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Getting Started In Global Surgery Research

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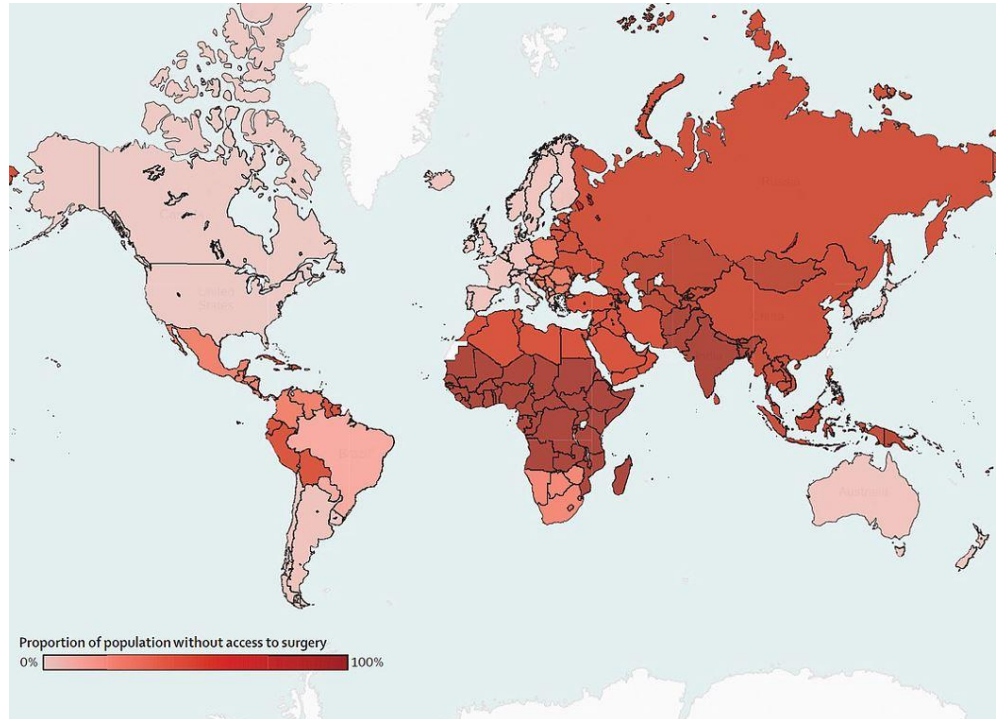
Disclosures

- The authors have no financial disclosures to report
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Outline

- Global Burden of Disease
- Current Research Needs
- Contract Negotiation
- Types of Global Surgery Research
- Training and Resources

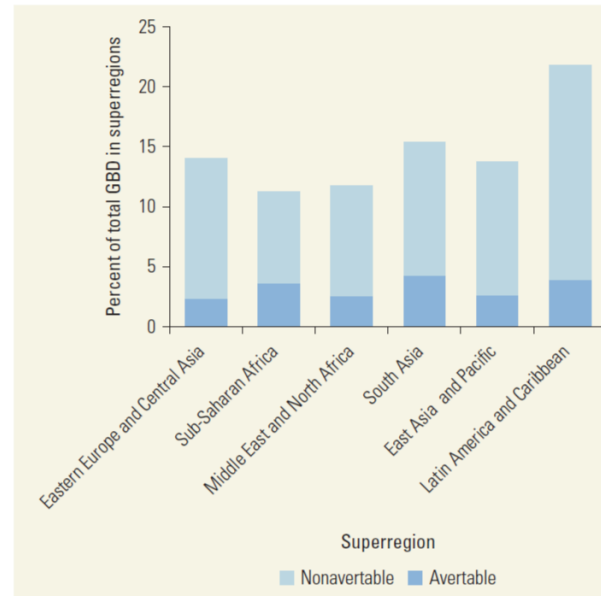
Global Burden of Disease



4.8 billion people or 67% world's population lack access to safe, affordable or timely surgical care

Burden of Surgical Disease

Figure 2.3 Burden Associated with a Group of Conditions That Can Be Treated with Basic Surgical Care in Low- and Middle-Income Countries



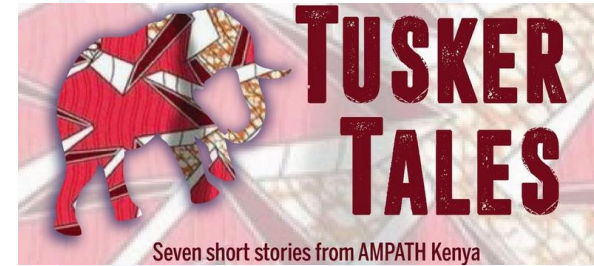
Source: Data from tables 2.3 and 2.4.

