students during the clerkship years and their assessment. Faculty of Medicine should train the physicians about the PBL curriculum.

Keywords: Clinical training, curriculum and course development

ASC07:77 The effectiveness of the Problem Based Learning (PBL) curriculum to the first year medical students at Makerere University Faculty of Medicine (MUFOM)

Ramullah Namisango Kasozi¹, Catherine Nakanwagi², Sarah Kiguli³

1. *Makerere University Faculty of Medicine, students*
2. *Makerere University, Faculty of Medicine, Department of Paediatrics*

Introduction: To respond to the need of promoting excellence in health service delivery, education, and training, there was a call for the transformation of health professionals' education and training through the application of innovative educational method. In the Academic Year of 2003/2004, the new PBL curriculum was implemented with the incoming first year students. Previous literature search has not revealed a study on the opinions of first year students on a PBL curriculum. It is the view of the authors that the effectiveness of PBL is dependant upon the students' opinions about the intended outcomes of PBL, the tutors' performance, and their assessment of their interpersonal skills while in PBL. As such, it is important that students outlook towards PBL is positive.

Objective: To determine the opinions of the first year medical students about the effectiveness of the PBL method of learning.

Methods: Questionnaires were administered to the first year PBL medical students in May and June of 2004. Five point Likert Scale was used to rate the intended outcomes of PBL and tutors' performance. Students rated their interpersonal skills using an ordinal scale. Open-ended questions were asked. Questionnaires were collected and submitted to the Publications Department. SPSS 11 for Windows was used for statistical analysis.

Results: Response rate was 67 out 100. Students rated highly the facilitation of communications skills (mean score of 4.28 ± 0.98 SD), student-directed learning (SDL)

(4.15±1.17 SD) as main outcomes of PBL and the tutors' ability to create a supportive group climate in the tutorial session (3.81±1.15 SD). They agreed that there was an improvement in their communication skills (4.27±0.71 SD) and felt strongly that working in tutorial groups was effective for their learning (4.24±0.82 SD). There is a strong correlation with the opinions of the students' views regarding the intended outcomes of PBL, tutors' performance, and the development of the students interpersonal skills and effectiveness of PBL. Students rated PBL effectiveness highly. They approved that SDL and facilitation of communication skills are key outcomes.

Conclusion: MUFOM should consider intensive staff development programs with the objective of improving current tutor's facilitation skills. Considering that students felt strongly that working in tutorial groups was effective for their learning and that their communication skills had improved, the enhancement of interpersonal skills are key to the effectiveness of PBL. Due to the positive opinions of the PBL curriculum in this study, such feedback is essential for the success of this educational program at MUFOM.

ASC07:78 Adherence at a regular ART clinic is associated with improved patients survival

Andrew Abaasa, Jim Todd, Symon Wandiembe, Emmanuel Odeke, Charles Karamagi

Background: Poor adherence to HIV antiretroviral therapy (ART) may result in treatment failure and influence disease progression. Most reports of adherence come from studies where special efforts are made to provide ART under ideal conditions, but there are few reports of impact of non-adherence from regular clinics in developing countries.

Objective: To assess adherence to ART and its effect on survival in a regular TASO clinic in Kampala, Uganda.

Methods: Retrospective adherence data on 850 patients initiating ART between May 2004 and December 2006 were retrieved. Adherence was assessed using a combination of self-report and pill count methods. Patients who took ≤ 95% of their regimens were classified as non-adherent. Kaplan-Meier curves and Cox proportional hazard regression model were used in analysis.

Results: Of the 7,518 adherence assessments that were made, 6,241 (83 %) showed adherence over 95%. Furthermore, 659 (77.5%) patients showed an average adherence of > 95%. The crude death rate was 11.9 deaths/100 person-years, with a rate of 43.5/100 person-years for non-adherent patients compared to 5.6/100 person-years for adherent patients. In multivariate analysis, we adjusted for education level, CD4 count of < 50 cells/mm³ at ART initiation, and non-adherence showed a significantly higher mortality ratio (HR=4; 95% CI: 2.07-8.06).

Conclusions: Regular ART clinics have the potential of ensuring high levels of adherence to ART and improved patient survival and should be facilitated to provide quality ART services.

ASC07:79 External quality assurance of *M tuberculosis* drug susceptibility testing. Results from the 2006 round of the Stockholm Supra National Reference Laboratory sub-network.

M. Haile, L.Klintz, S.Hoffner

1Swedish Institute for Infectious Disease Control, Department of Bacteriology, S-171 82 Solna.

Background: In 1994, the WHO initiated a network of selected National Reference Laboratories (NRL) to support and improve the quality of TB laboratories globally, especially in drug susceptibility testing (DST). Since then the Supranational Reference Laboratory Network (SRLN) has participated in yearly proficiency testing, as well as has additionally offered, and organised such testing for the neighbouring countries NRL. Today, this network comprises 25 laboratories located in all five WHO regions. It is coordinated by the Prince Léopold Institute of Tropical Medicine in Antwerp, Belgium, which sends a panel of 30 coded well-characterised isolates for susceptibility testing of the following four first-line drugs - Isoniazid (INH), Streptomycin (SM), Rifampicin (RMP) and Ethambutol (EMB). In 2006 a 20-strain panel (based on the 30-strain WHO panel) was established by the SRL in Stockholm and distributed to nine European reference laboratories (in Denmark, Estonia, Finland, Latvia, Lithuania, Norway and Romania). Moreover five Swedish clinical TB – laboratories conducting DST of *M tuberculosis* were included in this external quality assurance (EQA) network.

Results: Results from this proficiency test study for Streptomycin showed 90,8% sensitivity (ability to detect true R), 97,5% specificity (ability to detect true S) and 94,5% efficiency (number of correct results divided by total number of results). Corresponding figures for Isoniazid were 99,4%, 89,1% and 95,3%, for Rifampicin 98%, 94% and 96%, for Etambutol 82%, 100%, and 94%, respectively. Six of the participating laboratories used the MGIT 960 method, four laboratories used the radiometric Bactec 460 system, and the remaining four laboratories used the proportion method on solid medium.

Conclusion: The laboratory determination of drug resistance of *M tuberculosis* in the laboratories included in this network is reliable and trustworthy. Since the start of the EQA programme, significant progress in the quality of, and an increased standardisation of the DST, have been obtained. Participation in an EQA programme is a good way to obtain, document and maintain high-quality results of drug susceptibility testing, and should be promoted generally in national TB control programmes.

ASC07:80 Recurrent scalded skin syndrome by exfoliative staphylococcus aureus and high usage of steroids – health problems for HIV/AIDS and non HIV/AIDS people in Kenya

J.N. Muthotho¹, Njenga Njoroge²

1. *Kenya Medical Research Institute, P.O BOX 54840 Nairobi, Kenya. King, Baudoium Foundation, P.O Box 3944 Nakuru,*
2. *Society for Women Living with Aids-Kenya Nakuru Provincial Hospital*

Introduction: Skin infection due to opportunistic pathogens has become a major problem to HIV, AIDS and non- HIV/AIDS people in Kenya as HIV prevalence keeps rising in the world. It represents as recurrent itchy rashes. It mimics various dermatology conditions (eg. Cellulites, acne etc), allergy and asthma like conditions. This has resulted to high use of steroids, antibiotics and anti fungal without success. The immuno suppression effect of steroids could be worsening these conditions on HIV/AIDS patients. A collaborative community based programme was initiated by infection Control Association of Kenya (ICAK) and NGPS taking care of the sick to investigate causative agents, control antibiotics and steroids / anti fungal high usage, by giving health providers effective alternative.

Method: Itchy cases attending skinclinics were investigated. Chlorhexidine, cetrimide, chlorhexidine,+ Cetrimide, Benzalkoniumchloride, providone iodine, were tested for bacteria / fungal inhibition. Isolates were identified. Various locally available antiseptics were tried on patients with bacterial infection to eliminate the bacteria and itching and development of normal skin was monitored for three years. Steroids / antibiotics and anti fungal were withdrawn.

Results: Pure growth of Exfoliative Staphylococcus aureus was isolated from 80% of recurrent itchy cases while normal skin mixed growth of skin normal flora were isolated. This strain produces Exfoliative toxins A,B and epidermolytic toxins which cause scalded skin syndrome and itching conditions. The ointment, which is composed of chlorhexidine gluconate and cetrimide, liquid paraffin and petroleum jelly was able to control itching while others did not control itching, eliminate the Exfoliative Staphylococcus Aureus and prevent deformation of the skin. The use of this has drastically reduced the suffering of patients and use of steroids and antibiotics.

Conclusion: The use of this very low concentration of chlorhexidine/ cetrimide ointment by NGOs, (Church Health providers MSFS- Belgium – Spain – France) has drastically reduced the suffering of patients, reduced use of topical steroids, antibiotics and anti fungal. This antiseptic has become the most effective treatments for these patients who have been on conventional drugs without response.

