Background: In the South African triennial report on maternal death for 2008–2010, the overall rate of maternal mortality had increased compared with 2005–2007. Obstetrical hemorrhage was the most common avoidable cause of death. HIV infection was the most common contributory condition to causes of death. Of the nine South African provinces, Kwazulu-Natal had the highest number of maternal deaths. Research on the effect of HIV and postpartum hemorrhage (PPH) in Sub-Saharan Africa suggests an association but is inconclusive.

Methods: This study has a retrospective cohort design. Records from two Level I hospitals affiliated with the University of Kwazulu-Natal were selected. Delivery log books of all births at these two hospitals during 2013 were reviewed. A total of 482 charts were reviewed and 24 excluded for missing data; 458 charts were used for analysis. The women were aged 14–44 years, with a mean age of 24 years old. A linear regression model was computed to obtain odds ratios (OR).

Findings: 36.5% of women were HIV positive and 7.4% of women had PPH. Being HIV-positive was associated with postpartum hemorrhage (OR 2.200, 95% CI: 1.078 – 4.490). After adjusting for age, gravity, parity, institution and mode of delivery, HIV is still associated with PPH (OR 2.460, 95% CI: 1.126 – 5.375).

Interpretation: Parturients with HIV infection have increased odds of postpartum hemorrhage in district hospitals of Kwazulu-Natal. These results signify an association between HIV infection and a preventable cause of maternal mortality. Future research requires parsing out confounding factors versus HIV infection related physiology causing this association. Notably HIV infection increases odds of PPH despite mode of delivery. These results could impact obstetrical management of HIV positive women by prioritizing blood products during labor and delivery or earlier treatment of HIV in the antepartum. This study has limited external validity in that the results have been shown in a specific population.

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Abstract #: *2.077_NEP*

Quality of expanded program for immunization (EPI) and its determinants in seven selected zones of Ethiopia: A cross-sectional study

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Background: For immunization to be effective and increase acceptance by the community, provision of quality vaccination is critical.

Methods: The study domain was 63 rural districts in five regions with about five million people. Cross-sectional representative data from 1,597 mothers with children 12 to 23 months from 210 communities and the service delivery points serving those communities obtained in December 2014–January 2015 were used to assess the quality of vaccination and the factors associated with it. The quality of vaccination services was measured by the validity of doses given, BCG scar formation, card retention, and client-provider interactions. While, valid doses was defined as doses that were administered when the child had reached the minimum age for the vaccine, and were administered with the proper spacing between doses. Multi-level logistics regression analysis was done to assess the factors associated with the quality of vaccination.

Findings: The valid vaccination coverage among children aged 12-23 months for each vaccine was as follows: BCG 83%; Penta1 69%; Penta3 57%; measles 50% and complete vaccination 36%. The drop-out rate between Penta1 and Penta3 was 10%. While, the proportion of children vaccinated with BCG had no BCG scar was 19%. More than a quarter of mothers were not told about the potential side-effects associated with vaccines. Nearly 28% of health facilities missed at least one EPI session in the six month time prior to the study. Complete vaccination with valid doses was lower in the households with poorest wealth quintile, high parity, maternal age between 20-34 years, and no maternal education. Facility level determinants including service interruption and defaulter tracing system were also independent predictors of complete vaccination with valid doses.

Interpretation: This study is unique in reporting the quality of vaccination services and their predictors in Ethiopia. Invalid vaccinations and lack of scar after BCG vaccination is likely to be due to lack of adequately screening before vaccination and poor injection technique, respectively. Therefore, close monitoring of vaccination sessions, uninterrupted schedule of vaccination sessions, and use of defaulter tracing mechanisms will improve the quality of vaccinations.

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Geographic access and relationship to unmet surgical need in Uganda: a geospatial analysis of a household survey on burden of surgical conditions in Uganda

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Background: Geographic access is one of the important factors to consider in planning healthcare services. Globally, about 5 billion people lack access to surgical care. We investigated the relationship between unmet surgical need and geographic access in Uganda.

Methods: This is a geographic information system (GIS) analysis of a nation-wide household survey on surgical conditions. A 2-stage cluster-randomized sample was designed in which 105 Enumeration

Areas (EAs) were selected to represent the national population. Seventy four Districts and Kampala Capital City Authority were represented. At the District level, we used Moran's I index to determine the spatial autocorrelation of the following study variables: unmet surgical need (a prevalence proportion), Hub Distance (distance from EA to surgical center), Area of Coverage (geographic catchment area of each surgical center), and Tertiary Facility Transport (average household time traveled to tertiary facility). We then used Local Indicators of Spatial Association (LISA) to identify any significant clustering of these study variables among the Districts.

