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Abstract #: *2.015_MDG*

Reducing childhood mortality through the private medical sector: An evaluation of world health partners' social franchising and telemedicine network in Bihar, India

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Background: The under-five mortality rate in India is 48 deaths per 1000 live births, well above the 4th Millennium Development Goal of 38. Many of these deaths are due to pneumonia and diarrhea, the leading causes of mortality in children under 5. Most children in India access care through the private medical sector, but current evidence demonstrates that these providers adhere poorly to national treatment guidelines. Social franchising has emerged as an intervention to improve quality of care within the existing private sector, but few studies have evaluated the impact of social franchising on child health, which is the aim of this paper.

Methods: A secondary analysis was conducted of a cross-sectional data collected from June-July of 2013 in 209 clinics within a social franchising network in Bihar, India. 148 clinic visits with children under 5 were observed. Two primary outcomes were measured: 1) provider knowledge of WHO diarrhea and pneumonia management guidelines and 2) adherence to these guidelines. A semi-structured questionnaire and clinical observation checklist were used to assess these outcomes. Bivariate analysis using Fischer's exact test and a significance threshold of $p \leq 0.10$ was used to determine the association between provider knowledge and clinical adherence. Approval for this secondary data analysis was obtained from the University of California, Berkeley Institutional Review Board.

Results: Of the 45 children presenting with diarrhea, 44% received oral rehydration solution (ORS) and 29% received zinc supplementation. 10% of the 63 children presenting with acute respiratory illness were treated with amoxicillin, and about half were treated with an unspecified injectable medication. Knowledge of ORS for diarrhea management was significantly associated with prescription of ORS for diarrhea compared to providers without reported knowledge of ORS for diarrhea (56% vs. 8%, p=0.005).

Discussion: Despite the association between provider knowledge and appropriate management of diarrhea, nearly half of providers who reported knowledge of ORS did not prescribe ORS. Possible reasons include poor symptomatic relief, misperceptions of effectiveness, and insufficient incentives. Given these barriers, improved provider training and incentives, patient education, and enforcement mechanisms are needed to maintain social franchising as a viable option to reduce preventable childhood mortality.

Abstract #: *2.016_MDG*

Kybele-adding postpartum uterine massage to decrease postpartum bleeding in a rural armenian hospital

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Background: Rural Hospitals in Armenia have limited access to uterotonic medications, medical supplies and blood bank services. Uterine massage (UM) was introduced in hopes of decreasing the risk of uterine atony and prevention of postpartum hemorrhage (PPH). The goal was to determine if adding a simple procedure as part of the standard care of the active management of 3rd stage or labor (AMSTL) could lead to improve outcomes for patients at minimal additional cost.

Methods: This is an observational study that included all women with normal spontaneous vaginal delivery (NSVD) in 2013 (n= 864) and in 2014 (n= 883) at Akhurian Hospital. AMTSL included administering Oxytocin 10 units intramuscular after delivery of the anterior shoulder and controlled cord traction. UM was demonstrated by fundal uterine massage after the delivery of the placenta every 10 minutes for about 2 hours. UM became a part of AMTSL standard care in 2014. Primary outcomes was the rate of PPH, uterine atony, bleeding <24 hours or >24 hours and the amount of blood loss if >500 ml or >1000 in all NSVD that occurred in 2013 and 2014. Secondary outcomes included retained placenta, trauma and endometritis.

Findings: Primary finding was a relative risk reduction of 64% for PPH. PPH occurred in 23 NSVD in 2013 compared to 10/883 NSVD in 2014. Uterine atony decreased from 1.7% to 0.6% (p = .02) bleeding < 24 hours decreased from 2.2% to 0.8% (p= .02) and blood loss > 500 ml significantly decreased from 1.9% to 0.8% (p=.02). UM did not significantly decrease bleeding > 24 hours, blood loss >1000ml, retained products, trauma or endometritis.

Interpretation: Study showed that implementing a simple and standard maneuver is associated with 64% risk reduction for PPH. While we recognize the limitations of observational studies the only standard practice that changed was the addition of UM. While there potentially could have been population factors that impacted the findings this seems less likely in a rural area of Armenia with limited migration. These finding show that simple inexpensive interventions can have a marked impact on the health of populations.

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Abstract #: *2.017_MDG*

Utilization of health services in a resource-limited rural area in Kenya: prevalence and associated household-level factors

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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

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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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Abstract #: *2.019_MDG*

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

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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