ASC07:81 Knowledge, attitude and practice of HIV post exposure prophylaxis among health care workers in Kampala, Uganda.

Olweny James Okoth, Kamba Pakoyo Fadhuru, Fred Kitutu, R. O. Adome

Department of Pharmacy, Faculty of Medicine Makerere University

Background: Post exposure prophylaxis (PEP) against HIV is relatively new and still not widespread within our health systems. This poses extreme difficulties for health workers who have to deal with large number of people living with HIV/AIDS health and yet it remains the only option to health care worker once exposed during their work. PEP should be initiated immediately and not exceeding 72 hours after exposure.

Methods: The study was cross-sectional in design. Stratified and proportionate random sampling was used. Obtained data using pre-tested semi- structured questionnaires, key informant interviews and observation guide was analysed using SPSS 11.

Results: The study interviewed 183 respondents (health care workers). Just under half these (46%) ever had mucocutaneous exposure of which 75, 40.5 % was blood. At 88.5% formal training 88, 48% was the major source of information on PEP that also had a significant correlation between worker training and knowledge of PEP ($p=0.019$) Health centre level was positively related to workers knowledge of PEP $p=0.000$. There is a significant association between continuing medical education (CME) and knowledge of PEP $p=0.016$. Of the respondents 89, 48.6% trusted PEP while 116, 62.8% would accept it following exposure. There is a positive association between duration in which a health worker from level II and hospital can receive PEP. $P=0.000$. A large number of respondents (70.5%) didn't recap while 38, 20.8% recapped needles and sharps; the later was highest in level II (30%) and lowest in hospitals (13.3%).

Conclusion. PEP should be strengthened in all health units treating patients with HIV/AIDS

Key words: HIV, post exposure prophylaxis

ASC07:82 Amphotericin B associated nephrotoxicity among HIV infected patients treated for cryptococcal meningitis at Mulago hospital.

F Kiweewa, S Kiwuwa, H K Mayanja, E Kigonya

Introduction: The use of conventional formulation of amphotericin B (AMB) in the treatment of cryptococcal meningitis (CCM), is limited by potentially severe adverse reactions especially nephrotoxicity and infusion related events.

Objectives: The aim of the study was to determine the incidence of AMB-induced nephrotoxicity as well as the factors associated with it, in HIV infected patients with CCM.

Methodology: One hundred and sixteen confirmed HIV infected patients with a diagnosis of CCM were enrolled into the study and followed for nine hundred and forty six (946) person days. Patients were evaluated for nephrotoxicity defined as at least 50% increase in serum creatinine from the baseline value.

Results: Over all, nephrotoxicity induced by AMB occurred with a frequency of 59%, and

was observed as early as the third dose of AMB. Total AMB dose and baseline serum creatinine value exceeding 133 μ mol/L were the most important independent predictors of nephrotoxicity using the Cox proportional hazards regression model (HR 1.69, 95% CI 0.308-0.986; p-value=0.045, and HR 2.1, 95% CI 1.1-4.0 respectively). Hypokalaemia was the commonest abnormality associated with the nephrotoxicity, observed at frequencies of 26% by day 3, 40% by day 7, and 62% by day 14.

Conclusion: AMB-induced nephrotoxicity occurs commonly and is observed early, and appears to be dose dependent. The total AMB dose and baseline serum creatinine value above or equal to 133 μ mol/L are the factors associated with the nephrotoxicity induced by AMB. The distribution of Lamivudin - an NRTI ARV after the IV introduction in the rabbit model using 99m Tc-Lamivudin complexes

ASC07:83 DNA fingerprinting of mycobacterium tuberculosis isolates from inmates in Luzira prison Uganda.

K.E. Tusubira, D.Katete, B. Asimwe, Fred Bwanga, J. Asimwe, F.Katabazi, Opuda-Asibo . M.L. Joloba

Department Of Medical Microbiology, Makerere University Medical School, P. O. Box 7072, Kampala, Uganda.

Background: With almost 6 yrs since the introduction of DOTs in the management of TB in prison settings, tuberculosis continues to exert an enormous toll on prison health in Uganda. According to recent autopsy studies, it contributes approximately 46.3% of mortality among inmates annually. The incidence of TB in prison is 30 times that in the general population. Fortunately with the availability of molecular techniques and facilities we can enhance our understanding of how M. tuberculosis continues to be successfully transmitted within populations. Accordingly, inadequacies in tuberculosis control programmes can be identified.

Objectives: This study was undertaken to determine if there is clustering among M.tb isolates from inmates with PTB; thus ongoing transmission in Luzira prison

Method: This was a cross-sectional study recruiting new TB suspects between November 2006 and May 2007, who had stayed in prison for over six months and had history of cough for at least three weeks. Patients were screened for TB by microscopy and culture .MTB strains were tested for strain diversity or relatedness using IS6110- Restriction Fragment length polymorphism (RFLP) and spoligotyping.

Results: A total of 125 TB suspects (age range 22-44) mean 26years, 98% males and 34% human immunodeficiency virus (HIV). positive were screened for TB. 34 cases were ZN positive while 37 were culture positive. Using the number and size of DNA fragments containing IS6110, one cluster of isolates with identical RFLP pattern was identified out of the 9 isolates analyzed so far. This cluster contained two isolates. All Isolates analyzed had more than seven copies of IS6110.

Conclusions: From the results so far, there is clustering of M.tb isolates, an evidence that there is a possible on-going transmission taking place among Inmates.

N.B These results are not conclusive until when all isolates have been typed.

Keywords: DNA fingerprinting; IS6110 RFLP; spoligotyping

ASC07:84 Assessing the level of adherence to HAART and its associated factors among HIV-positive young adults; a case of two Ugandan treatment centers

Natif Anthony, Ronald Kiguba, Kitutu Freddy Eric, Odoi Adome, Joan Kalyango

Department of Pharmacy, Faculty of Medicine, Makerere University, tonynatif@yahoo.com

Background: Strict adherence to HAART is a determinant of clinical and virologic success in HIV/AIDS treatment. Although young adults make up over 50% of HIV/AIDS cases in Uganda, no studies have been done to assess their adherence and associated factors.

Objective: To assess the level of adherence to HAART and its associated factors among young adults in Uganda.

Methods: A cross-sectional study with qualitative and quantitative methods of data collection was conducted at Naguru health centre and Mulago National Referral Hospital among HIV-positive patients aged 15-24 years who had been on HAART for at least one month. A total of 231 respondents were assessed for their 4-day adherence patterns using self reports. Data was collected using a semi-structured questionnaire, was entered in Epidata and analyzed with STATA 8. Key informant interviews and focus group discussions were held for the qualitative data.

Results: Five in six (84%, n = 194) of the respondents were adherent. On multivariate analysis, the factors independently associated with adherence in young adults were > 3 months' duration on HAART (OR = 1.06, 95% CI = 1.01-1.11), perceived lack of privacy at the treatment centre (OR = 4.6, CI = 1.05-20.10), and having a treatment buddy (OR = 2.04, CI = 1.04-3.98). Having confidence in HAART was weakly associated with adherence (OR = 3.85, CI = 0.97-15.52).

Conclusion: Adherence levels in young adults were high. Duration on HAART, having a treatment buddy, lack of privacy at the treatment centre, and having confidence in HAART were associated with adherence.

ASC07:85 Knowledge, attitude and practices of adolescents towards dual protection for STI/HIV and pregnancy at Naguru centre.

Katusiime Maureen, Nalwadda Gorrette

Department of Nursing, Faculty of Medicine amreenlan@yahoo.com gnaalwadda@gmail.com

Introduction: Early unwanted/mistimed pregnancies and sexually transmitted infections (STIs) are among the key problems affecting adolescents. Nearly half of people infected with HIV in Uganda are youths aged 15-24 years and Teenage pregnancy rate is 31%. These can be prevented if dual protection is considered.

Objectives: This study explored the knowledge, attitude and practices of adolescents towards dual protection for STIs/HIV and pregnancy.

Methods: This was a descriptive cross-sectional study and quantitative methods of data collection were used. Data was collected from February to March 2007 at Naguru Teenage

Health and Information Centre. In total 120 adolescents aged 15-19 years participated after obtaining verbal consent. Self administered questionnaires were given to school going and interviews conducted for out of school adolescents.

Results: Knowledge of adolescents on dual protection was fairly good (57.8%). Majority (66%) were sexually active. Only 32.9% used condoms consistently while (15.8%) had never used condoms. Males (50.0%) used condoms consistently more compared to 28.9% of females. Only 35% used a condom with a second contraceptive at most recent sexual encounter. Risk perception to pregnancy and STIs/HIV was low. Most respondents (65%) who perceived pregnancy to be a problem were female. Most (74.2%) respondents had a positive attitude towards dual protection.

