

### Surgical indicators from a national database: Using Brazil as a model

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**Background:** In an effort to strengthen surgical systems worldwide, the Lancet Commission on Global Surgery recommended the measurement of six indicators at the country level: the proportion of the population within two hours of a surgical hospital (two-hour access), the number of surgical, anesthesia, and obstetric specialists per 100,000 population (SAO density), the number of surgical procedures per 100,000 population per year (surgical volume), the perioperative mortality rate (POMR), and the risk of impoverishing and catastrophic expenditures paying for surgical care. We aim to prove the feasibility of obtaining these surgical indicators from national healthcare databases, such as DATASUS in Brazil.

**Methods:** Using DATASUS, five of six indicators could be measured, calculated or simulated from 2008–2014. The sixth, two-hour access, is currently being processed by the Ministry of Health. We directly calculated SAO density, surgical volume, and POMR, and we modeled impoverishing and catastrophic expenditures using the Gini index and GDP per capita to create a gamma distribution of incomes.

**Findings:** Surgical indicators can be drawn from Brazil's national database: In 2014, SAO density was 34.7 per 100,000 population, surgical volume was 4,433 procedures per 100,000 population per year, and POMR was 1.71%. 1.85 million people (20.61% of all surgical patients) experienced impoverishing expenditure and 1.39 million people (15.42%) experienced catastrophic expenditure due to surgery.

Over the past seven years, surgical volume and catastrophic expenditure have remained unchanged. The surgical workforce density has decreased (42.8/100,000 population to 34.7/100,000 population) while POMR (1.53% to 1.71%) and impoverishing expenditure (18.04% to 20.61%) have increased.

**Interpretation:** Although SAO density in Brazil has decreased in recent years, Brazil still meets an international threshold set by the global surgery community. Surgical volume, POMR, and financial risk protection are areas for improvement. Two-hour access will be reported shortly pending data validation. There is significant regional variation in surgical indicators, warranting further studies to validate these numbers at the regional or state level as well as efforts to ensure equitable distribution of healthcare resources. This study shows that surgical indicators can be extracted from a national health database.

**Funding:** None.

**Abstract #:** 2.020\_NEP

### Perceptions and knowledge of mental illness in rural Kenya

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**Program/Project Purpose:** Residents of rural communities in Kenya face numerous challenges that prevent them from accessing mental health care. Barriers include financial and geographical constraints, but also a pervasive stigma that prevents mentally ill individuals from seeking treatment. The Global Health Initiative (GHI) at the University of British Columbia commenced the Mental Health Project in three rural communities surrounding Kisumu that would address these barriers. The aim of the project was to explore community knowledge, beliefs and practices surrounding mental illness in order to develop community-based interventions to improve mental health care in the region.

**Structure/Method/Design:** The project involved two main components: assessing community knowledge and attitudes towards mental health, and education through mental health workshops. Focus groups were conducted with men, women and community health workers (CHWs), in three villages within the Kisumu region. Key informant interviews were conducted with a psychologist, a school headmaster and a faith healer to gain their perspectives as providers of mental health care. Using the information collected in conjunction with CHW-specific WHO mental health modules, a mental health education workshop was developed and delivered to the CHWs of the rural communities.

**Outcome & Evaluation:** Focus groups and interviews identified significant barriers to accessing mental health care, including long distances to tertiary hospitals, a scarcity of qualified professionals, financial constraints, and stigma. Community members, including CHWs, reported receiving no formal mental health education. This lack of education has contributed to the significant stigma surrounding mental illness, which has been further exacerbated by the belief of an association between mental illness and the supernatural. The education component of the project aims to address this stigma by providing basic education on common mental illnesses and strategies in caring for mentally ill individuals.

**Going Forward:** The GHI team will continue the Mental Health Project in the Kisumu region by developing comprehensive mental health training workshops for CHWs. The goal is to provide CHWs with the tools to disseminate appropriate mental health knowledge through household visits, and deliver mental health workshops to community members, therefore creating a sustainable program to tackle barriers to mental health care.

**Abstract #:** 2.021\_NEP

### Global equity in biomedical research: Assessing research innovation, technology access and student empowerment to meet the world's most neglected health needs

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