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SUB THEME: CAPACITY BUILDING

ABSTRACT 01

“We cannot do medical research without the social sciences”: Institutional and disciplinary challenges to interdisciplinary training.

Authors:

David Kaawa-Mafigiri^{1,2}, MPH, PhD

Janet W. McGrath², PhD

¹Department of Social Work and Social Administration, School of Social Sciences, Makerere University, Uganda, dmk28@case.edu

²Department of Anthropology, Case Western Reserve University, USA, jwm6@case.edu

Issues:

Integrating social and behavioral science (SBS) with biomedical research (BMR) during health sciences training to improve research and implementation/programming capacity for public health in Uganda.

Description:

It is widely recognized that to have sustained impact in research and intervention for most public health problems of significance in Uganda, there is need to draw on multiple perspectives to understanding the context within which health occurs. This calls for interdisciplinary training of human resources for health. Specifically, the role of social and behavioral sciences (SBS) in biomedical research (BMR) provides an example of how integrating different perspectives can advance prevention and treatment of public health problems like HIV, TB and other diseases that plague Uganda. We draw on our experiences as researchers and trainers in SBS in the health sector to describe some perspectives about interdisciplinary research and training in Uganda.

Lessons learned

Overall, in spite of general support for integration of social and behavioral science work in biomedical/clinical research, those working in health sector have limited familiarity with the contributions of SBS research to medical research. This lack of exposure to the work of SBS researchers results in misaligned expectations and over-simplified models of SBS. There are both institutional and disciplinary challenges to interdisciplinary training and research that impede sustained interdisciplinary work.

Next steps (future steps)

There is need to identify training approaches to overcome these challenges.

ABSTRACT 02

A pilot project to enhance research capacity building through in-house and peer mentorship

Castelnuovo Barbara, Namwase Angella Sandra, Okoboi Stephen, Kambugu Andrew

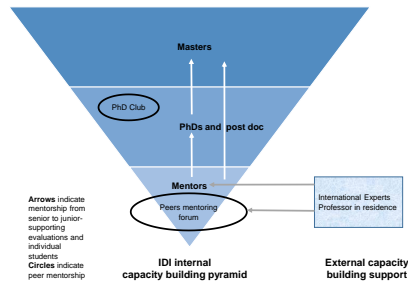
Issues

The Fogarty Internal Centre (FIC)-supported Research Training program on “HIV and co-Infection” at the Infectious Diseases Institute (IDI), Makerere University have trained 2 PhDs, 5 post-doctoral fellows, 8 Masters of Medicine students, and 4 Infectious Diseases sub-specialists. The program international mentors and opportunity for international placements for the research trainees. This approach to human research capacity building though highly efficient, may not be sustainable

Description

We piloted a model of sustainable research capacity building in the last 2 years. The model has the following elements:1) Appointment of a local research capacity building supervisor 2) PhD and post-doc scholars were assigned as co-mentors to

master scholars, 3) PhD peer mentorship with the format of a PhD club where 4) Senior scientists at IDI with the potential of competing for independent research funds formed a peer group 5) International mentorship offered only to the senior scientists while local scholars receive in-house mentorship. The figure below depicts the proposed concept of sustainable capacity building.



Lesson learned

Where resources and senior researchers are present, but limited in number, this synergistic approach can exponentially increase local mentorship capacity with only minimal support by international experts. PhD students coach each other by presenting the proposal ahead of the High Degree Committee meeting. Senior scientists present and brainstorm on grants proposal ideas. Masters are mentored by PhD and post-docs, who in turn learn hands-on how to be mentored earlier in their career.

Next steps.

We are currently developing a full program based on the model described above with a view to submitting a proposal for funding to the FIC research capacity building grant (D43 Mechanism). The model will have shifted focus from international mentors to local (Ugandan) senior mentors, in addition to peer mentorship groups.

ABSTRACT 03

Advocates for patient safety in a large HIV outpatient facility: feasibility and impact of a pilot training program in Uganda

Seden K, Kukundakwe M*, Kamoga R, Musomba R, Tindyebwa E, Lwanga I, Lamorde M

**Presenting author*

Infectious Diseases Institute, Kampala, Uganda

Background

Compromised patient safety is increasingly recognised as a source of clinical and financial harm. HIV Treatment in sub-Saharan Africa is often protocol-driven, with high patient volume, leaving little opportunity for patient involvement on safety issues.

Objectives and improvement goals

The Infectious Diseases Institute and the Community Health and Information Network initiated a program to train young patients to actively advocate for patient safety. We evaluated the feasibility, acceptability and impact of this novel pilot training program at a large HIV referral clinic in Uganda.

Methods

Five patient safety advocates were enrolled, and completed the program. Training sessions were conducted weekly between June-November 2016, and comprised presentation, group discussion, online courses and trainee presentation. Topics included: hand hygiene, medication safety, patient rights and communication skills. Placements in six clinic areas were undertaken, where advocates observed practice, educated patients and documented safety incidents. Trainees

evaluated the program via anonymous questionnaire.

Results

Three of five advocates felt very accepted by healthcare workers, 4/5 felt very accepted by patients. Challenges described were: unclear expectations, feeling that clinic staff saw them as 'spies' or did not understand their role. All participants felt they made a difference to patient safety. Advocates felt they had most impact through teaching patients: hand hygiene, safe disposal of phlebotomy swabs, patient rights, empowering patients to ask questions. Participants observed 16 safety incidents, 12 of which were detected by advocates. Five incidents involved medicines, three involved infection risk. Eight incidents involved lack of patient understanding, and seven resulted in referral to a clinic worker.

Lessons learned and next steps

Initial evaluation has demonstrated feasibility, utility and the capability of the advocates, which will give direction to future programs. The program has since been scaled up and integrated at a national level to train 78 expert patient/volunteers attending six major ARV facility clinics in Kampala. Further evaluation of program impact and acceptability are planned, including patient/clinician opinion and case study of incidents, to assess harm reduction.

ABSTRACT 04

Training Community Health Workers about Early Detection of Kaposi's Sarcoma:

A Comparison of Expert-led versus Community Health Worker Supervisor-led Approaches

Philippa Kadama-Makanga¹, Miriam Laker-Oketta¹, Lisa Butler², Andrew Kambugu¹, Toby Maurer³, Edward Mbidde¹ and Jeffrey Martin³

¹Infectious Diseases Institute, Kampala, Uganda; ²University of Connecticut, Storrs, CT; and ³University of California, San Francisco

Background: Late diagnosis of KS remains rife in sub-Saharan Africa despite the possibility for remission when antiretroviral therapy for HIV is initiated for mild/moderate KS. Although multifactorial in origin, late presentation of KS is largely due to scant knowledge of KS in the community. Actively promoting community awareness about KS is very important now as KS incidence is generally declining, and fewer persons will encounter KS passively. Community health workers (CHWs) have been trained to promote timely diagnosis of several diseases in the community. Utilizing CHWs to promote early detection of KS should be feasible given the cutaneous presentation of KS. We set out to determine whether training CHWs using their regular supervisors would result in comparable increases in knowledge.

Methods: Between 2012 and 2015, a group of experts provided a one-day training, using a standardized manual, to CHWs in western Uganda about early detection of KS. In 2016, CHWs supervisors in the aforementioned region received a two-day training on KS epidemiology, clinical presentation and treatment. Within 4 months of training, each supervisor trained a group of CHWs using the same manual that was used in the earlier

expert-led sessions. Baseline KS-related knowledge and change in knowledge amongst the CHWs was assessed using structured questions in a pre-and posttest format respectively.

Results: Altogether, 228CHWs received training about KS from a group of 3 experts, and 492 CHWs were trained by the 30 CHW supervisors. Pre-training assessment showed only 38% of the CHWs had ever heard about KS and 13% could recognize KS from photographs. The post-training evaluation showed that CHWs trained by their supervisors demonstrated change in KS-related knowledge comparable to those trained by expert trainers.

Conclusion: Using a well-developed training manual in a 1-day session, CHW supervisors in Uganda successfully taught their CHWs about early detection of KS. CHWs trained by their supervisors obtained knowledge about KS to a similar degree as those trained by experts. To promote early detection of KS, training CHWs in KS identification may be a vital link, resulting into more CHWs trained, continuous training, and cost-efficient capacity-building within an already existing structure.

THEME: MENTAL HEALTH

ABSTRACT 05

Behavioral, Neurochemical and Hemodynamic Changes in Neonates Rats Exposed to Perinatal Iron Deficiency

Akeem Gbolade Owoola^a, Alfred Omachonu Okpanachi^a, Mutiat Olasumbo Owoola-Ajirotutu^a, Sadiq Yusuf^b

^aDepartment of Physiology, Faculty of Biomedical Sciences, Kampala International University, Uganda.