Conclusions/Recommendation: There was moderate level of knowledge and a significant percentage (35%) of adolescents practiced dual protection for STIs/HIV and pregnancy. There is need to sensitize young people on these dual risks, correct and consistent use of condoms and on abstinence especially to those at risk.

ASC07:86 Active case finding of smear positive tuberculosis among chronic coughers in a slum setting in Kampala

Juliet N. Sekandi^{1,2,3}, Duncan V. Nuehauser¹, Kathleen A. Smyth¹, Alphonse Okwera², Christopher C. Whalen^{1,2}

1Case Western Reserve University, Department of Epidemiology and Biostatistics

2Makerere University-Case Western University Reserve University Research collaboration

3Makerere University-School of Public Health, Email: jsekandi@jph.ac.ug

Background: Sparse data exist on the utility of chronic cough as a screening tool for identifying smear positive TB cases in high-risk communities in Uganda.

Objectives: Using chronic cough (≥ 2 weeks) as a screening tool we determined the prevalence of undetected smear-positive TB disease, and described the characteristics of smear positive TB cases detected by active case finding.

Methods: A cross-sectional house-to-house survey was conducted in five randomly selected villages in Kisenyi slum in Kampala between June and August 2005. A consecutive sample of 930 adults aged 15 years and older was interviewed to identify those with chronic cough (≥ 2 weeks). Three sputum specimens were collected for smear microscopy. At least two positive smears led to a TB diagnosis and referral to the health care system for TB treatment.

Results: Among 930 individuals, we identified 189 chronic coughers. The burden of undetected active TB was 3% (33) in the overall population, but among the chronic coughers, it was 18%. The newly detected cases had a similar male to female distribution, median cough duration of 1 month, majority with low smear grades (1+: 55%, 2+ 36%, 3+:9%).

Conclusion: These findings suggest that active case finding of TB using chronic cough as a screening tool could yield additional smear-positive TB cases, reduce duration of morbidity and shorten the duration of infectiousness before diagnosis.

Recommendations: Active Case Finding is a feasible strategy that may prove useful for TB control if applied selectively to communities like Kisenyi.

Key Words: Tuberculosis; Smear positive; Active case finding; Chronic cough

ASC07:87 The anti-mycobacterial activity of some medicinal plants used traditionally to treat tuberculosis in South Western Uganda.

Kirimuhuzya Claude¹ Olwa-odyek², Paul Waako¹, Moses Joloba³

1. Department of Pharmacology and Therapeutics, Makerere University Medical School, P.O.Box 7072; Tel. 256-41-532945; Fax: 256 -41-532947, Kampala claudekirim@yahoo.co.uk
2. Department of Pharmacy;
3. Department of Medical Microbiology, Faculty of Medicine, Makerere University.

Background: The high prevalence, incidence and mortality rates of tuberculosis, and outbreaks of multi-drug resistant (MDR-TB), and extensively drug-resistant (XDR-TB) have made TB a devastating global public health problem. There is fear that the current drugs and treatment procedures could soon fail, making the disease untreatable. New, more effective and safer drugs are therefore needed.

Objective: To determine the *in vitro* antimycobacterial activity of crude extracts from selected medicinal plants using three strains of *Mycobacterium tuberculosis*.

Methods: Extracts from dried leaves of five plants were got using chloroform, methanol and water, and then screened against *Mycobacterium tuberculosis* strains that included TMC-331 (rifampicin-resistant), H37Rv and a sensitive wild strain. The agar-well diffusion method was used for susceptibility tests while the MIC and MBC were determined using colony counts on Middlebrook 7H11 medium.

Results: The methanol extract of *Lantana camara* leaves had the highest activity against all the strains of MTB used with an MIC of 20µg/ml for H37Rv, and 15 µg/ml for both TMC-331 and the wild strain. Rifampicin had an MIC of 1.0 µg/ml for both H37Rv and wild strain, but hardly showed any activity on TMC-331. The MBC values for the methanol extract of *L. camara* were 30 µg/ml for H37Rv and 20 µg/ml for both TMC-331 and wild strains of *M. tuberculosis* while for rifampicin it was 2 µg/ml for both H37Rv and the wild strain.

Conclusion: The conclusion from the study is that *L. camara* has anti mycobacterial activity that merits further research into the plant.

ASC07:88 Cytology of HIV-associated cervical adenitis: a retrospective analysis of 150 cases

T. L. Shiramba, H. A. Iodenyo

Kenya Medical Research Institute

Introduction: Cytology of enlarged lymph nodes has usually been used in the investigation of malignant disease, primary or metastatic. Lymphadenopathy is also frequently due to infection, transient or chronic. In this study, cytologic evaluation of 150 cases of HIV-associated cervical adenitis were analysed in an endeavour to determine its contribution to the management of these cases.

Methods: Patients of all age groups, who presented with cervical lymph node enlargement to a nearby district hospital and surrounding health institutions, were referred to KEMRI for

fine-needle aspiration cytology. The cellular smears were wet ethanol-fixed and stained by Papanicolaou and Ziehl-Neelsen stains for cytologic evaluation and acid fast bacilli, respectively, using light microscopy.

Results: One hundred and fifty patients were evaluated 60 (40%) of the 150 cases had cytologic features of reactive nodes; 54 (36%) of the 150 cases were ZN stain negative; and 36 (24%) of the 150 cases were ZN stain positive for acid fast bacilli.

Conclusions: 40% of the cervical lymph node smears showed typical presentations of reactive nodes. These results were helpful in management options as they ruled out malignant disease. Other investigations were suggested for the 36% cases which were ZN stain negative. In the 24% of the cases in which acid fast bacilli were identified the management was straight forward. Cytology made an important contribution to the management of HIV-associated adenitis.

ASC07:89 Emerging alternative approach to mosquito biocontrol using recombinant bacteria expressing mosquitocidal δ -endotoxins from *Bacillus thuringiensis subsp. israelensis*

Zachariah Ngalo Otieno-Ayayo^{1,2}, Eitan Ben-Dov^{1,3}, Robert Manasherob⁴, Vadim Khasdan¹, Arie Zaritsky¹, Rivka Cahan² and Sammy Boussiba⁵

1 Department of Life Sciences, Ben-Gurion University of the Negev, PO Box 653, Be'er Sheva 84105, Israel. zngalo@bgu.ac.il Tel: +972548057134

2 Department of Chemical Engineering and Biotechnology, College of Judea and Samaria, PO Box 3, Ariel 44837, Israel.

3 Achva Academic College MP Shikmim, 79800, Israel.

4 Department of Genetics, Stanford University School of Medicine, Stanford, CA 94305-5120, U.S.A.

5 Algal Biotechnology Research Laboratory, BGU, Sde Boker Campus, Sde Boker, Israel

The objective of the study was to develop and test efficacy of alternative disease vector control model systems for incorporation in integrated vector management programmes. Methods: LC50 of 16 combinations of four *Bacillus thuringiensis subsp. israelensis* (Bti) de Barjac genes (cry4Aa, cry11Aa, cyt1Aa and p20) products expressed by *Escherichia coli* were determined against three key mosquito vectors of disease. Simulated studies were done using transgenic *Anabaena PCC7120* expressing the same genes. Sodium dodecyl sulphate polyacrylamid gel electrophoresis (SDS-PAGE) and western blot were used to compare the produced patterns with the LC50 of bio-toxins. Results: A comparative analysis of response of the key mosquito species revealed a hierarchy of toxins with synergistic interactions. Clones pVE4-ADRC and pVE4-ARC expressing cry4Aa, cyt1Aa and p20 were the most toxic to all the three mosquito species tested. In simulated semi-field experiments, the transgenic *Anabaena* managed to protect the toxins from premature degradation and retained toxicity for up to 20 days, compared to commercial Bti, which lost toxicity within three days due to environmental factors. Conclusion and Recommendation: We conclude that our system offers improved efficiency in delivering the biopesticide to target mosquitoes, and recommend non-target studies on non-human subjects, followed by semi-field trials for the environmental healing process.

Key words: Recombinant *E. coli* and *Anabaena PCC7120*, Bti, δ -endotoxins, LC50, semi-field simulation studies, *An. arabiensis*, *Ae. aegypti*, *C. quinquefasciatus*, SDS-PAGE, Western blot, Environmental Healing

ASC07:90 Process evaluation of long lasting insecticidal nets by community medicine distributors

Betty Mpeka, Samson Kironde, Xavier Nsabasagani

Uganda Program for Human and Holistic Development (UPHOLD), P.O. Box 40070, Kampala, Uganda, Tel: 0312 262 164, Fax: 0414 222 860, e-mail: bmpeka@upholduganda.org

Introduction: UPHOLD, a USAID-funded program managed by JSI Inc. works in 34 districts of Uganda and supported the distribution of Long Lasting Insecticidal Nets (LLINs) to children below five years in nine districts of Uganda in 2006. Community medicine distributors (CMDs) were used as end point distributors thus creating a unique mechanism for bednet distribution. Six months after distribution, UPHOLD commissioned a study to evaluate the effectiveness of the processes used.

