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.

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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.

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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 hospital in Belo Horizonte, two New York City internal medicine residents designed this educational study to evaluate the effectiveness of the 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.

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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). Of all admissions, 16% had a surgical procedure. Of these, 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 MRRH, 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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