Resources & Opportunities for Global Surgery Research

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Disclosures

• No disclosures
Finding Opportunities

Step 1: Soul Search
- Identify broad area of specialty
  (Peds, Gyne, Onc, Trauma, H&N, Gen Surg etc)
- Is there a type of research you are most interested in?
  (Quality, safety, outcomes, access, policy, epi etc)
- Is there a geographical area you want to work in?
  (West Africa, Haiti, South Asia, etc)

Step 2: Find a mentor

Step 3: Show up and do the work
What are Your Assets?
Step 1: Soul search

Step 2: Find a mentor

- Is there someone in your department doing something similar?
  - Yes: Reach out and connect
  - No: Is there a Global Surgery or Global Health Institute at your University/Institution?
    - Yes: Look for a mentor at a different institution
    - No: Consider a global surgery research fellowship

Step 3: Show up and do the work

Considerations:
- Someone you read about
- Whose work you read
- Suggested by a colleague/faculty
- You heard speaking at a conference
What is the Style of the Mentor?
Is the work motivated by Local Priorities?
Finding Opportunities

Step 1: Soul Search
- Identify broad area of specialty
- Is there a **type** of research you are most interested in?
- Is there a geographical area you want to work in?

Step 2: Find a mentor
- Explore your department
- Explore your institution/university
- Reach outside your institution
- Consider a research fellowship

Step 3: Show up and do the work
- Continue training yourself
- Be creative, responsible, and persistent
- Stick to the excellent research and ethical standards
Data for global surgery research.
IRB Process

- Local Hospital / University IRB - $300
- National IRB - $300
- US Institutional IRB - free?
Primary Data is Sparse in LMIC
Medical Records are Often Paper Charts
Local Prospective Databases
Survey & Interview Data
Verbal Autopsy

SAVVY Data Collection: Verbal Autopsy Interview

A SAVVY Coordinator conducting VA interview for a probable cause of death (Source: SAVVY Tanzania)
Existing data

Getting the Job Done: Analysis of the Impact and Effectiveness of the SmileTrain Program in Alleviating the Global Burden of Cleft Disease

D. Posnara
Systematic reviews

Review
Quality of essential care in low- and middle-income countries: a scoping review
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Abstract
Purpose: The purpose of this review was to assess the quality of essential care in low- and middle-income countries.

Methods: A systematic review of the literature was conducted. The search strategy included PubMed, EMBASE, and Web of Science databases.

Results: A total of 1,890 articles were screened, of which 25 studies were included. The majority of studies were conducted in sub-Saharan Africa (n = 18), followed by Asia (n = 4) and Latin America (n = 2). The most common themes identified were maternal and child health services (n = 13), followed by infectious diseases (n = 7) and non-communicable diseases (n = 2).

Conclusions: There is a need for further research to improve the quality of essential care in low- and middle-income countries.

Keywords: Essential care, Quality of care, Low- and middle-income countries.
Publicly available data
Secondary analysis of collected data

Global operating theatre distribution and pulse oximetry supply: an estimation from reported data


Summary
Background: Surgery is an essential part of health care, but resources to ensure the availability of surgical services are often inadequate. We estimated the global distribution of operating theatres and quantified the availability of pulse oximetry, which is an essential monitoring device during surgery and a potential measure of operating theatre resources.

Methods: We calculated ratios of the number of operating theatres to hospital beds in seven geographical regions worldwide on the basis of profiles of 760 hospitals in 92 countries that participated in WHO’s safe surgery saves lives initiative. We used hospital bed figures from 380 WHO member states to estimate the number of operating theatres per 100,000 people in 21 subsegments throughout the world. To estimate availability of pulse oximetry, we sent surveys to anesthesia providers in 72 countries selected to ensure a geographically and demographically diverse sample. A predictive regression model was used to estimate the pulse oximetry need for countries that did not provide data.