Objectives: To conduct an in-depth process evaluation of the LLIN distribution exercise.

Methods: Quantitative and qualitative methods were used in four purposively selected districts. Conducted interviews with 368 caretakers of children below five years, 16 focus group discussion with CMDs and children's caretakers, records review and observations.

Results: Of the targeted 260,000 nets, 205,155 (79%) were distributed to households with children below five years within three months. Household net retention was 95% and 87% of children slept under an LLIN the night before the study. Facilitating factors included: pre-registration of children below five years by the CMDs; involvement of local councils; a well managed logistics system; and community mobilization on the use of LLINs. Challenges included logistical problems in delivering the nets to remote areas.

Conclusions/Recommendations: The use of CMDs to distribute LLINs was an effective and rapid mechanism facilitated by adequate preparation, organization and transparency of the process. Ministry of Health and partners have used this approach to distribute 1.8 million nets procured through the Global Fund and the adoption of this methodology by other partners is recommended.

ASC07:91 Indicators and risk factors for medicine expiry in drug outlets in Kampala city and Entebbe municipality.

Nakyanzi J, Kamba P.F, Odoi R.A

Department of Pharmacy, Makerere University, kambaf2000@yahoo.com

Background: Expiry of invaluable medicines in Uganda's health system has drawn widespread concern. However, the scarcity of indicators of its extent and associated risk factors hinders any efforts to effectively mitigate it.

Objectives: To assess indicators and risk factors of medicine expiry in medium-to-large drug outlets in Kampala and Entebbe municipality.

Methods: A cross-sectional study using interviewer-administered semistructured questionnaires was done in five purposively selected public drug outlets and 32 randomly selected private pharmacies in Kampala city and Entebbe municipality. Data was analyzed in SPSS version 11.0.

Results: Actions related to incidences of medicine expiry were reported in many outlets. 59.5% (n=22) of the outlets had destroyed expired drugs in the past year and expiry-related drug returns and price reductions were reported by 27% and 78.4% of the outlets respectively. While the incidence of expiry indicators in public and private drug outlets was statistically similar, their difference in wholesale and retail pharmacies was significant, with the former being more likely to exchange drugs (OR: 3.9, p=0.024) and lower prices (OR= 1.6, p=0.022) than retail pharmacies. Donations, expensive medicines and those which treat rare diseases were found to be very prone to expiry. Among other risk factors overstocking, irrational quantification, inadequate inventory management and abrupt treatment policy change among others were identified in over 25% of drug outlets.

Conclusion: Drug expiry is common in both public and private drug outlets. Effective risk mitigants and a system to track quantity, value and pattern of drug expiry are needed. .

ASC07:92 The development and use of cefotaxime radioactive pharmaceutical kit in the diagnosis of bacterial infections in the rabbit model

S. Onen, P. Kiondo, N. Anyama and R.O. Adome*

Department of Pharmacy, Makerere University Faculty of Medicine

Background: The diagnosis of deep-seated bacterial infections, such as intra-abdominal and hepatic abscesses, endocarditis, osteomyelitis, etc., can be difficult and delayed, thereby compromising effective treatment. Radiopharmaceutical technology may offer new time-saving non-invasive techniques of diagnosis.

Objectives: This work was designed to investigate the possibility of using labeled cefotaxime, a third generation cephalosporin antibacterial agent, with ^{99m}Tc to form ^{99m}Tc -cefotaxime complex in imaging of infectious foci due to staphylococcus aureus in a rabbit model.

Materials and Methods: 200 mg of cefotaxime powder was mixed ^{99m}Tc Pertechnitate to form a ^{99m}Tc -cefotaxime complex Cefotaxime cold kit. The labeling efficiency was determined by thin layer chromatography using 85% methanol, 90% ethanol, acetone and ether. The infective foci was introduced by the injection of a suspension containing 10¹² colonies of staphylococcus aureus in the left thigh of the rabbit. One other group of rabbits served as control. Bio distribution studies were done by injection of 0.1mls of the radioactive material through the curf vein of the infected and uninfected rabbits, and imaging with a gamma camera at 30, 60 and 90 minutes respectively to check the distribution of radioactive material.

Results: The labeling technique was assessed to be effective, as a fairly high labeling yield of 64%. The infective foci were successfully introduced, as was indicated by reddening of the infected thigh. The bio distribution data show that ^{99m}Tc labeled cefotaxime was retained in infectious foci. The retention was specific since the abscess uptake of ^{99m}Tc -cefotaxime remained high compared to no uptake of aseptic foci at 2-hour post injection. Also, the clearance of the tracer from other tissues was rapid on the contrary to its clearance from the infected foci.

Conclusion: These results indicate that radiopharmaceutical technology has a very strong role in time-saving deep-seated infection diagnosis.

Key words: infection, diagnosis, imaging, antibiotic

ASC07:93 The use of indoor residual spraying using icon and long lasting insecticide treated nets in controlling malaria epidemics in Kanungu district Uganda.

Sebudde Stephen

District Health Officer P.O.Box 130 Kanungu Uganda drsebudde@doctor.com

Introduction: Malaria is a public health problem in Kanungu causing 33.8% of all death.

Objective: This study was aimed at identifying whether indoor residual spraying using ICON and the use of Long Lasting Insecticide Treated Nets as interventions had an impact in controlling malaria in the district.

Methodology: A retro-spective review of records from 2002 to 2007 was done in 47 health units, interviews with community members, owners of private clinics and drug shops and health workers.

Results: The Out Patient cases of malaria seen in 2002 increased from 40,000 to 120,000 in 2004. With the use of Long Lasting Insecticide treated nets (LLITN's) in 2005 this reduced to 110,000 cases. Using a combined strategy of LLITNs and Indoor Residual spraying (IRS) using ICON in February 2007 of 75% of the house holds and protecting 112.8% of the population cases decreased to 80,000. The slide positivity rates reduced from 64% to 18%. Admissions reduced from 400 to 180 cases. The deaths due to Malaria in health units in February 2007 have reduced from 18 to 5 in April 2007. Abortions reduced from above 300 to 200 cases. The communities were receptive about the interventions and appreciated the process with political support from the district leadership and the Policy makers in the Ministry of Health.

Conclusions and Recommendations: This Public Health Intervention is very effective and efficient in controlling malaria in an epidemic prone district and If this approach is sustained it can reduce malaria epidemics and prevalence in communities.

ASC07:94 Utilizing simple community based surveys to guide program implementation: A case study of bed net distribution in four districts of Uganda

Samson Kironde, Betty Mpeka, Ebony Quinto, John Tumwesigye

Uganda Program for Human and Holistic Development (UPHOLD), P.O. Box 40070, Kampala, Uganda, Tel: 0312 262 164, Fax: 0414 222 860, e-mail: skironde@upholduganda.org

Introduction: UPHOLD is a five year USAID-funded project implemented by John Snow Inc. in 34 districts of Uganda. Among other interventions, UPHOLD supports the distribution of insecticide-treated bednets (ITNs). In 2005, UPHOLD initiated the distribution of 260,000 ITNs in nine districts.

Objectives: To distribute enough ITNs in each of the target districts so as to increase the overall coverage of children below five years sleeping under an ITN by at least 15%.

Methods: Estimation of the number of ITNs to distribute in each district was based on district populations and ITN coverage rates derived from UPHOLD's 2004 and 2005 Lot

Quality Assurance Sampling (LQAS) surveys. Projected coverages were compared to results from the 2006 LQAS survey conducted eight months later.

Results: The LQAS 2006 results show a post distribution increase in ITN coverage of 13.95% compared to the projected estimate of 14% ($p=0.692$), a remarkably similar finding.

Conclusions: The LQAS survey methodology is a useful tool in estimating service coverage, which can enhance evidence-based planning and decision-making to allow a more equitable distribution of services.

ASC07:95 Factors affecting adherence to intermittent preventive treatment for malaria prevention in pregnancy in Kampala city council health centres

Hasahya Alice, Nalwadda Gorrette

Makerere University, Faculty of Medicine, Department of Nursing, ahasahya@yahoo.com, gnalwadda@gmail.com

Introduction: Malaria during pregnancy is a serious health risk for pregnant women, it's associated with maternal & infant morbidity & mortality. In Uganda, Intermittent preventive treatment (IPT) for prevention of Malaria in pregnancy, coverage one and two are still low standing at 61% and 38% respectively.

Objectives: To identify client-related, health worker-related and health facility-related factors affecting adherence to Intermittent Preventive Treatment.

Methods: A descriptive cross-sectional study involving 222 pregnant women and 15 health workers was carried out in three Kampala City Council (KCC) health center IV (Kawempe, Naguru and Kiruddu), Data was collected using interview guided, self administered questionnaires and checklists.