^bDepartment of Physiology, St. Augustine International University, Kampala, Uganda
Correspondence author: Sadiq Yusuf (ysadiq@saiu.ac.ug)

Background:

Perinatal iron-deficiency anemia (IDA) has been reported to induce fetal neurodevelopment abnormalities, which can adversely impact the growth and behavioral development of the offspring in later life. The underlying mechanisms by which perinatal IDA alters cognitive functions in infant and children remain unclear. In this study, series of experiments were undertaken systematically to elucidate the role of hemodynamic variables, hippocampal acetylcholinesterase activity and neurogenesis in cognitive malfunction in neonate rats exposed to perinatal ID.

Methods:

Pregnant female Wistar rats were randomly assigned to control or iron deficient diet groups by providing iron sufficient diet (40 ppm Fe) or iron-deficient (2-6 ppm Fe) diets fed iron-deficient diets from gestational day 1 to through to weaning of the pups. Thereafter, all offspring were fed on iron-sufficient diet. The iron-deficient diet was enough to reduce blood iron and hemoglobin concentration by 60% when compared to the iron-sufficient group. The HCT On PND 14 and 30 respectively, the cognitive function of the neonate rats from the dams fed on iron-sufficient or iron-deficient diets were assessed by the novel-object recognition (NOR) test. On PND 7, 14 and 30, hippocampal neurogenesis and hemodynamics variables of the neonate rats were assessed indirectly by measuring the hippocampus cell volume and determination of MCH and blood viscosity respectively in neonate rats. The activity of acetylcholinesterase (AChE) in the

hippocampus of the neonates was also measured in the respective PND.

Results:

Neonates from iron-deficient dams showed significant behavioral impairments based on their performance in the novel object recognition task. There was a significant decrease in hemodynamics, hippocampal volume and AChE activity in neonate rats exposed to perinatal IDA mainly at PND 15 compared to control ($P < 0.05$ each).

Conclusion: These results confirm that perinatal IDA adversely affects cognitive functions of neonates later in life. Altered hemodynamic variables and AChE activity of the developing hippocampus may underlie some of the cognitive deficits observed in offspring with perinatal IDA.

ABSTRACT 06

Development of a specialised early intervention service for first episode psychosis at the national psychiatric hospital in Uganda.

Authors: Kenneth K. Tomanya; Clare N. Kobusingye; Angel Nanteza; Emmanuel K. Mwesiga.

Introduction:

Psychotic disorders are the most burdensome of all mental illnesses. Early and correct management of a first episode of psychosis (FEP) is a key predictor of recovery. Specialised early intervention clinics for psychosis help improve outcomes. The most essential components of a specialised clinic include use of a single low dose second generation antipsychotics, clozapine for treatment resistance, supported employment and multifamily group psycho education. There is limited literature on availability of

these components in current service provision in Uganda.

Methods:

This is an ongoing cross sectional study at the national psychiatric referral and teaching hospital in Uganda (Butabika hospital). We determined the burden of patients with psychosis presenting at the hospital for the first time (first episode of psychosis). Among selected inpatients, we then assessed for essential core components of a specialised clinic for psychosis. Descriptive statistics were used to highlight service gaps.

Results:

Between January and April 2018; there were 500 first time patients presenting to the clinic for the first time. 212(42%) of 500 patients were diagnosed with FEP. The mean age was 31.3 (SD 10.95) with 53% being female and 140 (66%) participants were unemployed. Among the in-patients with FEP, 97.3% of all patients were on first generation antipsychotics with the majority on one antipsychotic. For those on one antipsychotic the mean dose was greater than 300mg/day. There was no patient on Clozapine and there was limited multifamily group education.

Discussion:

There is a large burden of first episode of psychosis at Butabika hospital that would benefit from a specialised early intervention clinic for psychosis. The majority of core components essential for a specialised early intervention clinic are currently not available. Given the benefit of these services on outcomes steps must be taken to introduce them. Cost benefit analyses are recommended.

ABSTRACT 07

Depressive Symptoms and Cumulative 24-Hour Urinary Noradrenaline Level Among University Medical Students

Owoola-Ajirotutu, M. O^a., Rukundo, G. Z^b., Okpanachi, A. O^a., Owoola, A. G^a.; Dada, M. U^c; Yusuf, S^d

^a Physiology Department Faculty of Biomedical Sciences, Kampala International University Western Campus, Bushenyi-Ishaka, Uganda

^b Department of Psychiatry, Mbarara University of Science and Technology, Uganda

^c Department of Psychiatry, Ekiti State University, Nigeria

^d Department of Physiology, St. Augustine International University, Kampala, Uganda

Correspondence author: Sadiq Yusuf (ysadiq@saiu.ac.ug)

BACKGROUND

Depression is a serious mental health problem in all the different parts of the world, even among University students. Although the underlying pathophysiology of depression has not been clearly defined, various studies have reported disturbances in neurotransmission of norepinephrine and other biogenic amines in the central nervous system. Therefore, identifying risk factors and biomarkers for depression is key in designing appropriate interventions. The present study was designed to assess the prevalence of depression in University medical students in Uganda and the relationship between depressive symptoms and twenty four hour's urinary noradrenaline level in the respondents.

METHODS

A 24-hour urinary noradrenaline excretion was measured in 116 medical students (75 males and 41 females) of Kampala

International University, in southwestern Uganda. The participants were also evaluated for depression using the 21-item Beck Depression Inventory (BDI). BDI scores ≤ 10 and ≥ 11 were taken to reflect normal and depression respectively.

RESULTS

Total of 27 participants (23.3%) had depressive symptoms with an increased mean 24-hour urinary noradrenaline excretion levels when compared participants who did not show depression symptoms ($107 \pm 5.78 \mu\text{g/day}$ versus $98.09 \pm 3.75 \mu\text{g/day}$). Regression analysis demonstrated that there was no correlation between 24-hour urinary noradrenaline levels with depression ($r = 0.06$, $p = 0.28$). Regression models, accounting for socio-demographic characteristics also confirmed that, depression was not associated with depressive symptoms ($p = 0.64$).

CONCLUSIONS

These results suggest that the high prevalence of depressive symptoms among medical students may not be associated with the increased 24-hour urinary noradrenaline excretion.

SUB THEME: NON COMMUNICABLE DISEASES

ABSTRACT 08

Exploring the clinical diagnostic accuracy of Anaemia as a predictor of Vitamin A Deficiency in children below five years: A Cross-sectional Study.

A. Katureebe¹, M. Kyohere¹

Infectious Diseases Research Collaboration (IDRC)

Introduction: Vitamin A deficiency (VAD) remains an important public health problem especially in children less than five years. The

known clinical spectrum of ocular manifestations of VAD, though important clinical indicators, they are rare and may be hard to determine; requiring high level expertise. Identifying other clinical markers/indicators that help to easily diagnose VAD and guide Vitamin A supplementation is important especially in low income countries where VAD laboratory diagnosis is still difficult. We investigated the relationship between VAD and anaemia and explored the validity of anaemia as a clinical marker of VAD in children less than 5 years in Uganda.

Methods: We used the 2016 Uganda Demographic and Health Survey (UDHS) cross-sectional data set of 4758 children between the ages 6-59 months to assess the association between anaemia and VAD. We calculated the sensitivity, specificity and the positive predictive value to assess the validity of using anaemia as a predictor of VAD. VAD was assessed using retinol binding protein enzyme immunoassay (RBP-EIA) method and a concentration of 0.825 micromoles/l of RBP was used to indicate VAD. Anaemia was assessed by haemoglobin (HB) analyses and an HB of <11g/dl indicated anaemia.

Results: The prevalence of VAD was 8.9%, 95% CI 8.1-9.9% while that of anaemia was 50.2% CI 48.8-51.6%. Evidence shows a relationship between anaemia and VAD in children below 5 years of age. The sensitivity of anaemia to predict the presence of VAD was 59.7%, CI 54.8-64.4% while the specificity was 49.3% CI 47.8-50.8%. The positive predictive value (PPV) of anaemia as a predictor of VAD was however 8.9% CI 8.10-9.86%.

Conclusion: Our results suggest that anaemia may have an acceptable level of diagnostic

accuracy for VAD in children below five years. It is important to explore how the severity of anaemia may affect this validity.

ABSTRACT 09

NUTRITION STATUS OF CHILDREN UNDER FIVE YEARS IN NAMASERE VILLAGE, NAMUTUMBA DISTRICT

Authors: Nkalubo Jonathan, Mugala Faridah
Makerere University, College of Health Sciences

Corresponding author:
nkalubo11@gmail.com, +256700117174

PROBLEM STATEMENT: Malnutrition in under-fives is clinically severe especially in acute form as it accounts for the greatest contribution in the high infant mortality rates in Uganda (76 deaths per 1000 live births) and under-fives mortality shooting up to 134 deaths per 1000 live births.

BACKGROUND: In 2012, 41% of the children in this district were found to be stunted, three children reported dead and more than 55 hospitalized in different health centers. This prompted our study in May/June 2017 to find out the nutrition status of children in this village.

OBJECTIVE: The main study objective was to assess the nutritional status of children under the age of five years in the village so as to inform the design and improvement of interventions aimed at better management of malnutrition among children under five years.

METHODOLOGY: A cross-sectional descriptive study design was used. A sample size of 36 households was adopted by simple random sampling. A structured questionnaire was administered to caregivers of children to obtain information on household demographics, socioeconomic factors,

availability of foods, and child-feeding practices. Anthropometric measurements were taken for all children.

