University – East Africa, Nairobi, Kenya, [7]Medical College, Faculty of Health Sciences - East Africa, Aga Khan University Nairobi, Kenya, [8]Global Health Sciences, University of California San Francisco, California, USA

Background: Knowledge of utilization of health services and associated factors is important in planning and delivery of interventions to improve health services coverage. This knowledge is however limited in many developing countries. We determined the prevalence and factors associated with health services utilization in a rural area of Kenya. Our findings inform the local health management in development of appropriately targeted interventions.

Methods: Design: Cluster sample survey. Population: Residents of Kaloleni sub-County in Kenya.

Participants/respondents: Household key informants. Outcomes: (i) History of illness for household members and (ii) health services utilization in the preceding month, (iii) factors associated with health services utilization. Analyses: Estimation of prevalence (outcomes i and ii) and random effects logistic regression (outcome iii).

Findings: 1230/6,440 (19.1%, 95% CI: 18.3%-20.2%) household members reported an illness in the month preceding the survey. Of these, 76.7% (95% CI: 74.2%-79.0%) sought healthcare in a health facility. The majority (94%) of the respondents visited dispensary-level facilities and only 60.1% attended facilities within the study sub-counties. Of those that did not seek health services, 43% self-medicated by buying non-prescription drugs, 20% thought health services were too costly, and 10% indicated that the sickness was not serious enough to necessitate visiting a health facility. In the multivariate analyses, relationship to head of household was associated with utilization of health services. Relatives other than the nuclear family of the head of household were five times less likely to seek medical help (Odds Ratio 0.21 (95% CI: 0.05-0.87).

Conclusion: Dispensary level health facilities are the most commonly used by members of this community, and relations at the level of the household influence utilization of health services during an illness. These data enrich the perspective of the local health management to better plan the allocation of healthcare resources to health facilities according to need and demand. The findings will also contribute in the development of community-level health coverage interventions that target the disadvantaged household groups.

Abstract #: *2.018_MDG*

Epidemiology of childhood diarrheal diseases in the Niger-Delta region of Nigeria: a retrospective study

Obieze Nwanna-Nzewunwa[1], Anita Nwankpa[2]; [1](1) Joint Medical Lifesavers Foundation, Port Harcourt, Rivers, Nigeria and (2) University of California San Francisco, Global Health Sciences CA, USA, [2]Niger - Delta University Teaching Hospital, Okolobiri, Bayelsa, Nigeria

Background: Sub-Saharan African children are 15 times more likely to die than their counterparts in developed countries. Diarrhea is the leading cause of malnutrition and the second leading cause of death in children under 5 years old. This study seeks to determine the incidence, demographic and clinical characteristics, and outcomes of childhood diarrheal diseases in the Niger-Delta region of Nigeria.

Methods: We conducted a retrospective analysis using hospital records for all pediatric patients seen at the Niger-Delta University Teaching Hospital (NDUTH), Bayelsa, Nigeria. We identified and reviewed case notes of all patients complaining or diagnosed of diarrheal disease. Demographic (date, age, sex, maternal education) and clinical (diagnosis, complications, comorbidity, mortality) information were extracted from case notes. We analyzed relationship between incidence of diarrheal disease and the patients' age, sex, and maternal level education. We calculated the mortality rate, and generated a time series plot for the incidence of diarrheal diseases. The data were analyzed using STATA 12 and expressed using descriptive statistics, rates, tables and charts. This study received ethical approval.

Findings: From April 1, 2013 – August 30, 2015, 10,722 children were seen at the NDUTH pediatric department, and 221 of them had diarrheal disease. The cumulative incidence (risk) was 21 cases per 1000 patients. The male: female ratio was 1:1.25, with a mean age of 17 months [14, 20 months]. There was a seasonal peak in incidence around February. Children of mothers whose highest level of education was primary, secondary, or tertiary education accounted for 55%, 23% and 9% of cases respectively. Four clinical types were identified: 1) acute water diarrhea (70%), gastroenteritis (17%), dysentery (8%), and chronic diarrhea (5%). Complications and comorbidities were malnutrition (55%), malaria (17.6%), anemia (11%), sepsis (1.4%), and death (0.84%).

Interpretation: Acute watery diarrhea is the commonest clinical type. Maternal formal education appears protective Diarrheal diseases were 6 times commoner among children of women only primary education than children of women with tertiary level of education. Malnutrition is a leading comorbidity. Mortality is low for those who seek hospital care. Observed seasonal peaks occur at the onset of the rainy season. This is important for public health interventions and hospital preparation.

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Evaluating the epidemiology of *P. falciparum* parasitemia in three areas of Uganda with different transmission intensities

H. Obasi[1], J. Rek[3], P. Nayebare[3], A. Katureeba[3], E. Kakande[3], E. Arinaitwe[3], S. Staedke[4], M. Kamya[5], S. Katrak[2], P. Jagannathan[2], G. Dorsey[2], B. Greenhouse[2]; [1]School of Medicine, University of California, San Francisco, CA, USA, [2]Department of Medicine, University of California, San Francisco, CA, USA, [3]Infectious Disease Research Collaboration, Tororo, Uganda, [4]London School of Hygiene and Tropical Medicine, London, United Kingdom, [5]School of Medicine, Makerere University College of Health Sciences, Kampala, Uganda

Background: Parasite prevalence, defined as the proportion of people infected with malaria parasites, is a commonly used metric to evaluate the burden of malaria in endemic areas. Estimates of parasite prevalence are generally based on microscopy which lack sensitivity for detecting low level parasitemia. Newer, highly sensitive molecular techniques such as loop-mediated isothermal amplification (LAMP) may improve our understanding of the epidemiology of parasitemia. The aim of this study was to compare