Results: Only 21% of the pregnant women were told about the use of drugs to prevent malaria, 31.5% knew the recommended drug used in prevention of Malaria in Pregnancy while only 4.5% knew the Fansidar recommended doses taken. Over 95% of pregnant women reported no health education was given to them concerning IPT. Surprisingly only 34.4% took Fansidar under observation by a health worker. Guidelines on malaria in pregnancy were not referred to, and only 1.6% of health workers were trained in the last six months. Generally all the three health units lacked cups, kettles, posters on prevention of malaria in pregnancy and IPT.

Conclusion and Recommendation: Awareness and use of IPT among pregnant women in KCC health units was very low. Health workers knew importance of IPT but practice as Directly observed therapy was poor. KCC should strengthen campaigns for IPT, support training and supervise health workers.

ASC07:96 Associations between mild-moderate anaemia in pregnancy and helminth, malaria and HIV infection in Entebbe, Uganda.

Lawrence Muhangi, Patrick Woodburn, Mildred Omara, Nicholas Omoding, Dennison Kizito, Harriet Mpairwe, Juliet Nabulime, Christine Ameke, Linda A. Morison, Alison M. Elliott

*MRC/UVRI Uganda Research Unit on AIDS, P.O. Box 49, Entebbe, Uganda.
Lawrence.Muhangi@mrcuganda.org*

Background: It has been suggested that helminth infections, particularly hookworm and schistosomiasis, may be important causes of anaemia in pregnancy.

Objectives: To examine the associations between anaemia and helminths, HIV and malaria

Methods: A total of 2507 pregnant women were recruited into a trial of antihelminthic treatment in pregnancy. Women were excluded from enrolment if they had severe anaemia (a Hb level <8 g/dl), liver disease, diarrhoea with blood, abnormal pregnancy and a history of adverse reaction to worm drugs. Socio-demographic data was gathered through interviews and infection data through blood and stool samples. Mild/moderate anaemia was defined as haemoglobin >8.0 g/dl and <11.2 g/dl.

Results: The prevalence of anaemia was 39.7%. The prevalence of infection with hookworm was 44.5%, *Mansonella perstans* 21.3%, *Schistosoma mansoni* 18.3%, *Strongyloides* 12.3%, *Trichuris* 9.1%, *Ascaris* 2.3%, asymptomatic *Plasmodium falciparum* parasitaemia 10.9%, and HIV 11.9%. Anaemia showed little association with presence of any helminth, but a strong association with malaria (adjusted odds ratio (aOR) 3.22, (95% CI 2.43-4.26)) and HIV (aOR 2.46 (95% CI 1.90-3.19)). There was a weak association between anaemia and increasing hookworm infection-intensity.

Attributable fractions for anaemia were hookworm 3.1%, malaria 12.3% and HIV infection 10.2%.

Conclusions: Helminths, although highly prevalent, showed little association with mild-moderate anaemia in this population, but HIV and malaria both showed a strong association. This result may relate to relatively good nutrition and low helminth infection-intensity in this population. These findings are pertinent to estimating the relative disease burden of helminths and other infections in pregnancy.

ASC07:97 Association between human immunodeficiency virus infection and cerebral malaria in children below 12 years attending Mulago hospital, Uganda: A case-control study

Peace D. Imani, James K Tumwine, Philippa Musoke, Justus Byarugaba.

Department of Paediatrics and Child Health, Makerere University Medical School, Kampala Uganda.

Correspondence: email: imani9p@yahoo.com Tel: +256-772-474959

Background: Malaria and HIV are important paediatric problems in sub-Saharan Africa. There is hardly any data on association between HIV infection and childhood cerebral malaria.

Objective: To determine the association between HIV infection and cerebral malaria in children below 12 years attending Mulago hospital.

Methods: In this unmatched case control study, 352 children were enrolled, 100 with cerebral malaria, 132 with uncomplicated malaria and 120 had no malaria.

Results: The overall prevalence of HIV infection among the 352 children was 4.3%. The prevalence of HIV infection in cerebral malaria was 9% compared to 2.3% in those with uncomplicated malaria (OR 4.3 [95% CI=1.1-16.1] $p=0.022$); and 2.5% in children with no malaria (OR 3.9 [95% CI= 1.0-14.7] $p= 0.035$). Overall, the prevalence of HIV infection in cerebral malaria was 9.0% compared to 2.4% in the two control groups with an odds ratio of 4.1 ($p= 0.006$; 95% CI= 1.4-11.7). After adjusting for confounding factors, the risk for cerebral malaria in the HIV positive children was 5.7 (95% CI 1.7-19.4) times more than in those who tested HIV-negative.

Conclusion: HIV infection was significantly associated with cerebral malaria in children admitted to Mulago Hospital and the prevalence of HIV infection among those with cerebral malaria was 9%.

Recommendation: Malaria prevention should be an important component of education and counselling of HIV infected children and their caretakers. A large study is recommended to establish whether there is a correlation between the level of HIV immunosuppression and cerebral malaria.

ASC07:98 Accessibility to artemisinin-based combination therapies through private medicine outlets in Kawempe division, Kampala

B. Opira, P. Kutwabami, P.F. Kamba, N. Anyama and R.O. Adome

Department of Pharmacy, Faculty of Medicine, Makerere University, P.O. Box 7072, Kampala, UGANDA; Email: pkutwabami@med.mak.ac.ug

Background: Emergence of drug resistant plasmodia resulted in change of first-line antimalarial treatment from chloroquine + sulfadoxine/pyrimethamine (CQ+SP) to artemisinin-based combination therapies (ACTs). The private sector, where many cases of malaria are managed, has obtained little focus during this medicine policy transition.

Objective: The aim was to assess factors that affect availability and accessibility of ACTs in community pharmacies and drug shops.

Methods: A cross sectional study design was used and the medicines outlet staff present at the time of the research interviewed with aid of questionnaires and check lists. The setting, Kawempe division, has 152 registered drug shops and 28 pharmacies. Malaria is meso-endemic in this area, occurring perennially with seasonal peaks.

Results: 123 respondents were interviewed both in pharmacies and drug shops. 91% of them were nurses and 70% were female. Only 20.3% of medicine outlets had ACTs in stock; this included all the 15 pharmacies visited. More than two years after antimalarial treatment policy change, 68.3% of respondents still used CQ+SP in management of uncomplicated malaria. Consumer preference for non-ACT treatment (78%), limited knowledge of dispensing staff on ACTs (20.3%) and high costs of treatment with ACTs (average cost of an adult dose of Ushs 15,000 or US\$ 9.4) were the most notable impediments to accessibility of artemisin-based combination therapies.

Conclusion: The availability of ACTs in community medicine outlets was rather low and their accessibility limited. Successful implementation of the antimalarial policy change in the private sector will to a large extent depend on addressing barriers to accessibility of artemisinin-based combination therapies.

Keywords: malaria, artemisin-based combination therapy, private sector, medicine policy

ASC07:99 Prevalence and factors associated with moderate to severe anaemia among HIV infected children admitted at Mulago hospital, Uganda

Mary Munyagwa¹, Edison Mworozzi¹, Grace Ndeezi¹, Francis Ssali²

1. Makerere University Department of Paediatrics and Child Health, Cellphone 0772629873, mmunyagwa@yahoo.co.uk or mmunyagwa@med.mak.ac.ug

2. Joint Clinical Research Center.

Introduction: Anaemia is a commonly encountered haematological complication of HIV infection that has a significant impact on quality of life and clinical outcome.

Objective To determine the prevalence and describe the factors associated with moderate to severe anaemia in HIV infected children.

Methods: This was a cross sectional study done on the paediatric wards of Mulago hospital. The clinical history, social demographic characteristics and physical examination were taken for 215 children. Their blood and stool samples were then analyzed. The measurements included full haemogram, malaria parasites, typing the anaemia, CD4 count and stool analysis. Data was entered using EPI data 3.1 and analyzed using EPI Info version 6.04 and SPSS version 13 computer package.

Results: The prevalence of moderate to severe anaemia was 50.7%. The factors independently associated with moderate to severe anaemia were age < 60 months (OR 4.51, 95% CI 1.77-11.47, p=0.002), not taking multivitamin supplementation (OR 4.67, 95% CI 1.97-11.06, p= 0.000), previous transfusion (OR 3.97 95% CI 1.47-10.68, p=0.006), Lymphadenopathy (OR 3.42 95% CI 1.26-9.27, p= 0.015), and malaria coinfection (OR 4.42, 95% CI 1.72-11.39, p=0.002). The types of anaemia included microcytic normochromic, normocytic normochromic, microcytic hypochromic, and macrocytic anaemia.

Conclusions: Moderate to severe anaemia is highly prevalent among HIV infected children admitted on the paediatric wards of Mulago hospital. The factors independently associated with moderate to severe anaemia were age < 60 months, not taking multivitamin supplementation, previous blood transfusion, lymphadenopathy and malaria coinfection.