Note: GBD = global burden of disease. The group includes four gastrointestinal diseases, four maternal-neonatal conditions, and injuries that can be managed with simple interventions. Results are expressed as the percentage of the total superregion global burden of disease.

Historical Perspective

- Great momentum towards improving surgical care worldwide
- Need cannot solely be met through provision of direct surgical care during short-term volunteer humanitarian efforts

- Care
 - Comprehensive & preventative
 - Sustainable health system
- Training
 - Educate medical students, residents, community health workers
- Research



Secret to Success

“The secret to success lies in the ability of the two partners to learn from each other, and maintain an equilibrium so that one partner is not dominating the scheme, which has a lot to do with respect and trust. If that can be achieved, both partners have the ability to go beyond their usual boundaries.”

Fran Quigley “Walking Together, Walking Far”

Power of the Academic Health Center

“I can see quite clearly the value of the research, the training, and the care. Each on enriches the other.”



Haroun Mengech, “Walking Together, Walking Far”

Global Surgery Research

- Research aimed at improving access to affordable, safe, timely, effective, and quality surgical care



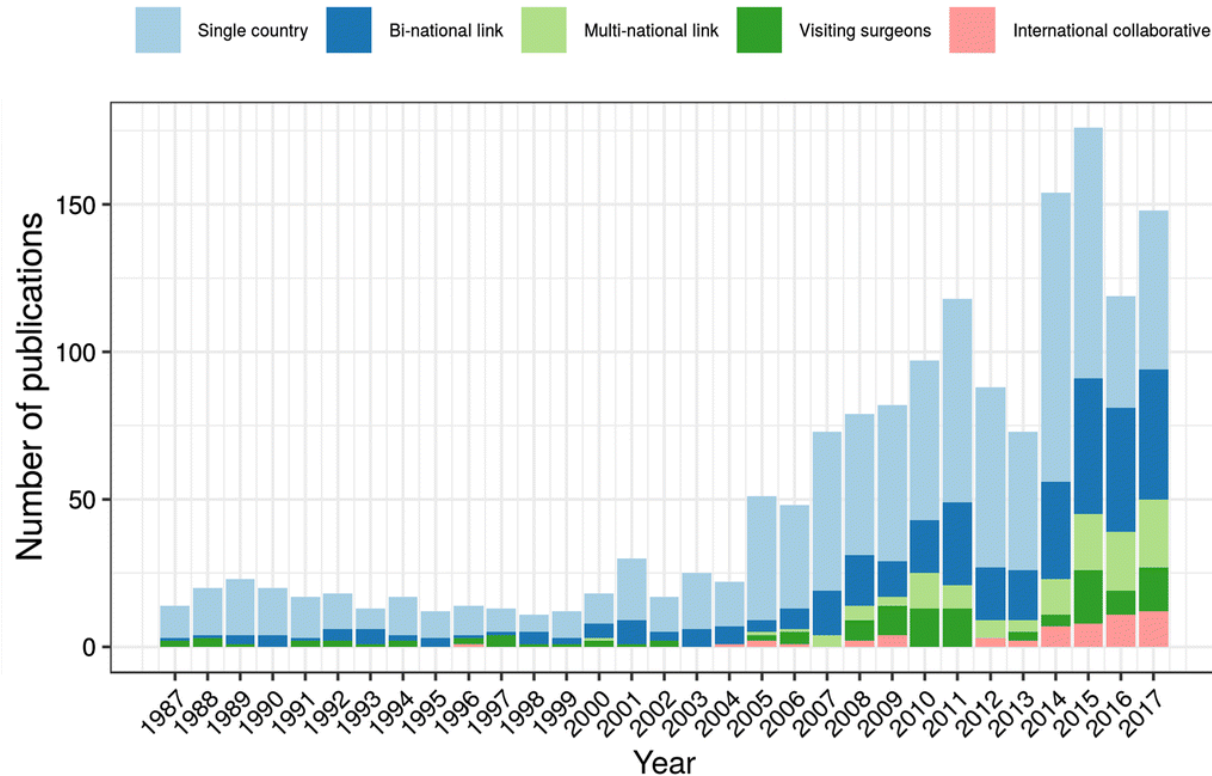
Current Research Needs

- Crucial for measuring the progress toward improving surgical care worldwide
- Aid in measuring where we have come from
- Identify new ways to improve care
- You can't improve what you don't measure!

Global Surgery Research

- Measures disease burden
- Evaluates effective resource allocation