RESULTS: Anthropometric measurements were available for 144 children (80 girls and 64 boys). 33% of these were stunted, 5% wasted, 14% underweight and about 60 % had a MUAC below 12cm. This was an indicator of the high level of child malnutrition in this area. 56% of the families were extended and 80% of the parents ended in primary school. 75% of the families had a monthly income between 0-50,000/=, the bore hole served as the main water source, 42% of the households consumed unboiled water. 70% never used family planning methods. There was heavy consumption of cereals and less of animal products.

CONCLUSION: Generally, there is a slight improvement in the nutrition status of children since 2012. Adequate nutrition is the fundamental right of every child. This study shows interplay of factors contributing to the high level of malnutrition among children under-five years in this area.

ABSTRACT 10

Description of congenital anomalies associated with omphalocele in children attended to in mulago hospital

Onyai Pitua Patrick¹ P.; Sekabira John²; Kakembo Nasser¹; Ssemakula Daniel¹; Muzira Arlene²

1- Makerere University College of health Sciences

2- Mulago National Referral Hospital

Introduction: Omphalocele is a common congenital midline abdominal wall defect. Its impact is great on new born infants and more severe in low and middle income countries (LMICs) where health care resources are limited. There is inadequate description and documentation of the associated congenital anomalies or birth defects in LMICs, Uganda inclusive.

Objective: The aim of the study was to describe the frequency and nature of birth defects associated with omphalocele amongst neonates.

Methods: A cross - sectional descriptive study with consecutive enrolment of all neonatal omphalocele in Mulago National Referral Hospital (MNRH) between June 2015 and March 2016. Participants underwent physical examination, ultrasonography of the abdomen, babygram, echocardiography and random blood sugar estimation. Data was collected on a designed questionnaire and univariate analysis performed using SSPS version 20 for frequencies and proportions.

Results: A total of 38 omphalocele cases were enrolled out of 30,003 neonates attended to with prevalence of 0.12%, F:M ratio of 1:1.1 and median age of 4 days (Range: 1 – 28 days). Full term delivery was 76 % (29/38) and 78.9% (30/38) of the neonates weighed 2.5 kg and above. Antenatal care attendance and folic acid usage was 100% (38/38). The commonest syndrome was Beckwith –

Wiedemann (26%; 10/38), pentalogy of Cantrell (3%; 1/38). Cardiac birth defects was (10.5%; 4/38) and musculoskeletal system (13.2%; 5/38).

Conclusion: Omphalocele was still a rare congenital anomaly and the commonest syndrome associated with it was Beckwith – Wiedemann. Sonographic and radiologic investigations are needed to assess the associated defects.

SUB THEME: BIOINFORMATICS

ABSTRACT 11

Learning Bioinformatics in Resource Limited Settings Using a Mentorship Approach

Gerald Mboowa^{1,2}, Ivan Sserwadda¹, Marion Amujal^{1,2}, Faith Nakazzi¹, Monica Mbabazi², Robert Kakaire⁴, Daudi Jjingo³, David Kateete^{1,2}, Moses Joloba^{1,2}, Christopher C Whalen^{4,\$}

¹Department of Immunology and Molecular Biology, College of Health Sciences, Makerere University, Uganda

²Department of Medical Microbiology, College of Health Sciences, Makerere University, Uganda

³College of Computing and Information Science, Makerere University, Uganda

⁴University of Georgia, Athens, GA, United States

Address for correspondence:
Christopher C Whalen^{\$}

Keywords: Learning, Bioinformatics, Genomics

Background: Bioinformatics is rapidly evolving at a breakneck pace and is almost an inevitable component in biomedical research. Recent advances in molecular technologies such as high-throughput sequencing have resulted in a surfeit of data, in response to which the development of Bioinformatics software tools has advanced rapidly. As a consequence, Bioinformatics training has had to change and grow in parallel with this increased demand resulting in a training paradox as students vary in their knowledge of Bioinformatics and in their computer literacy. The current training methods usually take the format of 2-5 day hands-on courses that may be specific to a particular domain (e.g. RNA-Seq, Metagenomics, Genome assembly) or more generalised (e.g. Next generation sequencing data analysis). However often times these training programs merely stimulate the students, with only a few of these actually using any of the skills they were taught 6 months later. Therefore, the inevitable need to evolve from the traditional training programs which deceptively claim bioinformatics can be learnt in a week and incorporate a more comprehensive, robust and universal mentorship approach for effective and efficient capacity building in this rapidly evolving field. Here, we present a training model that enrolls a small number of bioinformatics enthusiastic trainees after their science bachelor's or master's degree to a one-year bioinformatics mentorship program at Makerere University.

Methods: The training is divided into four quarters where a range of Bioinformatics courses and hands-on practical sessions are taught in an interactive and

collaborative classroom-based approach. The program has a cocktail of skills to acquire ranging from the different sequencing technologies, genome assembly, annotation, mapping, phylogenetic analysis, metagenomics, R and Statistical genomics among others. In addition, the program contains a wet lab component, which equips students with skills in Molecular biology eg. DNA extraction, PCR, agarose gel electrophoresis and DNA sequencing among others. This unique curriculum is aimed at training bioinformaticians who use computational tools for understanding or solving biological problems that relate to genomic aspects from HIV and tuberculosis pathogen genomes, but also participate in applying research tools relevant to infectious diseases genomics. The students further had the privilege of presenting and attending a couple of conferences including the;"Host pathogen interaction and Basic Bioinformatics workshop of TB and HIV and the African Society for Bioinformatics and Computational Biology (ASBCB) & International Society for Computational Biology (ISCB) conference" among others. The above opportunities enabled them develop confidence and presentation skills, an integral component in the dissemination of scientific findings.

Results: In the first year of the program, we successfully trained two trainees and one of them has gone ahead to be part of the tutors for the second group of trainees. The second year has five trainees who currently have covered more than seven months of training. Our trainees are poised to pursue epidemiology, molecular biology, bioinformatics or genomics based PhD studies.

Conclusions: In institutions where there is not enough human resource and expertise to run approved bioinformatics accredited graduate training programs, a few trained personnel can utilize the above model to train a quorum of individuals in Bioinformatics. This sets the foundation from which a graduate training program in Bioinformatics can be developed and implemented while utilizing the available local human expertise and resources.

SUB THEME: IMPLEMENTATION SCIENCE

ABSTRACT 12

Low adherence to disaster preparedness measures at Kilembe Mines Hospital in Kasese District: implications for public health disaster management

Ronald Kareodu^{1, 2, 3} Jonathan Izudi¹ John Bosco Alege¹

Institutional affiliations

1. Institute of Public Health and Management, Clarke International University
2. John Snow Research and Consultancy Center (JSRCC-U)
3. Nations Rescue Team-Uganda (NRT-U)

Corresponding Author

Ronald Kareodu

Email: rkareodu84@gmail.com

Introduction: Public health disasters remain a significant problem in both developed and developing countries, and are marked by significant morbidity and mortality. In healthcare settings, information on level of disaster preparedness is scarce. We assessed the level and correlates of healthcare workers' adherence to disaster preparedness measures

at Kilembe Mines Hospital, Kasese district, Uganda.

Methods. This cross-sectional study involved 122 healthcare workers at Kilembe Mines Hospital in Kasese district. Participants were sampled by convenience method while data was collected using structured questionnaire, key informant interviews, and observation check-list. Univariate, bivariate, and multivariate analyses were conducted on quantitative data at 5% significance level in STATA, while a thematic network analysis was performed on qualitative data in ATLAS.ti.

Results. Of the 122 participants, 52 (43%) were males, 64 (53%) were aged 25-34 years and 92 (75%) were clinical staff. 11 (9.0%) adhered to disaster preparedness measures (95%CI [confidence interval]: 0.05-0.16). In bivariate and unadjusted analysis, periodic staff meetings on disaster issues ($p=0.002$), periodic electrical checks ($p=0.006$), periodic risk and vulnerability assessments ($p<0.001$), and knowledge on right measures for likely disasters ($p=0.016$) were significantly associated with adherence to disaster preparedness measures. Via stepwise multivariable logistic regression analysis, periodic risk, hazard and vulnerability assessments (Adjusted Odds Ratio (AOR), 14.29; 95%CI, 3.20-63.83; $p<0.001$), and knowledge on correct measures for likely disasters (AOR, 11.56; 95%CI, 1.33-100.66; $p=0.027$) were significantly associated with adherence to disaster preparedness measures.

Conclusion: Adherence to disaster preparedness measures is low at Kilembe Mines Hospital. Routine assessment of healthcare settings for risks, hazards and vulnerability, and empowering staff on various preparedness measures are urgently needed. These findings suggest the need to enforce the Uganda Occupational Health and Safety Act.

ABSTRACT 13

Socioeconomic indicators and sexually transmitted infections prevalence in Uganda: using a hierarchical statistical approach on a nationally representative data.

