

was abortion/miscarriage (78%, 95% CI [0.65, 0.82]), followed by malaria (12%, 95% CI [0.06, 0.18]), and anemia (10%, 95% CI [0.4, 0.16]). Other emergencies include sepsis (4%, 95% CI [0.001, 0.08]) hypertension (4%, 95% CI [0.001, 0.08]) hemorrhage (4%, 95% CI [0.001, 0.08]) and obstructed labor (3%, 95% CI [-0.004, 0.06]). In this preliminary analysis, 2% (95% CI [-0.01, 0.5]) of women had an HIV-related emergency, and 28% (95% CI [0.19, 0.36]) of records included more than one emergency. 3% (95% CI [-0.004, 0.06]) of emergencies resulted in death.

**Interpretation:** Emergencies in pregnancy are caused by conditions directly related (such as loss of pregnancy) and indirectly related to pregnancy (such as malaria, which is typically more severe among pregnant women). Future efforts should be undertaken to address modifiable risk factors that could reduce or prevent the most common causes of medical emergencies in pregnancy and, ultimately, reduce maternal morbidity and mortality.

**Source of Funding:** University of Minnesota School of Public Health, Epidemiology Division Hawley Research Award.

**Abstract #:** 1.021\_WOM

### **Malaria Control Methods and Healthcare Access among Pregnant Women in Democratic Republic of the Congo**

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**Background:** Malaria is a major public health problem and life-threatening disease. In the Democratic Republic of the Congo (DRC), 400 children die every day and almost half of these deaths are attributable to malaria. Malaria is the leading cause of morbidity and mortality in children under-5 in the DRC, accounting for an estimated 40% of outpatient visits and 40% of childhood mortality.

**Methods:** The purpose of this study was to examine whether malarial control methods (i.e., insecticide bed net use and taking SP/fansidar or chloroquine) differed based on perceived problems preventing pregnant women from seeking medical advice or treatment (big problem, not a big problem), receipt of prenatal care (no, yes) and source of prenatal care (e.g., doctor), and sociodemographic characteristics. A secondary data analysis of pregnant women (n = 2,404) who completed the Demographic and Health Survey in the DRC (DHS-DRC7) was conducted.

**Findings:** Results indicated that use of a bed net, SP/fansidar, and chloroquine significantly differed among pregnant women based on educational attainment, ethnicity, and wealth index. Pregnant women who slept under a bed net were more likely to receive prenatal care (p = .002), including 1.95 times more likely (p = .002) to receive care from a doctor, than pregnant women who did not sleep under a mosquito net. Pregnant women who took SP/fansidar were more likely to perceive that distance to a health facility (p < .001) and not wanting to go alone (p = .009) were not big problems for getting medical help for themselves. Pregnant women who took SP/fansidar were more likely to receive care from a doctor (p = .01), nurse (p = .002) or birth attendant (p < .001). Pregnant women who took chloroquine while pregnant were 3.6 times more likely (p = .04) to receive care from a doctor.

**Interpretation:** Awareness of malarial control methods is critical in shaping the necessary interventions and policies to control diseases and addressing this global health disparity. The study found several healthcare utilization factors related to malarial control methods among pregnant women in the DRC. Next steps include enhancement of education among pregnant women about malarial control methods and access to care.

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**Abstract #:** 1.022\_WOM

### **Perceived Social Support and Depression amongst Pregnant and Postnatal Women with HIV in Nyanza, Kenya**

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**Background:** In order for prevention of mother-to-child HIV transmission (PMTCT) programs to be effective, they must identify pregnant women living with HIV, provide them with antiretroviral treatment (ART), support medication adherence, and retain patients to ensure that infants receive the appropriate care including final determination of HIV status. Previous research has demonstrated that depression is a barrier to retention in PMTCT programs and that perceived social support is a key facilitator.

**Methods:** Between September 2013 and August 2015, 340 HIV positive, pregnant women seeking PMTCT services enrolled in the MIR4Health study, a randomized trial conducted at ten health facilities within the Nyanza region of Kenya. Women were assigned to either the standard of care or intervention, the latter involving a lay worker administered package of services including individualized health education, adherence and psychosocial support during clinic visits and at home, peer support, and text and phone call appointment reminders intended to improve retention. Clinical data and patient interviews were collected longitudinally from enrollment through six months postpartum. Perceived social support was assessed as a 12-item self-reported survey, including emotional and instrumental support items, at two time points; depression was assessed via a 10-item survey at 3 time points. We used first-differences regression models to explore the relationships between perceived instrumental support, perceived emotional support, and depression amongst patients in the intervention and control arms of the study.