- Ensures contextual relevance
- Identifies new approaches to improve surgical care

Growth in Global Surgery Research



Contract Negotiation

Contract Negotiation

- Assess the Needs of the Department
 - Academic Global Surgery is an emerging area of expertise
- Know Your Priorities & Goals
- **Ask or You Shall Not Receive**
 - Know Your Value
 - Time
 - Financial Support
 - Research/Administration Needs

Types of Global Surgery Research

World J Surg (2019) 43:2689–2698

<https://doi.org/10.1007/s00268-019-05112-w>

ORIGINAL SCIENTIFIC REPORT

Global Surgery: A 30-Year Bibliometric Analysis (1987–2017)

Alessandro Sgrò¹ · Ibrahim S. Al-Busaidi² · Cameron I. Wells³ · Dominique Vervoort⁴ ·
Sara Venturini⁵ · Valeria Farina⁶ · Federica Figà⁷ · Francesc Azkarate⁸ ·
Ewen M. Harrison⁹ · Francesco Pata¹⁰

Published online: 5 August 2019

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Table 1 Characteristics of included articles ($n = 1623$)

| Variable | No. (%) |
|--|-----------------------|
| Open access studies | 736 (45.3%) |
| Funded studies | 291 (17.9%) |
| Total no. of citations | 17,985 |
| Median no. of citations per article | 5 (IQR: 1–13) |
| Median IF per article | 0.65 (IQR: 0.00–1.90) |
| Study design | |
| Observational | 1440 (88.7%) |
| Experimental randomised controlled | 71 (4.4%) |
| Experimental non-randomised controlled | 72 (4.4%) |
| Economic evaluations | 40 (2.5%) |

- Burden of disease
- Measure disparities

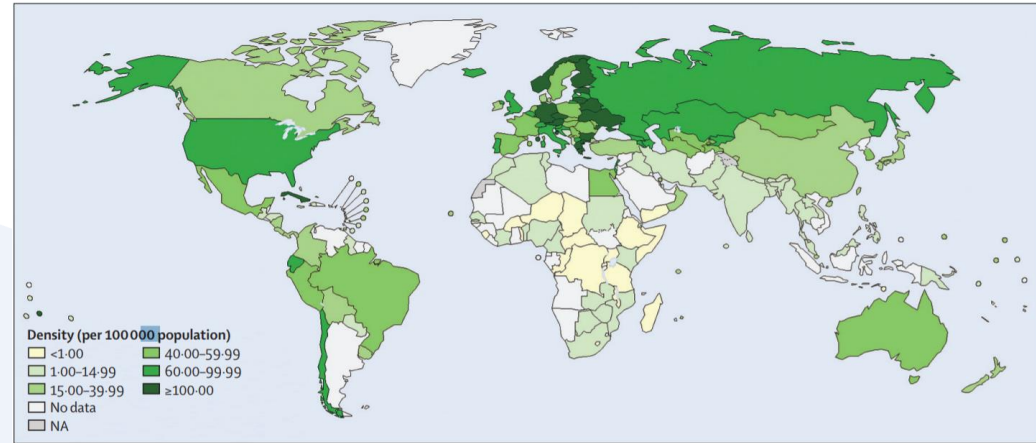


Figure: Global distribution of surgeons, anaesthesiologists, and obstetricians, per 100 000 population

NA=countries or territories that are not WHO members and thus excluded from our data.