Findings: The estimated number of operating theatres ranged from 1:0 (95% CI 0:9–1:1) per 100,000 people in west sub-Saharan Africa to 23:1 (20:0–26:0) per 100,000 in eastern Europe. High-income subsegments averaged more than 14 per 100,000 people, whereas low-income subsegments, representing 2: 2 billion people, had fewer than two theatres per 100,000. Pulse oximetry data from 54 countries suggested that around 77,000 (63,915–95,553) theatres worldwide (1:9–2:5; 95% CI 1:3–2:9) were not equipped with pulse oximeters.

Interpretation: Improvements in public-health strategies and monitoring are needed to reduce disparities for more than 2 billion people without adequate access to surgical care.

Funding: WHO.

Introduction
There is a need for surgical treatment account for a substantial amount of the global burden of disease. Countries have exhausted their potential to improve surgical care in the current decade. Estimates suggest that 25% of the world’s disability-adjusted life years are attributable to diseases that are often treated with surgery. Heart and cerebrovascular diseases are the top two causes of death worldwide. Cancer is one of the five principal causes of mortality and injuries from road traffic accidents are among the top ten causes of death. Other surgically treatable disorders such as obstructed labour, chronic infections, and congenital heart defects are major causes of morbidity and mortality in the developing world. As health care systems in developing regions continue an ageing population with an increased frequency of non-communicable diseases,” the extent of surgical need will increase. The need for infrastructure to support the delivery of surgical care increases with the number of people aged 80 years and older. The healthcare needs of these individuals are different from those of younger people and require specialist surgical care.

Asia suggests substantial shortages in anaesthesia and surgical resources. However, we know little about these shortages, especially with respect to availability of functioning surgical facilities or staff and equipment levels. Therefore, we aimed to estimate and compare the regional densities and distributions of operating theatres worldwide.

We also sought a simple indicator of availability of anaesthesia and surgical equipment within surgical facilities. We identified pulse oximetry as a component of safety and anaesthetic care that is internationally recognized to be an essential modality. Although other devices such as automated waveform capnography and reliable non-invasive monitoring systems may be preferable in low-income settings, the availability of pulse oximetry is used as a proxy for adequacy of operating theatre equipment supply because of this scarcity in low-income settings, and because international organizations such as the World Health Organization have recommended that pulse oximeters be available in all operating theatres.

Surgical care needs of low-resource populations: an estimation of the prevalence of surgically treatable conditions and avoidable deaths in 48 countries

Shahla Gupta, Steven S. Strauss, Patrick Kanyamwaro, Emmanuel A. Ameh, Mohamed Lobah, Darren Clarke, Peter Dorrer, Mikkel Dalsgaard, Rachel Sere, Thiain B. Kamara, Suvra Sen Gupta, Walle C. Sluiter, Sheryl M. Wilson, William M. Price, Adam S. Kewacha

Abstract
Background: Surgery is increasingly recognized as an important aspect of global health, yet data for the sites of the problem are insufficient. The Surgeon OverSized Assessment of Surgical Needs (SOSAN) is a population-based cluster survey previously used in Nepal, Rwanda, and Sierra Leone.

Methods: Using previously published SOSAN data from three resource-poor countries (Nepal, Rwanda, and Sierra Leone), a weighted average of overall prevalence of surgically treatable conditions was estimated and the number of deaths that could have been avoided by providing access to surgical care was calculated for the broader community of low-resource countries. Such conditions included, but were not limited to, injuries (road traffic incidents, falls, burns, and gunshot or stab wounds), masses (solid or soft, reducible), deformities (congenital or acquired), abdominal distress, and obstructed delivery. Population and health expenditure per capita data were obtained from the World Bank.

Low-resource countries were defined as those with a per capita health expenditure of US$100 or less annually. The overall prevalence estimate from the previously published SOSAN data was extrapolated to each low-resource country. Using crude death rates for each country and the calculated proportion of avoidable deaths, a total number of deaths possibly averted in the previous year with access to appropriate surgical care was calculated.