ASC07:100 A comparison between the responses to nevirapine based ART regimens in women previously exposed to single dose nevirapine for PMTCT and non-nevirapine exposed women in Mulago hospital al, Kampala - Uganda

Deo Wabwire¹ Betty Mirembe¹ Ivan Kimuli¹ Esther Babirekere² Michael Mubiru¹ Philippa Musoke²

¹Makerere University Johns Hopkins University Research Collaboration, Kampala, Uganda' ² Department of paediatrics and child health, Mulago Hospital, Kampala, Uganda

Background: The impact of Nevirapine resistant mutations after single dose Nevirapine exposure for PMTCT remains uncertain. However, single dose Nevirapine remains the standard PMTCT practice in Uganda where NNR TI based ART regimens are also the first line ART regimens. This observational study compared clinical and immunological responses among Ugandan women with and without previous single dose NVP exposure that were receiving NVP based ART regimens in the MTCT-Plus care programme at Mulago Hospital, Kampala.

Methods: 164 of the women enrolled for HIV care had clinical and/or immunological indications for ART. One hundred and three (62.8%) had a history of SD NVP exposure for PMTCT within the last 18 months while 61 (37.2%) had no previous exposure to NVP. They were treated with a combination of AZT or d4T and 3TC plus NVP. At baseline, 6, 18 and 24 months, their weights and CD4 counts were determined and HIV disease classified by WHO staging system.

Results: There was no significant difference in median weights and median CD4 counts among women who received SD NVP for PMTCT compared to those with no prior single dose NVP exposure at 6 months (58 kg vs 59kg P= 0.18, 239(70-606) cells/mm³ vs 268(30-496) cells/mm³ P= 0.35), 12 months (61kg vs 60 kg P = 0.72, 284(113-820) cells/mm³ vs 313(82-640) P = 0.24, 18 months(60 vs 56kg p=0.28) and 24 months (61kg vs 57kg P= 0.86, 240(140-615) cells/mm³ vs 303(189-715) cells/mm³ P = 0.19). However NVP exposed women had a significantly lower median CD4 count at 18 months 261(47803)cells/mm³ vs 413(128-852)cells/mm³p=0.03. Three of the women with prior SD NVP exposure met criteria for treatment failure compared to 2 without prior NVP exposure. Three of the women with treatment failure had suboptimal adherence.

Conclusion: Previous single dose NVP exposure was neither associated with a higher incidence of treatment failure nor reduced immunological and/or weight responses to subsequent NVP containing ART regimens, except at 18 months.

ASC07:101 A bioinformatic approach to the identification of plasmodial proteins interacting with Tollinterleukin 1 receptor-resistance (TIR) homology domains

Bernard N. Kanoi, bnkanoi@gmail.com

Background: Members of the Toll-like receptor (TLR) family are currently under intense scrutiny for their role in the sampling and recognition of pathogens. It has already been reported that both vaccinia virus and Yersinia spp. express proteins that help them evade the TLR mediated immune response, acting through the Tollinterleukin-1 receptor-resistance (TIR) domain and leucine-rich repeat region of the host TLRs respectively. Our hypothesis was that Plasmodium falciparum has the ability to secrete proteins containing similar motifs to the intracellular TIR domains that are involved in the TIR-TIR interaction necessary for the subsequent signal transmission.

Objectives: To gain insight into the mechanisms of innate immunity in malaria and 2) identify secreted plasmodial proteins containing partial or complete TIR regions that warrant further investigation as TIR transduction pathway antagonistic.

Methods: Plasmodial proteins obtained from the plasmoDB and NCBI Protein database were analyzed with the iterative MEME-BLAST. ME ME searches were performed using the GCG Seqweb interface, protein alignments and dot matrix presentations performed using BioEdit. Tollip, a known TLR antagonist and adapter protein, was included as a control.

Results and conclusion: Although it would appear that plasmodial evolution to avoid the TLR mediated innate immune response would be a reasonable strategy, we are forced to conclude that the data obtained here do not support such a hypothesis. It should always be borne in mind, however, that this work, by the very nature of the bioinformatic tools used in this study, is restricted to searching for homologies within protein primary structures, and there is always the chance that any plasmodial TLR antagonist pmtains rely on their tertiary structure to produce the necessary binding domains. The lack of definitive evidence is, however, not equal to definitive evidence of a lack of such a mechanism and protein family.

ASC07:102 Evaluation of biochemical markers of disease in a population previously exposed to DDT through in door residual spray in Kihhi sub county of Kanungu district, Uganda

Bimenya G.S¹, Lugemwa M², Byarugaba B.B², Okwi A.L¹ and Byarugaba W.¹

1. *Pathology Department, Faculty of Medicine, Makerere University. P. O. Box 7072, Kampala.*
2. *Department of Medicine, Mulago Hospital. P. O. Box 7051, Kampala*

DDT was used by WHO to control malaria in North Kigezi in 1959/60 through in door residual spray in human dwellings and kraals. Our objective was to evaluate long term effects of DDT on the liver, the kidney and the pancreas among the people who were exposed to DDT during the spray. A control group of non exposed people from South Kigezi was included.

Methods: The study population was clinically examined and thereafter blood samples taken and analyzed to detect any injury of the liver, the kidney and the pancreas. Routine clinical laboratory methods were used on automated Konelab chemistry analyzer.

Results: There were no clinical abnormalities found in either study cases or controls and in both groups biochemical values fell within normal ranges.

Conclusion: While it is now controversial, DDT as used for malaria control had no ill effects on human health even 45 years after initial spray. It is therefore recommended that the insecticide be used to eradicate malaria throughout the country as was advised by WHO technocrats in 1964. gsbimenya@med.mak.ac.ug

ASC07:103 Prescribing habits and associated factors in the event of the 2005 Antimalarial policy. A case study of Kalisizo hospital

Ucakacon SP B¹, Kutwabami P¹, Achan J², Odoi-Adome R¹, Kalyango NJ¹

1. *Department of Pharmacy, Faculty of Medicine, Makerere University nakayaga2001@yahoo.com*
2. *MU-UCSF malaria research collaboration*

Background: The development of resistance to the first line antimalarial drugs led to the introduction of the 2005 antimalarial policy of Uganda. However, the prescribers' habits and influencing factors after the introduction of this policy have not been assessed.

Objective: To determine the prescribing habits and associated factors in Kalisizo hospital in the event of the 2005 antimalarial policy

Methods: A retrospective survey of the patient register of Kalisizo hospital from November 2006 to January 2007 was carried out. Systematic sampling was used to obtain 715 records of malaria prescriptions. Data on prescribing patterns and associated factors was collected using a pre-tested data extraction form. It was entered into Access and analyzed using STATA 9.

Results: The most prescribed antimalarials for uncomplicated and complicated malaria were Coartem (n = 564, 88.5%) and Quinine (n = 66, 84.6%) respectively. Chloroquine+SP were prescribed in 4.1% (n = 26) of the cases of uncomplicated malaria and Coartem was prescribed in 6.4% (n = 5) cases of complicated malaria. The 2005 antimalarial policy was conformed to in 88.1% of the cases (n = 630). Factors associated with prescribing habits on multivariate analysis were: patient's age (OR=2.98, p=0.012), severity of malaria (OR=10.03, p<0.001), prescriber's training (OR=68.8, p<0.001) and years in service (OR=2.71, p=0.012).

Conclusions: Most of the prescriptions were conforming to the 2005 antimalarial policy. Patient's age, severity of malaria, prescriber level of training and years in service were associated with prescribing habits.

ASC07:104 Effects of fansidar treatment on pregnancy malaria and anti-*P. falciparum* immunity

Fatuma Namusoke¹, Mats Wahlgren², Florence Mirembe¹ Fred Kironde¹.

1. *Makerere University Faculty of Medicine, Kampala*

2. *Karolinska Institute, Stockholm.*

Introduction: Malaria in pregnancy commonly leads to maternal anaemia and poor health of the newborn including low birth weight, stillbirth and spontaneous abortion. *P.falciparum* specific antibody immunoglobulins IgM, IgG1 to IgG 4, and IgE have been demonstrated in sera of malaria infected individuals, and inhabitants of malaria endemic regions. These antibodies are transferred to the fetus and play a role in the anti-malarial immunity of the infant. Studies have demonstrated that use of fansidar (SP) as intermittent presumptive treatment is effective in prevention of malaria in pregnancy. We hypothesised that fansidar intermittent presumptive treatment (IPT) during pregnancy affects the transfer of malaria specific antibody immunoglobulins from the mother to the fetus.

Methods: In a cross-sectional study, we recruited 112 patients consecutively after informed consent in the labour suite of Mulago Hospital at delivery. Data on demographic characteristics, obstetric history and present pregnancy were recorded on the questionnaire. Maternal haemoglobin was determined. Cord and maternal blood was collected for assay of serum IgG antibodies against several *P. falciparum* polypeptides (GLURP, MSP, MSP3a, HRPII) representing key antigens.