Uni in 2004.

Interpretation Worldwide volume of surgery is large. In view of the high death and complication rates of major surgical procedures, surgical safety should now be a substantial global public-health concern. The disproportionate scarcity of surgical access in low-income settings suggests a large unaddressed disease burden worldwide. Public-health

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(S R Lipsitz ScD, A A Gawande)

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Dr Thomas G Weiser,
Department of Health Policy

- Defining the needs

– What is needed where and what is available

- Access
- Quality
- Cost
- Outcomes

BMJ Global Health

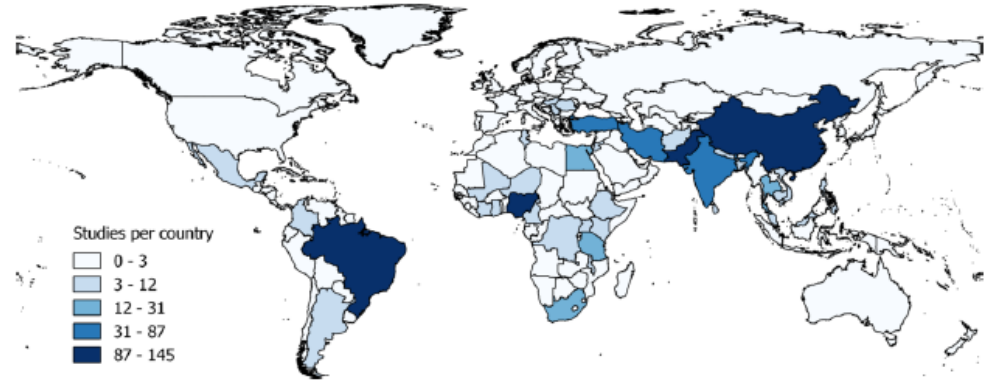


Figure 2. Distribution of the perioperative mortality rate (POMR) literature in low-income and middle-income countries. The number of papers presenting POMR data for each country.

Surgical Education

Training surgeons in LMICs

- How?
- What works
- Best practices



JAMA Network

JAMA Surgery

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Original Investigation **FREE**

April 2014


A Pilot Comparison of Standardized Online Surgical Curricula for Use in Low- and Middle-Income Countries

Seth D. Goldstein, MD¹; Dominic Papandria, MD²; Allison Linden, MD, MPH³; et al

[World Journal of Surgery](#)
November 2016, Volume 40, [Issue 11](#), pp 2643-2649 | [Cite as](#)

Efficacy of Surgical Simulation Training in a Low-Income Country

Authors [Authors and affiliations](#)

Gavin Tansley , Jonathan G. Bailey, Yuqi Gu, Michelle Murray, Patricia Livingston, Ntakiyiruta Georges, Marius Hoogerboord

Original Scientific Report
First Online: 01 June 2016

10 443 13
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Cost Effectiveness

- Myth – surgery is expensive



Cost-Effectiveness of Cervical-Cancer Screening in Five Developing Countries

- Is it a LM

Sue J. Goldie, M.D., M.P.H., Lynne Gaffikin, Dr.P.H., Jeremy D. Goldhaber-Fiebert, A.B., Amparo Gordillo-Tobar, M.D., Ph.D., Carol Levin, Ph.D., Cédric Mahé, Ph.D., and Thomas C. Wright, M.D. for the Alliance for Cervical Cancer Prevention Cost Working Group*

BACKGROUND Cervical-cancer screening strategies that involve the use of conventional cytology and require multiple visits have been impractical in developing countries.

November 17, 2005

N Engl J Med 2005; 353:2158-2168

DOI: 10.1056/NEJMsa044278

infection detection and home treatment, or \$2 for tetanus immunization of pregnant women. Sixty-two percent of the DALYs saved came from emergency obstetric care (EmOC) related activities. We conclude that cost effective basic hospital service can be added to immunization, family planning and other basic health services now available in countries like Bangladesh with a very low increase in total cost and that the benefits which would accrue, particularly for maternal and perinatal mortality, would be great.


