

to each of the PHCs and a post intervention evaluation was done from July– September 2015. Percentages and t-test was used for analysis.

Outcome & Evaluation: At baseline, only 15% of CHEWs at the 59 PHCs had standard of practice with a score of >70% while 85% scored <70%. Post intervention, CHEWs who had standard of practice with score >70% increased to 75%. Nurse Mentors TA was significant at $p < 0.001$ ($t=16.7$, $df= 58$).

Going Forward: Provision of technical assistance by Nurse Mentors is an effective approach to improve standard of practice for PMTCT service delivery by CHEWs working at PHCs.

Source of Funding: PEPFAR.

Abstract #: 1.027_HHR

Epidemiology of Poisoning Patients Presenting to the Emergency Center of Princess Marina Hospital in Gaborone, Botswana

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Program/Project Purpose: The burden of disease secondary to toxicologic insults in Africa is difficult to assess. No reliable epidemiological data exists due to poor documentation, scarce resources for reporting, and diagnostic challenges. Only 10 of 58 countries African countries have Poison Control Centers to direct care and compile epidemiologic data. Botswana currently does not have a poison control center. In fact, there is only one clinically trained toxicologist serving the entire country of over 2 million. Official estimates of toxicologic cases for Botswana are often extrapolated from other surrounding countries such as South Africa. Though variably reliable, the estimates are still a public health concern. The purpose of this project was to conduct a retrospective observational audit of medical toxicologic cases presenting to Princess Marina Hospital (PMH) in Gaborone, Botswana. No formal clinical toxicologic audit has ever been performed in this setting.

Structure/Method/Design: A database was created to record anonymous data on all patients with toxicologic insults presenting to the Emergency Department (ED) at PMH from January 1, 2016 to June 30, 2016. The deidentified variables extracted from patient files included age, date of presentation, sex, comorbidities, vital signs, treatment received, disposition, HIV status, and severity assessment using the Acute Physiologic and Chronic Health Evaluation II (APACHE II) and Poisons Severity Score (PSS).

Outcome & Evaluation: In total, toxicologic complaints comprised about 2% of patients presenting to the ED at PMH during this time period. The most common complaints were paraffin, paracetamol, ibuprofen poisonings, scorpion and snake bites. The percentage of female toxicology patients varied proportionately with age with 38% female from age 0-15 to 67% from age 16-55. The percentage of poisonings that were intentional also increased with age with 6% intentional between ages 0-15 to 83% between ages 16-55. The route of exposure was overwhelming

oral (86%) and about 60% of patients admitted to the hospital for further monitoring.

Going Forward: This descriptive study is important for directing the allocation of resources towards medical toxicology, prevention campaigns, patient and medical education, and clinical guideline development with the goal of ultimately improving patient outcomes in Botswana. This study is also important in furthering the field of clinical toxicology research.

Source of Funding: None.

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Should Large Urban Centres Decide How Best to Use Health Care Services: Exploring Alternative Approaches to Estimating Inpatient Hospital Use Based on Need in Canada

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Background: Needs-based approaches for assessing key healthcare policy issues must define how need should be measured and a standard level of healthcare resource use given need should be estimated. Different population choices can be used to establish this standard, though the implications of this choice on estimates historically has been ignored.

Objectives: A need-based approach is widely used to examine health equity issues. It estimates need-expected use based on a standard level of use given need. We assessed how need-expected inpatient hospital use differ depending on whether the standard was estimated for all Canadians, Canadian regions, or high income Canadians.

Methods: Data used was the 2009/2010 Canadian Community Health Survey. The measure of health care was self-reported inpatient hospital use. Using zero-inflated negative binomial regression, we modeled inpatient hospital use separately based on the choices of population, Canadians (counting each individual in the population equally), Canadian regions (counting each region in the population equally by giving equal weight), and high income Canadians (modeling among the above average income groups). We adjusted for demographic, health behaviour, health status, socioeconomic, and health care supply factors. We then estimated need-expected inpatient hospital use and compared the estimates across individuals and by income and province.

Findings: Overall, parameter estimates from the three models with different choices of population were similar. Choice of population resulted in small differences in the estimates of average need-expected hospital inpatient use by province or income group. Differences were larger in the income comparison than the provincial comparison. Differences in the estimates of average need-expected use were the most pronounced among the low income group. Across the provinces, differences due to choices of population were the smallest for Alberta and largest for Quebec. While choice of population did result in some small differences, how provinces rank in need did not alter.