Godwin Anguzu^{1,2}, Andrew Flynn^{1,3}, Joseph Musazi¹, Ronnie Kasirye¹, Agnes N Kiragga¹, and Andrew Mujugira^{1,4}

¹ Infectious Diseases Institute, Makerere University, Kampala, Uganda

² School of Statistics and Applied Economics, Makerere University, Kampala, Uganda

³ University of Colorado, Aurora, USA

⁴ Department of Global Health, University of Washington, Seattle, USA

Background. The association between socioeconomic status (SES) and sexually transmitted infection (STI) prevalence in resource-limited settings is mixed, with prior studies showing bidirectional correlations. A better understanding of the relationship between SES and STIs is needed to inform prevention and care strategies.

Methods: We conducted a secondary analysis of data from Uganda Demographic and Health Survey (UDHS 2011). The primary outcome (STI prevalence) was self-reported STIs and/or symptoms in the prior 12 months. The primary SES measure was the wealth index (poorest, poorer, middle, richer, richest), a composite measure of each household's cumulative living standard constructed using principal component analysis. We examined associations between SES measures and risk of STIs using a multi-level mixed effects Poisson regression model.

Results: Of 9,256 sexually active adults, 7,428 women (mean age 30 years, standard deviation [SD] 8.7) and 1,828 men (mean age 31 years, SD 8.6) were included in the analysis. At individual level, middle wealth quintile (adjusted incidence rate ratio [aIRR]

1.17; 95% CI: 1.02-1.34) and disposable income (aIRR 1.30; 95% CI: 1.15-1.47) were associated with STI prevalence, whereas being in the richest wealth quintile (aIRR 0.86; 95% CI: 0.75-0.97) was protective. Residence in wealthier regions ([aIRR] 3.92, 3.62, and 2.75, for Central, Western and Eastern regions; $p < 0.01$ was associated with increased STI risk. However, older age (aIRR 0.74; 95% CI: 0.62-0.89) and any educational attainment (test for no departure from linear trend, $p = 0.13$) were protective. Regional level analysis revealed stochastic variability of STI prevalence across geographical region (variance 0.03; $p = 0.01$).

Conclusions: The bidirectional association between SES and STI prevalence underscores the need for multi-sectoral interventions to address the upstream effect of poverty on STI risk and downstream effect of STIs on health and economic productivity. Prevention efforts should be targeted at middle-income residents of wealthy regions.

ABSTRACT 14

Assessing the utilization of insecticide Treated Mosquito Nets and people's attitude towards Indoor Residual Spraying in highly endemic Namutumba District in Eastern Uganda.

Authors: Jonathan Nkalubo, Faridah Mugala
Affiliation: Makerere University College of Health Sciences

Corresponding author:
nkalubo11@gmail.com, +256700117174

Problem statement: Nsinze Village in Namutumba district reports the highest cases of malaria in Namutumba district each year. During a community diagnosis done in June 2017, Malaria accounted for 83% of the disease burden for this village.

Background: Malaria is an entrenched global health challenge particularly in the sub-Saharan African countries. Uganda ranks as 6th among African countries with high malaria-related mortality rates. Uganda also has the world's highest malaria incidence, with a rate of 478 cases per 1,000 population per year. Insecticide-treated bed-nets have shown to reduce malaria cases by 50% and Indoor Residual Spraying by 40% countrywide. However, improper handling, human behavior and perception can diminish their effectiveness. We assessed community knowledge, attitudes, and practices on malaria prevention as well as acceptability to indoor residual spraying

Methods: A cross-sectional descriptive study was done. 36 households were chosen by simple random sampling. Interviewer administered questionnaires and observational checklists were used to gather information. Key informant interviews with local leaders and district health officials were conducted and records for coverage of ITN distribution and IRS were reviewed.

Results: Of the 36 households, 56% of respondents associated the disease with mosquito bites. Bed nets were used by 42% and usage was significantly associated with education level. The level of bed net ownership was 77.3%. The rest used them for other purposes. Most respondents (80%) agreed with indoor residual spraying of insecticides.

Conclusion: It is therefore imperative that special education on prevention of malaria should be intensified by the National Malaria Control Programme in all the regions in order to reduce malaria prevalence.

ABSTRACT 15

Yield of HIV positives by modality for HIV testing in Kampala, Uganda: MJAP experience.

Mary Mbuliro¹; Jennifer Ngabirwe¹, Happy walusaga¹; Jennifer Namusobya¹; Dalsone Kwarisiima¹, Gloria Karirirwe¹ and Fred C Semitala^{1, 2}

1. Makerere University Joint AIDS Programs
2. Department of Medicine, Makerere University College of Health Sciences

Background: Identifying un diagnosed people living with HIV (PHLIV) remains a major priority for the HIV epidemic control in Uganda. Finding this population requires use of targeted HIV testing interventions (TIs).Makerere University Joint AIDS Program (MJAP) has implemented some (TIs) including: index testing (IT), assisted partner notification (APN) and targeted community testing (TCT) for high risk groups including sex workers, intravenous drug users, TB patients and negative partners in HIV discordant couples. We evaluated the HIV positives identified per number offered a test(yield), for each HIV testing modality

Methods: In this cross sectional study HIV testing was performed using the Uganda HIV testing algorithm at three MJAP supported HIV clinics in Kampala (Mulago AIDS Clinic, Butabika IDC Clinic and HIV Clinic-Kiruddu hospital) and their catchment communities. We included patients aged at least 15 years. Data on age, sex, HIV testing modality was extracted from the HCT records. We summarized the data using proportions, means and medians as appropriate and compared the yield per testing modality.

Results: Between 26th February 2018 and 22nd June 2018, 5013 clients were tested through different modalities. Of those tested 52%(2623) were females, median age 28 years,(IQR, 23-36).The overall yield was 6%(311),65 % (203) of whom were females. The yield attained through the different modalities was as follow: APN (28 %), patients with TB (17 %), IT (10 %) and TCT(7 %).While In-patient (3 %), outpatient (5 %), and discordant couple testing (0 %).

Conclusion: Targeted interventions that include APN, IT, TCT which identify up to three in every ten high risk groups should be prioritized to optimize identification of the remaining HIV positive individuals in Uganda.

ABSTRACT 16

Setting the National Malaria Research Agenda for Malaria Elimination: Experiences of a local context

Kuule J K¹, Kigozi R², Kyabayinze D³, Maiteke C³, Kyambadde P¹, Naturinda R¹, Tuhaise V¹, Kalungi D¹, Kagulire C¹, Mbaka P⁴, Katureebe C⁴, Bayo S. F⁴Okware S⁵

1. Uganda Malaria Research Centre, Ministry of Health
2. Malaria Action Plan for Districts, MAPD
3. National Malaria Control Programme, Ministry of Health
4. World Health Organization
5. Uganda National Health Research Organization

Corresponding author:

DrKuule Julius Kabbali,
Head, Uganda Malaria Research Centre,
Tel. No. +256 772 643 803
Email: jkkuule2000@yahoo.com

Background: Uganda is preparing to transition from malaria control to malaria

elimination by 2020 and has intensified malaria control interventions including mass distribution of LLINs, carrying out IRIS in selected high burden districts, enhanced drug and laboratory supplies. Setting an operational research (OR) agenda is a crucial step in implementing malaria control/ elimination strategies at all levels and leads to benefits including program effectiveness, efficiency, and sustainability as obtained from research evidence for optimal impact.

Methods: Stakeholder analysis was conducted between the months of July-October 2016 and all past, on-going and planned malaria focused-OR activities were documented. The OR activities were grouped into the following seven themes, thus: (1) Case management, (2) Diagnostics, (3) Vector control, (4) Surveillance and M&E, (5) Socio-Behavioral change and communications, (6) Malaria economics and (7) Program management. The different themes were discussed in small groups of experts that generated and prioritized OR topics that were then presented to the plenary for further discussion. These OR topics were then ranked using an adopted scoring system.

Results: Of the 13 OR topics generated, the top four ranked studies were: 1) Malaria vector bionomic studies including EIR, 2) Cost effectiveness of malaria interventions, 3) Quality of the diagnostics – assessment and strengthening the QA diagnostics system, 4) Operationalizing community based surveillance linked to Health Facility in selected districts.

Conclusion: This national research agenda is intended to promote evidence-based planning in the implementation of malaria control interventions as a precursor to malaria elimination.

Keywords: Malaria elimination, Uganda, Operational research, Research Agenda

ABSTRACT 17

Implementing malaria mass drug administration: experience from a high transmission setting in North Eastern Uganda

Authors: Ronald Mulebeke^{1*}, Fred Bukenya¹, Humphrey Wanzira¹, Thomas Eganyu¹, Jean-Pierre Van geertruyden³, Dorothy Echodu¹, Adoke Yeka²

Introduction:

Mass drug administration (MDA) is one of the suggested means to accelerate efforts towards elimination and attainment of malaria-free status. There is limited evidence of optimum methods of implementing MDA programme such as promoting community participation and compliance with treatment in low income countries. We describe experience of implementing a population-based MDA using dihydroartemisinin-piperazine (DHAPQ) delivered using a fixed distribution strategy in Kapujan sub-county, an area of high malaria transmission in North Eastern Uganda.