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Keywords: Cost-effective; Emergency obstetric care; Hospital; Bangladesh

- mHealth
- Low cost technology
- AI

Surgery
Protocol



Using mobile health technology and community health workers to identify and refer caesarean-related surgical site infections in rural Rwanda: a randomised controlled trial protocol 

Kristin A Sonderman^{1,2}, Theoneste Nkurunziza³, Fredrick Kateera³, Magdalena Gruendl², Rachel Koch², Erick Gaju⁴, Caste Habiyakare⁴, Alexi Matousek¹, Evrard Nahimana³, Georges Ntakiyiruta⁵, Robert Rivielo^{1,2}, Bethany L Hedt-Gauthier^{2,3}

[Author affiliations +](#)

Abstract

Introduction Surgical site infections (SSIs) are a significant cause of morbidity and mortality in low-income and middle-income countries, where rates of SSIs can reach 30%. Due to limited access, there is minimal follow-up postoperatively. Community health workers (CHWs) have not yet been used for surgical patients in most settings. Advancements in telecommunication create an opportunity for mobile health (mHealth) tools to support CHWs. We aim to evaluate the use of mHealth technology to aid CHWs in identification of SSIs and promote referral of patients back to healthcare facilities.

Methods and analysis Prospective randomised controlled trial conducted at Kirehe District Hospital, Rwanda, from November 2017 to November 2018. Patients ≥ 18 years who undergo caesarean section are eligible. Non-residents of Kirehe District or patients who remain in hospital >10 days postoperatively will be excluded. Patients will be randomised to one of three arms. For arm 1, a CHW will visit the patient's home on postoperative day 10 (± 3 days) to administer an SSI screening protocol (fever, pain or purulent drainage) using an electronic tablet. For arm 2, the CHW will administer the screening protocol over the phone. For both arms 1 and 2, the CHW will refer patients who respond 'yes' to any of the questions to a health facility. For arm 3, patients will receive follow-up care. Our primary outcome will be the impact of the mHealth-CHW intervention on the rate of return to hospital with an SSI.

Ethics and dissemination The study has received ethical approval from the Rwandan National Ethics Committee at Kirehe District Hospital, Rwanda Ministry of Health, Rwanda Surgical Site Infection Research Centre, Rwanda Surgical Site Health, through conferences and peer-reviewed publications.

Trial registration number [NCT03311399](#)

Generation of political priority for global surgery: a qualitative policy analysis

Yusra Ribhi Shawar, Jeremy Shiffman, David A Spiegel

Summary

Background Despite the high burden of surgical conditions, the provision of surgical services has been a low global health priority. We examined factors that have shaped priority for global surgical care.

Methods We undertook semi-structured interviews by telephone with members of global surgical networks and ministries of health to explore the challenges and opportunities surgeons, anaesthesiologists, and other proponents face in increasing global priority for surgery. We did a literature review and collected information from reports from organisations involved in surgery. We used a policy framework consisting of four categories—actor power, ideas, political contexts, and characteristics of the issue itself—to analyse factors that have shaped global political priority for surgery. We did a thematic analysis on the collected information.

Findings Several factors hinder the acquisition of attention and resources for global surgery. With respect to actor power, the global surgery community is fragmented, does not have unifying leadership, and is missing guiding institutions. Regarding ideas, community members disagree on how to address and publicly position the problem. With respect to political contexts, the community has made insufficient efforts to capitalise on political opportunities such as the Millennium Development Goals. Regarding issue characteristics, data on the burden of surgical diseases are limited and public misperceptions surrounding the cost and complexity of surgery are widespread. However, the community has several strengths that portend well for the acquisition of political support. These include the existence of networks deeply committed to the cause, the potential to link with global health priorities, and emerging research on the cost-effectiveness of some procedures.

Interpretation To increase global priority for surgery, proponents will need to create an effective governance structure



Lancet Glob Health 2015;
3: e487-95

See [Comment](#) page e432

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- Epidemiology
- Health Services and Clinical Outcomes
- Surgical Education
- Surgical Innovation
- Policy and Advocacy
- Basic and Translational Research
- Implementation

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A Randomized Trial of Low-Cost Mesh in Groin Hernia Repair

Jenny Löfgren, M.D., Ph.D., Pär Nordin, M.D., Ph.D., Charles Ibingira, M.D.,
Alphonsus Matovu, M.D., Edward Galiwango, M.A.,
and Andreas Wladis, M.D., Ph.D.