Findings: The overall prevalence of surgically treatable conditions was 11-16% (95% CI 11-15-17) and 4-5% (95% CI 4-5-7) of deaths were potentially avoidable by providing access to surgical care. Using these percentages for the low-resource countries, an estimated 288,500 people are living with a surgically treatable condition and 5-6 million deaths could be avoided annually by the provision of surgical care. In Nepal, SOSAN’s study, the observed agreement between self-reported verbal responses and visual physical examination findings was 94-96%. Such high correlation helps to validate the SOSAN tool.

Interpretation: Hundreds of millions of people with surgically treatable conditions live in low-resource countries, and about 25% of the mortality annually could be avoided with better access to surgical care. Strengthening surgical care must be considered when strengthening health systems and in setting future sustainable development goals.

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Contributions: SG, AIK, BSC, and BCN conceived and designed the study. SG, BSC, SL, THI, PR, and ALK collected the data. SG, BSC, and AIK interpreted the data. SG and AIK wrote the Abstract. All authors approve the final version of the Abstract for publication.

Declaration of Interests: We declare no competing interests.
Disparities in Access to Surgical Care within a Lower Income Country: An Alarming Inequity

Syed Naeel Zafar - Zafar Faimi - Aftab Iqbal - Rozmana Channa - Adil H. Haider

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Abstract

Background: Surgical care is not uniformly available worldwide. Inequities in surgical care and access may also vary within countries, and the present study aimed to explore these disparities in Pakistan.

Methods: The National Health Survey of Pakistan was analyzed. The proportion of people with a history of abdominal surgery (AS) was calculated and associated factors were determined by weighted multivariate logistic regression. Factors tested were age, gender, urban/rural residence, province, literacy, community development index (CDI), and economic status (ES). The CDI was developed for each sampling unit from select household and individual data. The ES was constructed from ownership of assets.

Results: A total of 59 million adults were represented. Abdominal surgery had been performed in 3.2% adults (95% confidence interval [CI] = 2.67, 3.84), which corresponds to an annual rate of 85.9 per 100,000 population. Wide disparities were noted, with annual rates of AS varying from 7.8 to 219.6 per 100,000 population. Urban residents were independently twice as likely to have had AS (95% CI = 1.3, 2.8). Higher age (OR = 2.6, 95% CI = 1.3, 4.0), female gender (OR = 1.5, 95% CI = 1.1, 2.1), and higher ES (OR = 1.9, 95% CI = 1.2, 2.9) were also independently associated with AS. In rural populations ES was the only factor associated with surgery, whereas in urban populations gender and CDI had important roles in play.

Conclusions: Access to surgical care is disparate and grossly inadequate in Pakistan. This likely contributes to significant preventable morbidity and death. Physical access to surgical facilities, especially in rural areas and for those with a low CDI, is an important concern and should be prioritized in any forthcoming national policies.

Introduction

Surgery is an essential component of healthcare. Provision of acute surgical care, including trauma and obstetrics, and even elective procedures focused on correcting cataracts or club foot prevent significant disability and premature death. Surgical disease accounts for at least 11% of the world’s disability adjusted life years (DALYS) [1] and is no longer considered a luxury. Multiple studies have shown the provision of essential care to be a hurdle cont-
Your own experiences

Who? Me?

Your own experiences...
Funding Opportunities
Grants

• AAS global surgery grants
• Training Grants
• Fogarty / NIH
• Local Institution grants
• Fund Raising
Training Opportunities
Fellowship examples

• Paul Farmer Global Surgery Research Fellowship
• Paul Farmer Global Surgery Clinical Fellowship
• Rutgers New Jersey Medical School Global Surgery Fellowship
• International Surgical Oncology Global Cancer Disparities Fellowship – MSKCC
• Northwestern Trauma & Surgical Initiative
• VECD Global health Fellowship - Fogarty
• Global Surgery Research Fellowship - University of Utah
• UCSF center for global surgical studies
• Global surgery research program – Brigham and Women’s Hospital

• Many more research and fellowships opportunities.........
Conferences/Meetings
Books

Academic Global Surgery

Global Surgery and Public Health
A New Paradigm

GLOBAL SURGERY AND ANESTHESIA MANUAL
Providing Care in Resource-Limited Settings

Global Surgery
The Essentials
Thank you