Methods:

MDA was implemented in a study to assess the impact of population based MDA in combination with indoor residual spraying (IRS) and IRS alone in a high transmission setting in Uganda. Four rounds of interventions are planned over a period of two years at six months intervals. A baseline housing and population census was conducted in the target area to establish the eligible population. Household members were screened and eligible participants consented for MDA. A database for all eligible persons was created. The population was sensitized at all levels through meetings, and use of mass media.

Established village meeting points were used as MDA distribution sites at every village such as, schools, sub-county headquarters and village meeting centers. A team of 19 personnel comprising health workers, data officers and community resource personnel conducted the exercise at each distribution site for 4 days in 18 villages over a total period of 15 days. The first dose of DHAPQ was directly observed on site. Health workers were used to follow up participants to monitor completion of the second and third doses.

Results

With a baseline population of 14,468 people living in 2490 households, MDA coverage of 85% was achieved for the first round and 75.5% for the second round. Adherence to all three doses of treatment in the second round of interventions was 76.5% for first dose, 75.02% for second dose and 75.00% for third dose.

Conclusion

Using community structures facilitates community participation and adherence to MDA. The best timing of the distribution is when school children were for holidays and during the dry season.

SUB THEME: HIV/MALARIA AND OTHER INFECTIONS

ABSTRACT 18

Infant HIV testing at 6-weeks in Kampala, Uganda: the unacceptable time points and why

¹ Jonathan Izudi, ¹Sylvia Auma, ¹John Bosco Alege

Institutional affiliation

1. Institute of Public Health and Management, Clarke International University, Kampala, Uganda.

Corresponding author

Jonathan Izudi | Email: jonahzd@gmail.com

Background. Substantial number of Human Immunodeficiency Virus (HIV) exposed infants delay accessing HIV diagnosis at 6-weeks. We assessed the timing and correlates of HIV testing at 6-weeks among HIV Exposed Infants (HEIs) at Kisenyi Health Center, Kampala district.

Methods and materials. This cross-sectional study involved 246 mother-HEI pairs. Data collected by structured questionnaire was entered in Epi-Data and analyzed in STATA at 5% significance level. HIV testing outcomes were: none, early (before 6-weeks), timely (6-8 weeks), and late (after 8-weeks). Multinomial logistic regression was used. Results were presented with adjusted Relative Risk Ratio (RRR) and 95% confidence interval (CI).

Results. Pattern of HIV testing were: 132 (53.7%) none, 50 (20.3%) early, 48 (19.5%) timely, and 16 (6.5%) late. Compared to non-HIV testing, maternal knowledge of HIV transmission during pregnancy, labor and delivery, and breastfeeding was associated with early (RRR, 3.13; 95% CI, 1.17-8.38) and timely (RRR, 4.42; 95% CI, 1.65-11.85) HIV testing. Maternal disclosure of HIV sero-status was associated with late HIV testing (RRR, 6.74; 95% CI, 1.53-29.80), while four or more ANC visits was associated with early (RRR, 3.07; 95% CI, 1.13-8.29) but not timely (RRR, 2.64; 95% CI: 0.94-7.42) or late (RRR, 2.74; 95% CI: 0.57-13.30) HIV testing. Maternal age, marital and employment status, knowledge of EID testing frequency and timing, time and distance were not significant.

Conclusion: Most HEIs are not tested for HIV at 6-weeks and many are tested at wrong time points at Kisenyi Health Center. Maternal knowledge of HIV transmission increased timely HIV testing while standard ANC visits increase early HIV testing, at 6-weeks. Correct maternal health education on HIV testing time points, frequency, and importance are needed to ensure timely use of EID services.

ABSTRACT 19

Isoniazid preventive therapy for hiv infected children in mid-northern uganda: a quality improvement intervention

Adrawa .N.¹, Ekwamu .D.¹, Higenyi .J.¹, Omony .E.¹, Izudi .J.^{2,3}

1. The AIDS Support Organization (TASO) Gulu, Uganda
2. Institute of Public Health and Management, Clarke International University, Kampala Uganda
3. Baylor College of Medicine Children's Foundation Uganda

adrawanorbert@gmail.com | Mob: +256 782821503

Background. Globally, there is a substantial increase in the burden of tuberculosis (TB) among children and prophylaxis with Isoniazid is recommended. Data from the AIDS Support Organization (TASO) indicates that merely one in four HIV-positive children are started on Isoniazid Preventive Therapy (IPT), far below recommended standard. We initiated a quality improvement (QI) study to raise the proportion of children aged 1-15 years started on IPT from 24% in December 2016 to 80% in June 2017.

Methods. We constituted a Work Improvement Team (WIT) to identify and address healthcare performance gaps through QI initiatives. The WIT with support from TASO reviewed routinely collected data and identified low IPT provision among HIV

infected children 1-15 years as major gap, which was prioritized by three rounds of multi-voting. Root-cause analysis was conducted using the fish-bone tool and potential causes included; lack of parental awareness, missing registers, inadequate knowledge of IPT among healthcare workers (HCWs), unflagged files and shortage of HCWs. Improvement changes developed and tested included; orientation of staff on IPT through Continuous Medical Education (CME), parental health education, introduction of IPT register which was filled by expert clients, and flagging of files for children eligible for IPT. The Plan-Do-Study-Act (PDSA) cycle was used to implement the improvement changes.

Results: IPT provision increased from 24% (118/489) in December 2016 to 47.3% (186/435) by February 2017 via CME. However, between February and March 2017, only 48.4% (236/488) of children were provided IPT. This stagnation was due to stock out of Isoniazid tablets which was addressed through procuring new stock. With introduction of parental health education, IPT provision increased to 82.2% (402/489) in May 2017. By June 2017, 86% (411/478) of eligible children were on IPT following the use of expert clients to document IPT use.

Conclusions. In this QI intervention, IPT use increased by sensitizing HCWs on IPT eligibility criteria, parental health education, use of expert clients to document IPT use, and flagging files of eligible children for IPT. We recommend health facilities in Uganda to use QI initiatives based on systematic root-cause analysis, and to use context-specific solutions to address gaps in IPT uptake. Besides, these interventions may be replicated in settings with similar challenges.

ABSTRACT 20

Can intensive adherence counseling improve viral load non suppression?the virologic aftermath from a rural hiv clinic in taso soroti, eastern uganda

Otaala t; Andrew e; Acham w
Affiliations: TASO Uganda Limited

Background:Intensive Adherence Counseling (IAC)is counseling presented to patients with non-suppressed Viral Loads (VLs). A multi-disciplinary team identifies obstacles, possible solutions and prepares a road map to adherence. Data of 2017 from Central Public Health Laboratories (CPHL) indicated 3269 clients having non-suppressed VLs. 1100 IACs were done, 700 suppressed and 400 needed resistance testing (vldash.cphluganda.go.ug).Soroti hub had 768 non-suppressed VLs between June 2015 – Dec 2016 while TASO Soroti had 150.We sought to determine the virologic outcome for clients that completed all their IAC sessionsbetween June 2015 – December 2017 in TASO Soroti.

Methodology: A Retrospective study that looked at correlates of a second non-suppressed VL after a first non-suppressed VL and three IAC sessions was conducted on 100 randomly selected records between June 2015– December 2017 at TASO Soroti Center of Excellence HIV Clinic in eastern Uganda. Data was extracted from the national CPHLVL dashboard and non-suppressed register and recorded into excel sheets. Analysis was done using STATA version 13

software and different variables were determined.

Results:65% of the clients were non-suppressed. 60% (n=39) of the non-suppressed clients were males. However, there was no significant relationship between sex and suppression status.

Males weremore likely to be non-suppressed (OR=2.25, p-value=0.06). Adolescents and children were 3 times more likely to be non-suppressed compared to adults.

Conclusions: Most clients will have VL non-suppression after IAC with males and adolescents being predominant. If the third 90 is to be achieved, we must re think around strategies to support these categories otherwise the UNAIDS 2020 goal shall remain a dream.Extensive studies to assess the quality of IACs and treat failure need to be explored.

ABSTRACT 21

Caregiver Stress, Socio-emotional adjustment and Quality of Lifein HIV-affected and Unaffected Ugandan school-aged children

Amara E. Ezeamama¹; Sarah K. Zalwango²; Alla Sikorskii¹ ; Jenifer Fenton¹; Philippa M. Musoke³; Bruno Giordani;⁴Michael J. Boivin¹.

¹ Michigan State University, East Lansing, MI;²Kampala Capital City Authority, ³Makerere University, Kampala, Uganda⁴ University of Michigan, Ann Arbor, MI

Background: Toxic stressors abound in HIV-affected populations with poorly understood impact on socio-emotional adjustment (SEA) and quality of life (QOL). We investigate the hypothesis that toxic stress is associated with impaired SEA and low QOL in HIV-affected and unaffected Ugandan children.