Interpretation: Choice of population defining standard resource use given need is an important consideration if it alters winners

and losers in allocation decisions. Our results suggest this is not the case. Future research should explore generalizability of our results to other types of healthcare services including general practitioner or specialists services.

Source of Funding: Canadian Institute for Health Research Project Traineeship.

Abstract #: 1.029_HHR

Simulation Training in a Limited Resource Setting: Teaching Medical Residents in Brazil about Rapid Response Teams

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Program/Project Purpose: Our goal was to create a simulation-based curriculum on rapid response scenarios, teaching team dynamics, leadership, and communication to the internal medicine residents in Belo Horizonte, Brazil. In conjunction with a partner hospitalist in Belo Horizonte, two New York City internal medicine residents designed this educational study to evaluate the effectiveness of simulation curriculum in teaching team-building skills.

Structure/Method/Design: During February 2016, we held three sessions with involvement of 10 PGY1 and PGY2 internal medicine residents, conducting six simulated rapid response scenarios over the span of three weeks. We conducted pre- and post-surveys to document improvement in objective skills learned through the curriculum and practice sessions. Additionally, we administered Likert-scale questionnaires to identify participants' assessment of their own skills and value of this simulation-based curriculum.

Outcome & Evaluation: In the pre-survey, the 10 residents successfully managed basic rapid response team and ACLS tasks; however, they failed in areas such as communication and leadership. By the end of the third week, we were able to capture that the residents maintained their skills from the initial survey while also improving in the communication and team leadership sections. In assessing the value of this model of medical education, the residents "strongly agreed" that they felt more prepared to manage rapid responses in the hospital and that they prefer learning through simulations than classroom or textbook learning. The participants felt that the project was beneficial to their residency experience and would continue participating in these sessions at their hospital if offered. Overall, the residents enjoyed this simulation-based teaching project and felt that it enhanced their training, and additionally, we were able to document improvement in their technical skills, predominantly in communication and leadership, with our pre- and post-survey.

Going Forward: This simulation curriculum on rapid responses taught core skills including team building and leadership that will hopefully be utilized as these residents continue on in their daily patient-care tasks. Through group discussions, we were able to identify barriers to developing a rapid response team in the residency programs in Belo Horizonte such as nurse involvement, which will hopefully stimulate further discussion on how to overcome these barriers in the future.

Source of Funding: NYU School of Medicine, Department of Internal Medicine.

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Pediatric Hospital Admissions and Surgical Procedures in Three Ugandan Hospitals

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Background: An estimated 85% of children in Africa having a surgically-treatable condition by the age of 15. Although children represent a vulnerable population in need of surgical services, the contribution of pediatric surgical conditions to the healthcare systems in resource-poor settings is largely unknown. The objective of this study was to describe the epidemiology of hospital admissions and surgical procedures at three hospitals in Uganda between January 2012 and December 2012.

Methods: Hospital admission logbooks and surgical logbooks at three Ugandan hospitals, Mulago National Referral Hospital (MNRH), Mbarara Regional Referral Hospital (MRRH), and Gulu Regional Referral Hospital (GRRH) between January 2012 and December 2012 were retrospectively reviewed by study staff members. Pediatric patients were defined as persons <19 years of age. For each hospital admission and surgical procedure, the patient's age and reason for admission or surgical procedure were recorded.

Findings: From January 2012 to December 2012, 19,165 were admitted into the three hospitals (15,111 in MNRH, 2,684 in MRRH, and 1,370 children in GRRH). The most common reason for admission at MRRH was birth asphyxia and malaria at MNRH and GRRH. Of admitted children, 16% had a surgical procedure (16%, 22% and 9% of admitted children in MNRH, MRRH, and GRRH, respectively). Surgery among pediatric patients comprised a large number of all procedures with 41% of surgeries at MRRH and 17% of surgeries at GRRH occurring among children. Children who underwent surgical procedures were younger at MNRH and MRRH than at GRRH. At MNRH, pediatric surgery was the most common type of procedure done in children. At MRRH, the most common type of procedure was related to gastrointestinal issues compared to ear, nose, and throat procedures at GRRH.

Interpretation: Our data suggests that young children represent a significant proportion of hospital admissions among all pediatric patients in Uganda. Likewise, one-third of all surgical procedures performed at these hospitals occurred among children. Differences in type of hospital admission and surgical procedure performed was noted between the three hospitals and by the children's age. Hospital-based data similar to ours can help inform targeted efforts and specific guidelines regarding what personnel, infrastructure, and supplies are needed to adequately scale-up services.

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