Results: We found that 96.5% of the patients had attended antenatal clinics at least once during pregnancy and 60% of them had received IPT. Nine percent of the participants , delivered low birth weight babies and 5% of all the enrolled mothers had placental malaria at delivery. The levels of maternal serum anti-peptide immunoglobulins increased with age of the mother. Number of doses of Fansidar treatment during pregnancy was not associated with levels of antimalarial antibodies in the mother and neonate.

Conclusion: While the levels of maternal anti-*P. falciparum* peptide antibodies increased with mothers' age, the proportion of antibody transferred to the fetus was unaffected by number of fansidar treatment doses received during the pregnancy.

ASC07:105 Infection with human papillomavirus and HIV among young women in Kampala, Uganda

Cecily Banura^{1,2}, Silvia Franceschi³, Leen-Jan van Doorn⁴, Annie Arslan³, Fred Wabwire-Mangen⁵, Edward K Mbide⁶, Wim Quint⁴, Elisabete Weiderpass^{2,7,8}

1. *Faculty of Medicine, Makerere University, Kampala Uganda*
2. *Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden*
3. *International Agency for Research on Cancer, Lyon, France*
4. *Delft Diagnostic Laboratory, Voorburg, The Netherlands*
5. *Institute of Public Health, Makerere University, Kampala, Uganda*
6. *Uganda Virus Research Institute, Entebbe, Uganda*
7. *Cancer Registry of Norway, Oslo, Norway*
8. *Samfundet Folkhalsan, Helsinki, Finland*

Background: Little is known about the prevalence of cervical infection with different human papillomavirus (HPV) types among young women in Uganda.

Methods: Cross-sectional findings are presented from a cohort study of 1,275 sexually active women aged 12-24 years attending the Naguru Teenage Clinic in Kampala, Uganda. The presence of 39 HPV types was assessed using highly sensitive polymerase chain reaction assays. Coinfection with HIV and syphilis was also evaluated.

Results: Prevalences of HPV and HIV infections were 74.6% and 8.6%, respectively. HIV-positive women had a higher prevalence of HPV (87.8% vs 73.2%) and multiple-type infections (64.6% vs 38.7%) than HIV-negative women, but the predominant HPV types were similar irrespective of HIV status (HPV6, 11, 16, 18, 51, and 52). In addition to HIV, age ≤ 18 years, employment in the tertiary sector, lifetime number of sexual partners, concurrent pregnancy and presence of genital warts were significantly associated with HPV positivity. An attempt to infer cumulative incidence from the age-specific prevalence suggested that by 21 years of age, approximately 70% of women had yet to be infected by either HPV16 or 18.

Conclusions: The high HPV prevalence in young women in Kampala. Teenage clinics provide an important opportunity to monitor the impact of HPV vaccine demonstration projects and, possibly, to catch up young women who may miss the vaccine.

ASC07:106 The Expectations and experiences of caregivers of pediatric patients admitted at Mulago Hospital regarding the communication skills of the attending doctors.

Sarah Kiguli¹, Janet Nakigudde², Jan van Dalen³

¹*Department of Paediatrics, Faculty of Medicine, Makerere University, skwalube@yahoo.co.uk*

²*Department of Psychiatry s, Faculty of Medicine, Makerere University*

³*University of Maastricht, The Netherlands*

Introduction: Communication is essential to almost all aspects of health care, from history taking to providing information to the patient. The Calgary Cambridge Guide provides a

summary of the research literature on what makes a difference in doctor-patient communication. Previous studies have revealed dissatisfaction about the quality of patient-doctor communication. There is no available literature on the expectations of Ugandan patients or caregivers, regarding the communication skills of the attending doctors.

Objective: To document the expectations and experiences of caregivers of paediatric patients admitted at Mulago Hospital, Kampala, Uganda, regarding the communication skills of the attending doctors.

Methods: This was a qualitative study, employing Focus Group and Key Informant Interviews. The study population was the caregivers of sick children in Mulago hospital, Kampala, Uganda. The interviews were later transcribed, reviewed, categorized into themes and analysed.

Results: Caregivers of paediatric in Mulago Hospital expect the attending doctors to: give them an opportunity to explain the child's problem; show them concern and support and give them information about the sick child. Furthermore, the caregivers would like the attending doctors to demonstrate appropriate skills of building rapport, gathering information, building a relationship with them as well as explaining and planning. There is discrepancy between expectations and experiences of caregivers.

Conclusion: What is desired in Europe/USA Canada literature seems to be valid for the group of caregivers studied, and the communication skills of doctors in Mulago Hospital need to be improved.

ASC07:107 A community-based study of strain diversity and drug susceptibility of TB in peri-urban Kampala, Uganda.

Asiimwe, B. B^{1,2}, S. Ghebremichael³, G. Kallenius³, T. Koivula³, and M. L. Joloba^{1*}.

Department of Medical Microbiology, Makerere University Medical School, Kampala, Uganda¹; Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Stockholm, Sweden²; Department of Bacteriology, Swedish Institute for Infectious Diseases Control, Stockholm, Sweden⁴.

*Corresponding author: moses.joloba@case.edu

Setting: Rubaga division, Kampala, Uganda.

Objective: To use spoligotyping to in order to determine the predominant strain lineages in Rubaga division, Kampala, Uganda; and to assess the levels of resistance to anti-tuberculosis drugs in the community.

Design: 344 isolates from consecutive smear positive newly presenting TB patients attending clinics in Rubaga division were studied. Sample processing, culture and susceptibility testing were performed at the National Tuberculosis and Reference Laboratory, HIV rapid testing was done on recruitment at the division clinics, molecular assays at Makerere Medical School and data analysis at the Swedish Institute for Infectious Diseases Control.

Results: 241 (70%) of the isolates were of the T2 family and its variants, while CAS1-Kili (3.5%), LAM9 (2.6%) and CAS1-Delhi (2.6%) were the other predominant strains. Resistance to isoniazid was found in 7.6% and resistance to rifampicin was 6.4%. Fifteen isolates were MDR, 13 of which were of the T2 family and its variants. None of the 4 Beijing

strains in the sample was MDR and there was no association between HIV sero-status and MDR. The single *M. bovis* case seen was in an HIV sero-positive patient. Strains of the T2 family accounted for 57.6% of the 92 HIV sero-positive patients, 6.5% were CAS, 3.3% LAM3/S while 4.3% were unique.

Conclusion: The TB epidemic in Kampala is localized, mainly caused by the T2 complex in this region. More community-based strain analysis studies are needed to pinpoint isolates associated with higher drug resistance, morbidity and mortality, with the aim of directing efforts to limit the spread of those strains within the communities.

ASC07:108 *Mycobacterium tuberculosis* Uganda genotype is the predominant cause of tuberculosis in Kampala, Uganda.

Asiimwe, B. B^{1,2}, T. Koivula³, G. Kallenius³, R. C. Huard⁴, S. Ghebremichael³ and M. L. Joloba^{1*}.

Department of Medical Microbiology, Makerere University Medical School, Kampala, Uganda¹; Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Stockholm, Sweden²; Department of Bacteriology, Swedish Institute for Infectious Diseases Control, Stockholm, Sweden³; Clinical Microbiology Service and the Department of Pathology, New York Presbyterian Hospital-Columbia University Medical Center, New York, NY, USA⁴.

*Corresponding author: moses.joloba@case.edu

Setting: Rubaga division, Kampala, Uganda.

Objective: To use PCR-based regions of difference (RD) analysis to study the species diversity of *Mycobacterium tuberculosis* complex (MTC) isolates from a community based sample of tuberculosis (TB) patients from Rubaga; and long sequence polymorphism (LSP) analysis to further characterize the *M. tuberculosis* Uganda genotype, a group of strains previously recognized by their characteristic spoligotype patterns.

Design: 344 consecutive TB patients attending clinics in Rubaga division were enrolled. Sample processing and culture were performed at the National Tuberculosis and Reference Laboratory and molecular assays at Makerere Medical School. Species identification was achieved by determining the RDs, while spoligotyping and LSP analysis were done to characterize the *M. tuberculosis* Uganda genotype.

Results: 343 (99.7%) of the isolates were *M. tuberculosis sensu stricto* while one was classical *Mycobacterium bovis*. The Uganda genotype strains characteristically lacked RD724, a locus that defines one of the major sub-lineages of *M. tuberculosis*, and suggesting that this geographically constrained lineage is specifically adapted to a central African human host population.

Conclusion: *M. tuberculosis* is the most prevalent species of the MTC in Kampala and the Uganda genotype is the predominant strain.