Methodology: We enrolled 245 caregivers and their 305 six to ten years old children with and without perinatal HIV-infection/exposure. SEA indices— externalizing problems, internalizing problems, behavioral symptoms index (BSI) and adaptive skills index (ASI) – in enrolled children were calculated based on caregiver responses to 175 questions from the Behavior Assessment System for Children questionnaire. For each SEA index, age- and sex standardized z-scores were calculated. Child QOL was measured using the pediatric QOL inventory while acute stress was measured using the perceived stress scale (PSS) as sum of ten items reflecting stressful experiences in prior month. Both QOL and SEA were analyzed as continuous responses. PSS was analyzed in categories where four highest quintiles were compared to the lowest stress quintile. Stress related percent differences and standardized mean differences (SMD) for QOL and SEA respectively, with their corresponding 95% confidence intervals (CI) were calculated from linear regression models implemented in SAS v.9.4.

Results: QOL decreased by as much as 9% (95% CI: -2.8, -15.2), BSI (SMD=0.9, 95% CI: 0.52, 1.25), externalizing (SMD=0.66, 95% CI: 0.35-0.98) and internalizing (SMD=0.63, 95% CI: 0.3-1.1) problems increased whereas ASI was moderately lower (SMD:-0.52, 95% CI: -1.0, -0.2) for children whose caregivers reported the highest vs. lowest level of acute stress.

Conclusion: High levels of caregiver stress was associated with lower QOL, moderate deficits in adaptive skills, higher behavioral symptoms and elevations of externalizing and internalizing problems and behavioral in their dependent children. Thus, interventions that build resiliency in caregivers by enhancing their ability to cope with toxic stress may benefit the QOL and SEA of their dependent children.

ABSTRACT 22

Increasing the percentage of newly identified HIV Positive clients enrolled on ART in the same week at Jinja Regional Referral Hospital.

Mboyo

Margret, Nalunkuuma Aminah, Natukunda Susan, Akiror Janet, Lubega John Paul, Namazuba Monica, Immaculate, Mulangira Aggrey

, Arim Jane, Martin Mugisha, Arnold Muwonge, Augustin Muhwezi (Jinja Regional Referral Hospital/USAID-RHITES-EC)

Background: During a facility performance review meeting carried at Jinja regional hospital in February 2018, the team discovered that not all newly identified HIV positive patients had been started on ART (Anti Retro Viral Therapy), despite the Ministry of Health recommendation for same day initiation. The ART Clinic team started a project to increase the percentage of newly identified positive clients initiated on ART from 40 % to 80% by the end of June 2018. By increasing the number of HIV positives initiated on ART would contribute to achievement of the UNAIDS second 90, and reduce the risk of HIV transmission and ensure clients live a quality life thereafter.

Methods: Through the facility performance review meeting, comparison of number of newly identified HIV positives (HTS Register) was compared to the number initiated on ART in the same week (ART Register). The facility staff had a brainstorming session on the possible causes and suggested solutions to improving this performance. Re-enforcing of the HTS team at OPD with experienced Counselors/Medical social worker to support Pre and Posttest counseling. Involvement of clinicians in index testing so as to enhance starting on ART and also treatment of opportunistic infections in identified clients. Modified posttest counseling messages encouraging new positives to enroll on ART at the same facility as they explore future ART treatment options.

Results: After brainstorming prioritization on which areas to work on first was done using a prioritization matrix with the following scoring out of fifteen. Team Composition for index Testing 13, Medical personnel /counselor involvement 12, Stigma and Discrimination 9, Fear of lifelong ART 10, Information Gap among clients 12, Critically ill Patients 8. The team considered starting with areas of focus with the highest score in terms of gap, feasibility and affordability

Conclusion: Tailored messages about the benefits initiation on ART for all the newly diagnosed with HIV starts right away from the time of giving health education hence facing less resistance from the clients at posttest counseling and Pre - ART preparation. Reinforcement of the HTS team at OPD with experienced medical social workers to support in the pre and posttest counseling, with involvement of clinicians during team composition for index testing has greatly

enhanced same week initiation of ART clients. We have greatly reduced on the idea of giving clients alternatives on where to start ART from, instead all newly diagnosed are encouraged to start ART from the same facility and later transferred out to other nearby facilities of their choice.

ABSTRACT 23

Parasite Clearance following Treatment of Severe Malaria with Intravenous Artesunate in Ugandan Children.

Authors and affiliations

Pauline Byakika-Kibwika^{1,2}, Patience Nyakato²,
Mohammed Lamorde², Agnes N. Kiragga²

¹Department of Medicine, Makerere University, Kampala, Uganda

²Infectious Diseases Institute, Kampala, Uganda

Pauline Byakika-Kibwika, Department of Medicine, College of Health Sciences, Makerere University P. O. Box 7072 Kampala, Uganda, Tel +256 772 626885, email: pbyakika@gmail.com

Background: Malaria control largely depends on availability of highly efficacious drugs, however, over the years, has been threatened by emergence of drug resistance. It is therefore important to monitor the impact of recurrent antimalarial treatment on the long term efficacy of antimalarial regimens especially in areas with high malaria transmission such as sub-Saharan Africa. We present an evaluation of parasite clearance following treatment of severe malaria with intravenous artesunate among

patients in Eastern Uganda, as a contribution to monitoring antimalarial effectiveness.

Methods: We analyzed parasite clearance data from a clinical trial whose objective was to evaluate the 42-day parasitological treatment outcomes and safety following treatment of severe malaria with intravenous artesunate plus artemisinin based combination therapy among patients attending Tororo District Hospital in Eastern Uganda. Serial blood smears were performed at 0, 1, 2, 4, 6, 8, 10, 12, 16, 20, 24 hours, followed by 6 hourly blood smears post start of treatment until 6 hours post the first negative blood smear when parasite clearance was achieved. Study endpoints were; parasite clearance half-life (the time required for parasitemia to decrease by 50% based on the linear portion of the parasite clearance slope) and parasite clearance time (time required for complete clearance of initial parasitemia).

Results: We enrolled 150 participants with severe malaria and all were treated with intravenous artesunate. All study participants tolerated artesunate well with rapid recovery from symptoms and ability to take oral medication within 24 hours. No immediate adverse events were recorded. The median (IQR) number of days to complete parasite clearance (PCT) was of 2 (1-2). The median (IQR) time to clear 50% and 99% parasites was 4.8 (3.61-7.10) and 17.55 (14.66 – 20.66) hours respectively. The median estimated clearance rate constant per hour was 0.32. The median (IQR) slope half-life was 2.15 (1.64, 2.61) hours.

Conclusion: Our results demonstrate rapid and adequate parasite clearance following treatment with intravenous artesunate and provide supportive evidence that resistance to artemisinins is unlikely to have emerged in this study area.

The study was registered with the Pan African Clinical Trial Registry (PACTR201110000321348).

SUB THEME: HEALTH SYSTEM STRENGTHENING

ABSTRACT 24

Impact of complication-related antenatal health education on maternal health services: a propensity score-matched analysis

¹⁻⁴Jonathan Izudi, ⁵Denise Akwang Grace, ¹Francis Bajunirwe, ⁶Damazo Kadendgye

Author affiliations

1. IE Catalyst, East African Social Sciences Translation (EASST) program.
2. Centre for Effective Global Action, UC Berkeley, USA.
3. Department of Community Health, Mbarara University of Science and Technology, Uganda.
4. Institute of Public Health and Management, Clarke International University, Kampala, Uganda.
5. Doctors without Borders (CUAMM), Western Equatorial State, South Sudan.
6. African Population Health Research Center (APHRC), Nairobi, Kenya.

Correspondence

Jonathan Izudi | E-mail: jonahzd@gmail.com

Background. High maternal mortality is a global public health problem. Complication-related antenatal care health education (CAHE) is critical in ensuring pregnant mothers attend all needed maternal health services. We evaluated the impact of CAHE on use of maternal health services: 1) number of ANC visits, 2) delivery in a health facility, and 3) postnatal care (PNC) use within 2-7 days in Mundri East County, South Sudan

Methods. We simulated a randomized controlled trial from an observational data on 385 mothers using propensity score-matched analysis. Women who received CAHE (intervention/treated) group) were matched with those who did not (control/untreated group). Propensity scores (PS) were generated from covariates that were empirically and theoretically associated with both CAHE and maternal health services in a logit model. The PS and individual covariates were balanced across the treatment groups using kernel matching. Standardized mean difference (SMD) and standardized variance ratio (SVR) close to zero or one, respectively were considered indicative of good covariate balance. We computed average treatment effect (ATE) and average treatment effect on the treated (ATT), reflecting impact of CAHE in the population and among mothers who received CAHE, respectively. We performed logistic regression analysis for delivery and postnatal care use, and modified Poisson regression analysis for number of ANC visits, in both matched and unmatched data, using CAHE as independent variable.

Results. CAHE increased use of maternal health services, in the general population and among study participants. In PS-matched regression analysis (171 mothers who received CAHE and 200 who did not), CAHE was associated with number of ANC visits (Risk

Ratio (RR), 2.16; 95% CI, 1.74-2.67), delivery in a health facility (Odds Ratio, OR), 8.29; 95% CI, 5.13-13.39) and postnatal care use within 2-7 days (OR, 4.72; 95% CI, 2.25-9.87).