Training and Resources

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

Do I need a degree?

| Pro-argument | Con-argument |
|----------------------|----------------------------|
| Label | Time |
| Prestige (feel good) | Money |
| Network | Fluff courses (wastage) |
| Leverage | |

Should definitely pursue training - Does not have to be a degree course.
Focus on skill building

Fellowship Opportunities

- 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.....

Organizations

- WHO- GIEESC
- ACS-OGB
- RAS- Global Surgery workgroup
- GlobalSurg
- ASAP
- CUGH
- ISS
- Specialty specific organizations

Conferences/Meetings



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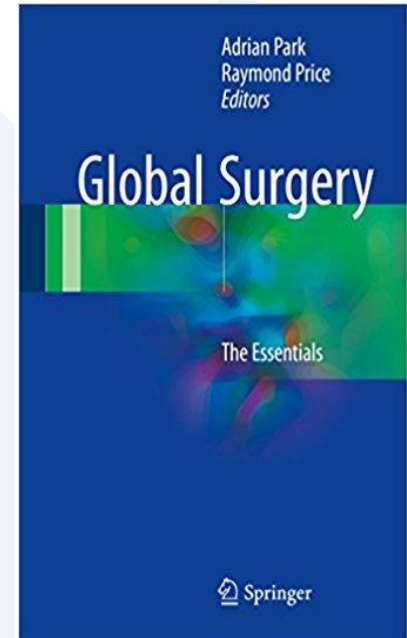
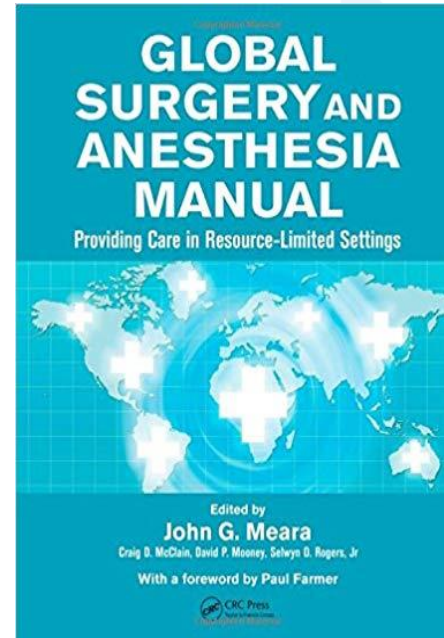
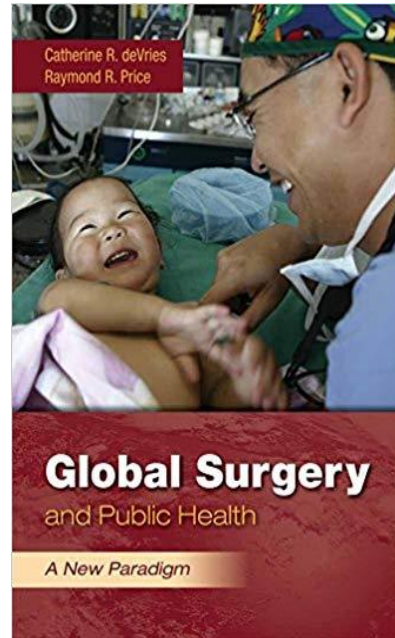
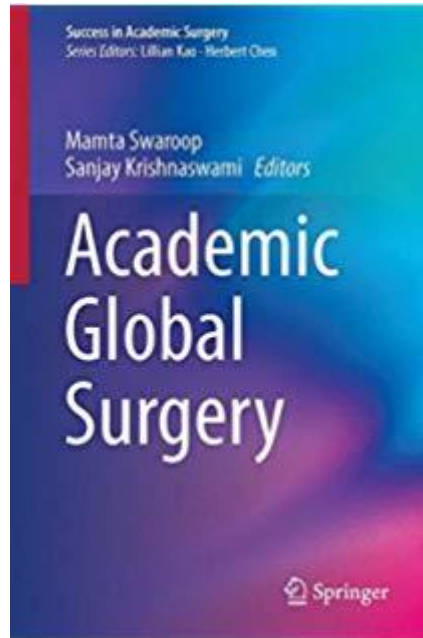
BETHUNE
ROUND TABLE 2018



Consortium of
Universities
for Global Health



Books



Thank you

Questions?