ASC07:109 Mutational analyses of co-trimoxazole resistance in *Streptococcus pneumoniae* and commensal *Streptococci* species in Kampala, Uganda

Maria Wilén¹, William Buwembo², Hakim Sendagire^{3*}, Fred Kironde³ and Göte Swedberg¹

1. Department of Medical Microbiology and Biochemistry, Uppsala University, Sweden.

2. Department of Anatomy, Makerere University, Kampala, Uganda.

3. Department of Biochemistry, Makerere University, Kampala, Uganda.

* Currently in the Department of Microbiology, Makerere University, Kampala, Uganda.

Introduction: Trimethoprim-sulfamethoxazole (co-trimoxazole) is commonly used as part of standard medical care for people with HIV/AIDS in Africa and this could lead to development of resistance. Here, we investigated the prevalence and mechanisms of resistance to co-trimoxazole in commensal oral streptococci from Uganda.

Methods: Throat and nasal swabs of 34 HIV positive individuals on co-trimoxazole prophylaxis and 18 individuals not on any known prophylaxis were collected from patients at TASO, Mulago or JCRC, Mengo. The samples were processed to grow *Streptococcus* and analysed to determine antibiotic resistance, species and polymorphisms in DHFR and DHPS.

Results: Of 59 isolates, 52 were *streptococcus viridans* and 7 were *S. pneumoniae* bacteria. All nasopharyngeal isolates were resistant to co-trimoxazole and oxacillin, while 83% were resistant to ciprofloxacin. Resistance to chloramphenicol was about 29% while over 90% of isolates were susceptible to ceftriaxone. Sequence analysis was successful for 21 isolates of which 7 were identified as belonging to the *mitis* group. There were no obvious differences between the mutation patterns in *S. pneumoniae* and *S. viridans* streptococci.

Conclusions: We found high level of resistance to co-trimoxazole in Ugandan streptococcal isolates and remarkable polymorphisms in the genes DHPS and DHFR. The mechanisms of co-trimoxazole resistance in pneumococci and commensal oropharyngeal streptococci appeared similar. Thus, frequent use of co-trimoxazole may have selected for co-trimoxazole resistant viridans streptococci that interchanged resistance mutations with the related pathogenic bacteria, the pneumococci.

ASC07:110 Presumptive treatment with sulfadoxine- pyrimethamine versus weekly chloroquine for malaria prophylaxis in children attending the Sickle Cell Clinic, Mulago hospital, Uganda: a randomized controlled trial

Victoria Nakibuuka, Grace Ndeezi, Deborah Nakiboneka, Christopher MNdugwa, James K Tumwine.

Department of Paediatrics and Child Health, Makerere University Medical School, Kampala Uganda

Correspondence: Email: nakibuukaru@yahoo.com Tel: 0772-369325

Background: Malaria carries high case fatality among children with sickle cell anaemia. In Uganda, chloroquine is used for prophylaxis in these children despite high levels of chloroquine resistance. Intermittent presumptive treatment with sulfadoxine – pyrimethamine has shown great potential for reducing prevalence of malaria and anaemia

among pregnant women and infants.

Objective: To compare the efficacy of monthly sulfadoxine – pyrimethamine presumptive treatment, versus weekly chloroquine for malaria prophylaxis in children attending the Sickle Cell Clinic, Mulago Hospital.

Methods: Two hundred and forty two children with sickle cell anaemia were randomized to presumptive treatment with sulfadoxine – pyrimethamine or weekly chloroquine for malaria prophylaxis. Active detection of malaria was made at each weekly visit to the clinic over one month. The primary outcome measure was proportion of children with one malaria episode at one month follow up. Secondary outcome measures included: malaria related admissions and adverse effects of the drugs

Results: Ninety three percent (114/122) of the children in the chloroquine group and 94% (113/120) in the sulfadoxine - pyrimethamine group completed one month follow up. Sulfadoxine – pyrimethamine reduced prevalence of malaria by 50% compared to chloroquine [OR = 0.50, (95% CI 0.26 – 0.97)]; $p = 0.042$. Six percent (7/122) of the children receiving weekly chloroquine had malaria related admissions compared to 2.5% (3/120) on presumptive treatment with sulfadoxine – pyrimethamine. No serious drug effects were reported in both treatment groups.

Conclusion: Presumptive treatment with sulfadoxine – pyrimethamine was more efficacious than weekly chloroquine in reducing prevalence of malaria in children with sickle cell anaemia.

ASC07:111 Prevalence and risk factors for under nutrition among children living in Internally Displaced Person's Camps, Gulu District, Northern Uganda

Mary Abwola Olwedo¹, Christopher Garimoi Orach^é, Hanifa Bachou¹, Edison Mworozzi¹

1. Makerere University Department of Paediatrics and Child Health, Cell phone 0772583568, E-mails; mabwola@med.mak.ac.ug or mabwolacherire@yahoo.com
2. Makerere University School of Public Health, Department of Community Health and Behavioral Sciences

Introduction Since the mid 1990s, Uganda has had an estimated 2 million internally displaced persons (IDPs) in the Northern and Eastern districts. A major cause of morbidity and mortality amongst IDP children is protein energy malnutrition.

Objective To estimate the prevalence of and describe the risk factors for protein energy malnutrition among the under five years old children living in internally displaced people's camps in Omoro county, Gulu district.

Methods This was a cross sectional study carried out in internally displaced people's camps, Omoro county, Gulu district during 13th and 23rd September 2006. Anthropometric measurements of 672 children aged 3 – 59 months were undertaken and their caretakers/parents interviewed. The anthropometric measurements were analyzed using z-scores of weight for height (W/H) and height for age (H/A) indices. Qualitative data were collected through 5 focus group discussions, 15 key informant interviews and observation. Data were captured using Epi Data version 3.0 and analyzed using EPI-INFO 6.03 and SPSS 11.0 computer packages.

Results The prevalence of stunting was 52.4% whereas acute malnutrition was 6.0%. Being

a male child was a risk factor for stunting Adjusted OR 1.57 95% CI 1.149-2.126; p value=0.004. Children in the age group 3 – 24 months were at risk of acute malnutrition Adjusted OR 2.781 95% CI 1.257-6.153; p value=0.012 while deworming was protective against acute malnutrition Adjusted OR 0.435 95% CI 0.218-0.876; p value=0.018.

Conclusion There is high prevalence of protein energy malnutrition (stunting) among children in the IDP camps in Omoro county, Gulu district. Male children are at an increased risk of stunting while children in the age group 3 – 24 months are at an increased risk of suffering from acute malnutrition.

Recommendation The stakeholders in Gulu district (local government, NGOs/UN agencies) who support/care for IDP should intensify efforts to improve the welfare (nutritional status) of the population especially children in the camp settings. The quantity of and access to household food supplies, counseling and health education on infant and child feeding should be improved. Integrated management of childhood illnesses (IMCI) activities in the camps should be strengthened.

ASC07:112 Factors affecting adherence to chloroquine prophylaxis for malaria among sickle anaemia children attending Mulago Hospital Sickle Cell Clinic

Cissy Nalunkuma¹, Celestino Obua², Deborah Nakiboneka¹, Christopher Ndugwa¹, James K Tumwine¹

1. Department of Paediatrics and Child Health, Makerere University Medical School, P.O Box 7072 Kampala, Uganda
2. Department of Pharmacology and Therapeutics, Makerere University Medical School, P.O Box 7072 Kampala, Uganda; **Correspondence:** Email: cnalunkuma@yahoo.com; Tel: 0752 499 570

Background: Children with sickle cell anaemia are at increased risk of morbidity and mortality from malaria and should be on prophylaxis for life. Weekly chloroquine is currently recommended for malarial prophylaxis in the Mulago Sickle Cell Clinic, Uganda.

Objective: To determine factors affecting adherence to chloroquine prophylaxis for malaria, among children attending the Mulago Sickle Cell Clinic.

Methods: Two hundred children, aged between 1-12 years, on chloroquine chemoprophylaxis were enrolled and assessed for adherence to self-report. 173 had plasma chloroquine levels. Adherence was defined as taking 100% of the chloroquine doses over a 4-week period. Factors affecting adherence to chloroquine prophylaxis were assessed using questionnaires. Qualitative data was collected using focus group discussions.

Results: Self reported adherence to chloroquine prophylaxis was 34%. Half of those who were adherent by self-report had plasma chloroquine levels above 40nM. Caregivers who had a set day for giving chloroquine (OR 3.7, p=0.004, CI 1.5-9.1) and those well counselled to adhere (OR 2.9, p=0.04, CI 1.1-7.7) had better adherence. Well children (OR 0.2, p=0.011, CI 0.5-0.7) and those with no chloroquine (OR 0.2, p=0.005, CI 0.1-0.6) had poor adherence. Forgetfulness, unavailability of chloroquine and fear of side effects were the reasons for missing chloroquine.

Conclusions: Adherence to prophylactic chloroquine amongst children with sickle cell anaemia was low. Only half of those who reported adherence had adequate drug levels.

Caregiver, health unit and child factors were the main determinants of adherence to chloroquine.

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