Conclusion. CAHE optimized use of maternal health services in the post-conflict Mundri East County, South Sudan. Healthcare workers should continue to provide CAHE for improved maternal and newborn health and survival.

Key words: Antenatal care, skilled birth attendance, postnatal care, propensity score analysis

ABSTRACT 25

Retention of HIV-Positive Adolescents in Care: A Quality Improvement Intervention in Mid-Western Uganda

¹Jonathan Izudi, ²John Mugenyi, ²Mary Mugabekazi, ²Benjamin Muwanika, ²Victor Tumukunde Spector, ²Andrew Katawera, and ²Adeodata Kekitiinwa

Institutional affiliations

1. Baylor College of Medicine Children's Foundation Uganda.
2. Kyenjojo District Local Government.

Corresponding author

Jonathan Izudi | Email: jonahzd@gmail.com

Background. Low retention of HIV-positive adolescents in care is a major problem across HIV programs. Approximately 70% of adolescents were non-retained in care at Katooke Health Center, Mid-Western Uganda. Consequently, a quality improvement (QI) project was started to increase retention from 29.3% in May 2016 to 90% in May 2017.

Methods. In May 2016, we analyzed data for retention, prioritized gaps with theme-matrix selection, analyzed root causes with fishbone

diagram, developed site-specific improvement changes and prioritized with countermeasures matrix, and implemented improvement changes with Plan-Do-Study-Act (PDSA). Identified root causes were missing follow-up strategy, stigma and discrimination, difficult health facility access, and missing scheduled appointments. Interventions tested included generating list of adolescents who missed scheduled appointments, use of mobile phone technology, and linkage of adolescents to nearest health facilities (PDSA 1), Adolescent Only Clinic (PDSA2), and monthly meetings to address care and treatment challenges (PDSA 3).

Results. Retention increased from 17 (29.3%) in May 2016 to 60 (96.7%) in August 2016 and was maintained above 90% until May 2017 (with exception of February and May 2017 recording 100% retention levels).

Conclusion. Context specific, integrated, adolescent-centered interventions implemented using rigorous QI initiatives significantly improved retention in Mid-Western Uganda. In particular, tracking adolescents who missed clinic appointments, linkage of far adolescents to nearby health facilities, startup of adolescent only clinic, and tackling of adolescent HIV care challenges via meetings improved retention. We recommend the replication of these interventions at health facilities facing similar challenges in Uganda and beyond.

ABSTRACT 26

Determinants of skilled birth attendance among women: a comparison of lower and higher level health facilities in South Sudan

^aJonathan Izudi, ^{b,c}Grace Denise Akwang

- a. Clarke International University, Institute of Public Health and Management.
- b. Uganda Christian University, Mukono, Uganda.

- c. Doctors without Borders (CUAMM), Western Equatoria State, South Sudan.

Corresponding author

Jonathan Izudi | Email: jonahzd@gmail.com

Background. More maternal deaths occur in developing than developed countries and skilled birth attendance (SBA) can reduce these deaths. However, use of SBA is highly variable between low and high level health facilities for unidentified reasons. We investigated factors associated with SBA among women in lower and higher level health facilities in Mundri East County, South Sudan.

Methods and materials. We conducted an analytical cross-sectional study involving 385 postpartum mothers across 10 health facilities. Data was collected using structured questionnaire, entered in Epi-Data and exported to STATA for univariate, bivariate, and multivariate analysis at 5% significance level. Multi-collinearity test and multiple imputation using chained equations were performed to correct for collinearity and missing data, respectively. Results were presented with publication quality tables, adjusted risk ratio (ARR), and confidence interval (CI).

Results: 124 (32.2%) participants were aged 18-24 years, 151 (39.2%) never attended ANC visits while 202 (52.6%) had less than four visits. 138 (35.8%) had SBA: 69 (28.4%) in low and 69 (48.5%) in high level health facilities. In adjusted analysis, compared to women who never received ANC, receipt of less than four ANC visits was associated with SBA among women in low (ARR, 18.31; 95% CI, 3.20-104.60) and high (ARR, 4.04; 95% CI, 1.38-11.88) level health facilities. Also, four or more ANC visits was associated with SBA in low (ARR, 37.64; 95% CI, 5.41-261.82) and high (ARR, 6.89; 95% CI, 1.76-

26.92) level health facilities. Maternal knowledge of postpartum complications was associated with SBA in low (ARR, 4.47; 95% CI, 2.02-9.90) but not in high (ARR, 1.27; 95% CI, 0.67-2.41) level health facilities.

Conclusion. SBA was unacceptable low in Mundri East County, more reduced in lower than higher level health facilities. ANC visits increased SBA in both lower and higher level health facilities. However, maternal knowledge of postpartum complications increased SBA at lower but not higher level health facilities. Health facilities in Mundri East County, South Sudan should provide high-quality standard ANC visits to all pregnant mothers in order to optimize SBA.

ABSTRACT 27

Developing Media to Promote Community Awareness of Early Detection of Kaposi's Sarcoma in Africa

Topic: Cancer

Miriam Laker-Oketta¹, Lisa Butler², Philippa Makanga¹, Toby Maurer³, Edward Mbidde⁴, & Jeffrey Martin³

¹*Infectious Diseases Institute, Kampala, Uganda;*

²*University of Connecticut, Storrs, Connecticut;*

³*University of California, San Francisco; and*

⁴*Uganda Virus Research Institute, Entebbe, Uganda*

Background: Despite overt presentation on the skin, most Kaposi's sarcoma (KS) in Africa is diagnosed too late for effective treatment. Training health workers about early recognition of KS can increase knowledge but is only clinically impactful if providers actually encounter early KS (i.e., if patients with early KS present to care). Indeed, recent work from Zimbabwe showed that facility-based KS training failed to increase early diagnosis, which is unsurprising given the public's lack of KS awareness. We hypothesized that educating affected populations about KS is critical in making

progress in early detection and that enhanced community awareness about KS can be achieved through exposure to common media.

Methods: Working in Uganda, we employed community-engaged research to learn about health-related behavior in the context of skin disease, craft a culturally appropriate educational theme regarding detection of KS and develop 3 forms of media. We interacted with KS survivors, HIV-infected patients, facility-based and community health workers, traditional healers, and media professionals. We tested our media among adults at community-based venues in rural Uganda. Participants were randomized to be exposed to 1 of the 3 media and evaluated for change in knowledge and attitudes concerning KS before and after exposure to the media.

Results: In comics, 90-second radio plays, and a 10-minute film, we developed a 3-part theme aimed to the public: "Look" meaning to regularly examine one's skin/mouth; "Show" to bring to the attention of a health worker any skin changes; and "Test" to remind providers about skin biopsy for diagnosis. Among 240 participants exposed to the media, median age was 30 years, 50% were women, 6% HIV-infected, and 60% literate. Exposure to the media resulted in increases in the ability to recognize/name KS (+47%), awareness that anyone is at risk for KS (+15%), and knowledge of how to prevent KS from becoming a substantial problem (+34%).

Conclusion: Featuring a theme "Look", "Show", "Test", we developed media (comics, radio plays, film) for the public in Africa about early detection of KS. Exposure to these media resulted in increases in knowledge and change in attitudes concerning KS. Although the increases in knowledge were not large, they may be as much as can be expected from a single exposure. Optimal outcomes will likely require multiple exposures and facilitated discussions. The media elements are freely available online.

ABSTRACT 28

Integrating Cervical Cancer Screening into routine HIV clinical care for women: A retrospective study of adherence to screening guidelines in an Urban HIV center in Uganda

Nabaggala Maria Sarah¹, Phelps Emma, Nakalema Shadia, Tibakabikoba Harriet, Zanika Bernadette, Kalule Ivan, Mohammed Lamorde, Castelnuovo Barbara, Kiragga Agnes

Corresponding author: Email: snabaggala@idi.co.ug; +256 783406531

Background

HIV-infected women remain at higher risk of Cervical Cancer compared to their negative peers (incidence rates of 7.3 vs 2.5 per 1,000 person years). The Uganda Ministry of Health recommends that all HIV-positive women under 50 years of age be screened annually using Visual Inspection with Acetic Acid (VIA) and a screen-and-treat approach where women with positive results immediately receive cryotherapy to remove abnormal cervical lesions. We assessed the rates of cervical cancer screening and adherence to screening guideline at the Infectious Diseases Institute (IDI), a non-profit organization that provides HIV care in Uganda.

Methods

The IDI integrated cervical cancer screening into routine HIV care in 2014 among women aged less than 50 years using VIA. Patients with a positive VIA result are referred to Uganda Cancer Institute (UCI) for treatment while those with a negative result are rescreened yearly. We undertook a retrospective cohort analysis of all active patients enrolled at IDI and having at least two clinic visits as of 31st July 2017. Descriptive statistics and frequency distributions were

used to describe continuous and categorical variables respectively using STATA 14.