**Findings:** Analyses found that the intervention had an impact on perceived availability of emotional support (p < .05), but did not have any effect on instrumental support (p > .05). Using the Edinburgh Postnatal Depression Scale (EPDS), we found that instrumental support was predictive of depression (p < .05) but emotional support was not (p > .05).

**Interpretation:** This research demonstrates that the package may have had an impact on emotional social support which has been associated with positive health outcomes. Further research may be necessary to unpack which components of the package were most or least beneficial to the effects found and therein how the intervention should be modified before wide scale implementation.

**Source of Funding:** PEPFAR through the NIH.

**Abstract #:** 1.023\_WOM

### Health, Information, Perception and Demographic Variables as Correlate of Gender Equality in Science Technology Engineering and Math (Stem) Education in South-West Nigeria

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**Background:** With the level of efforts and interventions by researchers and organizations around the world towards gender equality in Science Technology Engineering and Math (STEM), the number of women participation is still very low. UNESCO Institute for Statistics (2015) revealed that female representation is only about 30% of the total population in STEM while in Africa it is about 17% (Ekine, 2013). This statistics, raises the question of what could be responsible for the resistant disparity? Could it be that girls at the foundational level do not have adequate career information about STEM and all it entails? What are their perceptions of Mathematics and sciences, are there some demographic issues? There is need to discover what the real causes of gender disparity in mathematics and sciences are from the junior secondary school, a period that precedes the choice subjects that form student's career paths. This will provide an empirical basis for effectively bridging the gender gap in STEM in Nigeria thereby building and releasing the necessary latent human resources to sustain development and compete in the global economy as well as ensuring inclusivity of girls and women.

Ekine (2013) affirmed that a country's ability to secure good health, fight diseases, protect the environment, produce food for its people, and develop new industries and technologies is dependent on the scientific knowledge and skills of its people. Consequently, more women are needed in STEM to be active participants in scientific development particularly in health related issues, application and decision-making thus, ensuring that scientific initiatives are implemented to adequately address the needs and preferences of both sexes especially those of women. It is against this background that the study seeks to investigate Health, Information, Perception and Demographic variables as correlate of gender equality in STEM education in South-West Nigeria. On the long run, findings from a study such as this would highlight specific deficiencies associated with attracting and retaining girls in Mathematics and Science and proffer solutions to the problems.

**Methods:** Survey.

**Findings:** In view.

**Interpretation:** In view.

**Source of Funding:** Covenant University.

**Abstract #:** 1.024\_WOM

### Video Analysis System as a Tool to Improve the Quality of Basic Emergency Obstetric and Neonatal Care through Simulation Training in Bihar, India

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**Background:** Limited-resources and expertise precluded satisfactory quality of care during childbirth in Bihar, India. UCSF and PRONTO International collaborated with CARE India to integrate on-site basic emergency obstetric and neonatal care (BEmONC) simulation and team-training into an ongoing mobile mentorship model in 320 primary health centers (PHCs). The feasibility and effectiveness of video analysis was evaluated for monitoring the uptake of evidence-based practices (EBP) and teamwork and communication (T&C) used in simulation. The aim of this analysis is to provide ongoing programmatic feedback to the nurse midwife mentors (NMMs).

**Methods:** Altogether 120 Nurse-Midwife Mentors (NMMs) were trained in techno-managerial aspects of teaching, team building, behavior change communication and advocacy. The goal was to enable them through repeated PHC visits, in mentoring Auxiliary Nurse Midwives for the management of childbirth and relevant complications. The NMMs video recorded every simulation through a video camera and then debriefed as a part of mentoring. The recorded videos were labeled to ensure confidentiality and delivered to the project headquarters through an encrypted USB drive. Selected videos were coded using Studiocode video analysis software by a technically competent team of Hindi (local language) speaking video analysts. Coded data was then analyzed to provide feedback/training recommendations to the NMMs.

**Findings:** A total of 10,000 videos will be collected and contents of 4,000 videos spanning ~88,000 minutes will be analyzed. To date, simulations and debriefs have been completed in 240 PHCs, during three rounds spanning 8 months. A total of 1,490 simulation videos and 154 debrief videos were coded, analyzed, and used for programmatic feedback.

**Interpretation:** Throughout the first three of this four round project, the analyzed videos provided guidance in: 1) measuring the use of EBP and T&C; 2) programmatic decision making; 3) addressing technical issues; and 4) giving comprehensive feedback to NMMs to guide mentoring and facilitation. While the transferring, coding and analyzing large video files were labor intensive; they still appeared to be less costly than direct observation. Thus large-scale video monitoring system seemed feasible and useful tool for program implementation and evaluation in resource-limited settings.

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### A Multi-Center Study of Automated Breast Ultrasound System for the Diagnosis of Breast Cancer in China

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