@NabeelZafarMD

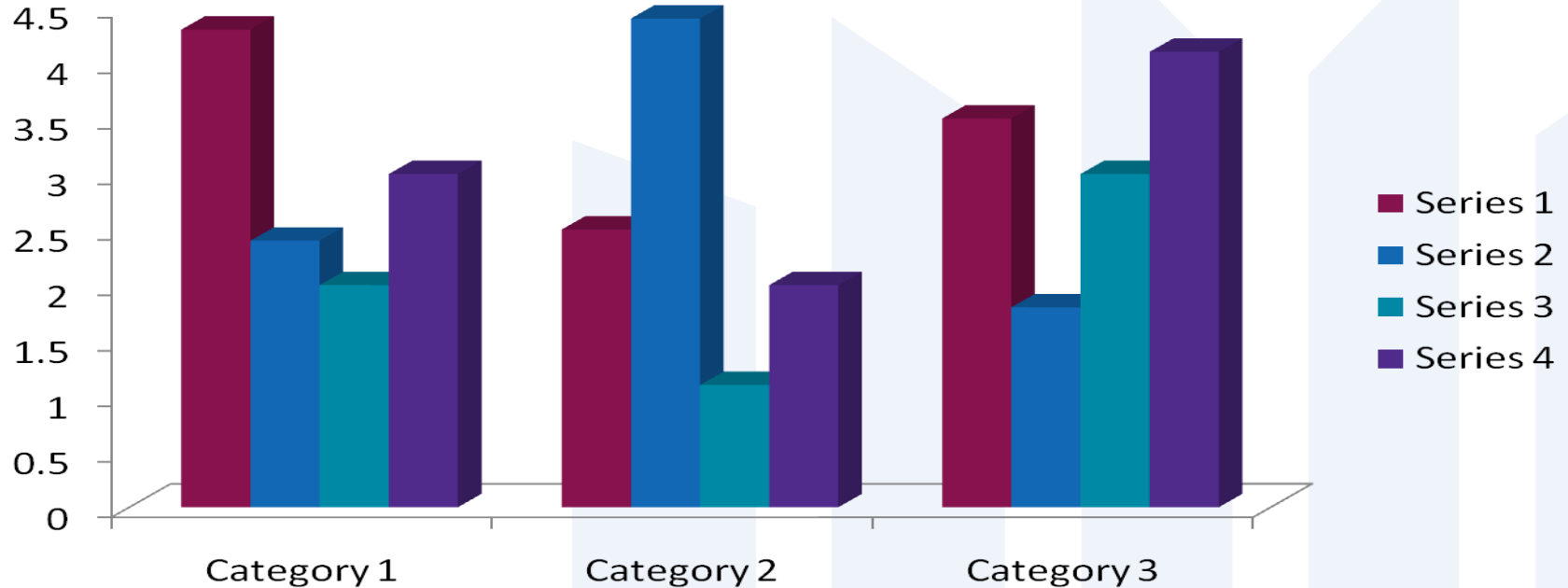


@AllieMcDowMD



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Here is What A Graph Looks Like



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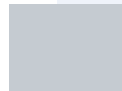
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In LMICs research on

- The improvement of surgical care
- The reduction of death and disability from surgically treatable conditions
- The estimation of the burden of surgical disorders
- Investigation of the state of surgical care in LMICs according to one or more: A) Access to timely essential surgery. B) specialist surgical workforce density. C) surgical volume. D) perioperative mortality rate E) access to affordable surgical and anesthesia care
- The identification of health disparities/inequalities in the provision of surgical care
- The identification of best strategies for instituting/delivering surgical services in settings of limited resources