Results

Out of 5,604 women, 4,373 were eligible for cervical cancer screening in the study period, 2,028/4,373 (46.4%) had ever screened, with median (IQR) time to screening of 2.3 (1.0-3.6) years. Majority of those who screened were married 1,040/2,028 (51.3%), with one to three children ever born 1,080/2,028 (53.3%), had two to five lifelong sexual partners 1,458/2,028 (71.9%), and were aged 15 to 24 at sexual debut 1,726/2,028 (85.1%). Of the women screened, 145/2,028 (7.2%) had a positive result at first screening and were all referred to UCI. Of 1,883/2,028 (92.8%) with a negative first screening result, 1,099/1,883 (58.4%) were eligible for annual repeat screening procedure and 439/1,099 (40.0%) received a second VIA test in the study period and 18/439 (4.1%) had a positive second VIA test result and were all referred to UCI. Of 421/439 (95.9%) that had a negative result at second screening, 140/421 (33.3%) were eligible for a third repeat cervical cancer screening and 52/140 (37.1%) were rescreened the third time. 2/52 (3.8%) had positive results from the third screening and were all referred to the UCI for treatment.

Conclusions

The rate of cervical cancer screening in this urban clinic was slightly higher than the estimated national baseline-screening rate of 30% in urban areas but lower than the national guidelines target of 80% screening coverage, despite high referral rates. We hypothesize that some of the challenges accrued to low screening were limited human resources, inadequate space and long waiting times. The findings emphasize need for additional measures geared towards increasing the number of HIV positive females screening for cervical cancer annually in a bid to adhere to the national set guidelines among this vulnerable population.

POSTER DISCUSSION

ABSTRACT PO1

The use of mobile portable ultrasound technology to improve antenatal care and prevention of mother to child transmission of HIV services in the Kigezi region of southwestern Uganda.

By Dr. Geoffrey Anguyo - Kigezi Healthcare Foundation (KIHEFO)

Malagala Abdallah Hakim – Kigezi Healthcare Foundation (KIHEFO)

ISSUES

This project was designed to use portable ultrasound technology to improve antenatal care and prevention of mother to child transmission of HIV services in the Kigezi region of southwestern Uganda. The objective of the project was to find out if the provision of free ultrasound services in the rural communities will increase the number of pregnant women coming to antenatal clinics in the established health units and community outreach clinics.

DESCRIPTION AND LESSONS LEARNT

The project has strengthened KIHEFO's current holistic maternal healthcare program and services by investing in a portable obstetric ultrasound system, and providing free ultrasound scan and HIV testing services to pregnant women living in rural communities of the Kigezi region of southwestern Uganda. The project aims to reduce high rates of maternal mortality through early diagnosis of high-risk and potential pregnancy complications, while educating women on the importance of accessing professional medical services. The project examined the antenatal clinic registers for the previous year that will serve as a

baseline before the introduction of the free ultrasound scan services. 287 women were reached with Antenatal Services during the period of 1st July 2015 – 30th June 2016 before the ultrasound scan was introduced. During the reporting period of 1st July, 2016 to 30th June, 2017; 1059 women were reached with ANC services both at facility and Community level using the portable ultra-sound scan and all tested for HIV. 32 mothers were tested HIV Positive and immediately started on Anti-retroviral drugs at KIHEFO Health center.

NEXT STEPS

In conclusion, the number of women reached and tested for HIV using Portable Ultra Sound Innovation was three times the number of women reached without Portable Ultra Sound Innovation. This innovation can be scaled up to reach out to as many pregnant women as possible and a good strategy that can lead to elimination of mother to child transmission of HIV.

ABSTRACT PO2

Association of HPV-Chlamydial coinfection with cervical intraepithelial lesions at Mbarara Regional Referral Hospital

F. Ssedyabane¹, Mayanja Ronald², Omonigho Aisagbonhi^{3,7}, Ssuuna Charles⁴, J.N Najjuma⁴, Freddie Bwanga⁶, Amnia Diaz Anaya¹

Corresponding Author

Mr Ssedyabane Frank, SF, MSc (MUST),

P. O. Box 1410 Mbarara, Uganda

Email: fsedyabane@gmail.com, Telephone:

+256-777031163/+256755380906

HPV is the necessary cause of cervical cancer. *Chlamydia trachomatis* (CT) is considered a potential cofactor to HPV in the development of cervical cancer. The objective of this study was to determine the association between HPV Chlamydial coinfection and cervical intraepithelial lesions and other risk factors for cervical intraepithelial lesions.

The study included 105 participants, from whom 93 were included in the analysis. Participants were 25 years and above, from whom cervical specimens were collected and enrolment forms filled after consent. Experienced midwives collected one cervical smear and two endocervical swabs from each participant. The swabs were used for HPV DNA and *Chlamydia trachomatis* antigen testing. Data was entered into Microsoft excel and analysed using STATA 12 software, with the help of spearman's correlations at the 0.05 level of significance. Bivariate and multivariate analysis was done by logistic regression, to determine associations between risk factors and cervical lesions.

The results showed the prevalence of HPV-Chlamydial coinfection to be 8.6% (8/93). Positive Pap smear results were found in 60.2% (56/93) participants, most of whom had LSIL (54.8%). HPV-Chlamydial coinfection showed a significant correlation with a positive cytology result and only relatively

significantly correlated with LSIL grade of cytological positivity. HPV was found to be the risk factors associated with cervical intraepithelial lesions at MRRH (OR 39.08; 95% CI 9.3-163.6).

In conclusion, HPV, Chlamydia and HPV-Chlamydial coinfection are prevalent infections and there is a likelihood of association between HPV-chlamydial coinfection and with cervical intraepithelial lesions. This study recommends general STIS screening for every woman that turns up for cervical cancer screening and a larger study, probably multicentre study to be carried out.

ABSTRACT PO3

Causal relationship between risky sexual behavior and HIV testing among young adults (18-35 years) in Uganda: a structural equation analysis

Maria Sarah Nabaggala¹, Joseph Musaaizi, Agnes Kiragga

Corresponding author: Email: snabaggala@idi.co.ug; +256 783406531

Introduction

HIV testing is widely accepted as the cornerstone of HIV prevention programmes because of its multiple benefits (First 90 of the UNAIDS, 90:90:90 Goals). Despite advantages of HIV testing, uptake in Uganda remains disappointingly low with reports of 12% to 56% testing rates. HIV testing is particularly low among young adults who also engage in risky sexual behaviours including having multiple sexual partners, inconsistent condom use and engagement into sexual actions at an early age. We assessed the causal relationship between risky sexual behaviors

and HIV testing among sexually active Ugandan young-adults aged 18-35 years.

Methods

We used data from the 2011 Uganda Demographic and Health Survey from both the women and men questionnaires (excluding young-adults that had never had sex and young women who had given birth in the last one year). We used descriptive statistics and frequency distributions to describe continuous and categorical variables respectively. Generalized Structural Equation Modelling (GSEM) was used at multivariable level to assess direct and indirect associations of risky sexual behaviors (multiple sexual partners, inconsistent condom use and early sexual debut) on HIV testing status (endogenous variables) and exogenous variables of sex, education level, marital status, residence, exposure to media and HIV knowledge.

Results

From a total 11,969 respondents (8,674(72.5%)-females and 2,295(27.5%)-males); 4,181 were included into the study since they met the inclusion criteria. Majority of the respondents; 3,120/4181(65.2%) were females with a median age of 26(IQR=22-30) years. For endogenous variables, 523/4181(12.5%) had sex before 15 years; 980/4181(23.4%) had multiple sexual partners; 3,704/4181(88.6%) did not use a condom during their last sexual intercourse while 3,054/4181(73%) had ever taken an HIV test and received results. At the multivariable analysis (GSEM), HIV testing was found to be more likely among young adults with multiple sexual partners [OR=1.3 (95%CI: 1.1-1.5)] and less likely among females [OR=0.6(95%CI: 0.5-0.7)]. HIV testing was indirectly influenced through multiple sexual partners status by inconsistent condom use [OR=1.5 (95%CI:1.2-1.9)]; primary education [OR=1.8 (95%CI:1.2-2.6)] and post-

primary education [OR=3.0 (95%CI: 2.0-4.5)] compared to non-educated young-adults; rich wealth index [OR=1.8 (95%CI:1.4-2.3)] and middle wealth index [OR=1.7 (95%CI: 1.3-2.2)] when compared to the poor; rural residence [OR=0.6 (95%CI:0.5-0.7)] and female sex [OR=0.3 (95%CI:0.2-0.4)]. It should be noted that risky sexual behaviors of condom use [OR=0.9 (95% CI: 0.8-1.1)] and early sexual debut [OR=1.1 (95% CI: 0.9-1.3)] did not directly affect HIV testing status among young adults.

Conclusion

We observed an association between risky sexual behaviors and HIV testing among young adults in Uganda particularly a direct effect from having multiple sexual partners and an indirect effect from inconsistent condom use. We recommend for the increased distribution of condoms, increase in mass media messages on HIV testing, and designing of current strategies for reduction of risky sexual behavior among this population.

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