Results: The survey enumerated 4,248 individuals. The prevalence proportion of unmet surgical need was estimated for each EA and varied from 2.0 to 45.0%. Of the 4 Regions, prevalence was highest in the Northern and Western Regions. Moran's I bivariable analysis indicated a positive correlation between unmet surgical need and Hub Distance ($I = 0.09$, $p = 0.03$), as well as between unmet surgical need and Area of Coverage ($I = 0.11$, $p = 0.02$). This association was consistent nationally. The LISA analysis showed a high degree of clustering among sets of Districts in the North (Gulu, Lamwo, Lira, Pader) and Southwest Sub-Regions (Kiruhura, Mbarara, Ntungamo).

Discussion: This study demonstrates that there is a statistically significant association between distance to surgical center and unmet surgical need. If investment in surgical care must be prioritized to specific Districts, we have identified the North and Southwest Sub-Regions as higher priority areas.

Abstract #: *2.079_NEP*

Optimizing surgical care delivery in Uganda to address untreated abdominal surgical conditions

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Background: Surgical disease is of increasing priority for the global health agenda. The first step in improving surgical care delivery in low- and middle-income countries is to fully describe the burden attributable to surgically-treatable conditions. Hospital-based data excludes individuals who are unable to access care. The aim of this study was to define the burden of abdominal surgical disease in Uganda via household survey to inform the Ministry of Health in directing efforts to improve surgical care.

Methods: Enumerators sampled 4,248 individuals in 2,315 households across 105 randomly selected clusters stratified by 10 geographic sub-regions throughout Uganda. Using the Surgeons OverSeas Assessment of Need (SOSAS) survey, each head-of-household answered demographic and household death questions and two randomly selected individuals answered questions to elicit surgical conditions in each anatomic area. All individuals reporting an abdominal condition were included in this analysis. Descriptive analysis was performed to determine prevalence of each type of abdominal condition. Chi square and t-tests determined variables contributing to presence of an untreated abdominal condition.

Results: Of the 4,248 individuals interviewed, 841 (19.8%) reported having a surgical condition at some point in their life, 461 of which (10.6%) had 1 or more untreated conditions at the time of the survey. Of reported conditions, 18.3% of lifetime (154/841) and 14.2% (75/528) of untreated were abdominal conditions. Mean age of those with abdominal conditions was 35.2 ± 20.1 years and 65.3% were female. There was no association between age and whether a condition was treated. Men were more likely to have an untreated abdominal condition than women (male 59.6%, female 44.9%, $p=0.01$). The most frequent types of conditions were obstructed labor (23.4%), abdominal masses (21.4%), abdominal pain (16.9%), and hernias (14.3%). Obstructed labor was more likely to be treated (80.6%), than abdominal masses (33.3%), abdominal pain (30.8%), and hernias (45.5%) ($p<0.001$).

Conclusions: Abdominal conditions make up a significant proportion of the surgical need in Uganda. Although obstructed labor is the most common surgical condition, it is more likely to be treated than abdominal masses, abdominal pain, and hernias. World Health Organization efforts have focused on reducing maternal and child mortality, particularly by increasing access to Cesarean section. It is evident, that these efforts have been successful, however, other abdominal surgical conditions remain largely untreated.

Abstract #: *2.080_NEP*

Mongolian Women's Experiences of Mental Health During Pregnancy and After Childbirth

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Background: Postpartum depression (PPD) is defined as depression occurring during pregnancy or within 4-6 weeks after childbirth. Understanding the culture-specific and individual aspects of PPD is critical in promoting the health of mothers, children, and families. Little information exists, however, on the ways in which PPD manifests in the Mongolian cultural context. This project aims to explore how postpartum Mongolian women experience PPD and how patients and health care providers understand, identify and treat PPD.

Methods: We conducted 3 interviews and 3 focus group discussions (FGDs) with health care providers at the Mongolian National Centre for Maternal and Child Health (N=16) in order to explore the following domains in the context of PPD: 1) awareness and views about etiology 2) clinical experience and the impact on the patient 3) lay perspectives 4) recognition, treatment, and availability of services. Transcripts of the interviews and FGDs were transcribed and analyzed for emergent themes.

Findings: All providers were aware of PPD, though none reported having had substantial experience working with PPD patients. Views regarding etiology ranged from unplanned pregnancy and breast-feeding difficulty to volatile emotions and family conflict,