



Abstract for half-time review | Hampus Holmer, PhD candidate

Global aspects on access, workforce and quality of surgery – from health systems to patients

Background

Worldwide, an estimated 5 billion people lack access to safe, affordable surgical care when needed. This leads to millions of deaths and significant morbidity each year, due to complicated pregnancies, congenital malformations, hernias, open fractures, and many other treatable surgical conditions. The World Health Organization and the Lancet Commission on Global Surgery highlight three aspects of particular importance: access to services, surgical workforce and, at the intersection of access and workforce, quality of care. Yet, knowledge to guide implementation toward better access and quality of surgical care is very limited about these aspects globally.

Aim

The overall aim is to study access, workforce and quality of care, and specifically to quantify the global unmet need for emergency obstetric care (I) and the global distribution of specialist surgeons, anaesthesiologists and obstetricians (IIA and IIB); to study the cost-effectiveness of improved access to care, as exemplified by club-foot repair in Sub-Saharan Africa (III); to review the literature on surgery in Sierra Leone (IV), and; to study quality of general and obstetric surgical care in Sierra Leone (V) and Sweden (VI).

Method

I have collected, reviewed and analysed national and sub-national data on emergency obstetric care (I), the number, distribution (IIA) and migration (IIB) of specialist surgical workforce, and cost and effect of club-foot repair using the Ponseti method (III). I have carried out systematic reviews of the literature for studies I and IV. In the planned studies, I will work with the WHO in Sierra Leone to describe the current state of surgery and specifically obstetric surgery in government hospitals, with a focus on quality improvement and hospital management capacity (V). I will also carry out a registry-based study on 30-day perioperative mortality of all operations in Sweden (VI).

Preliminary results

The global met need for emergency obstetric care is 45% [interquartile range 28–57%], and the met need is significantly correlated with GDP and the proportion of births attended by skilled birth attendants (I). There are an estimated one million specialist surgeons, 550 thousand anaesthesiologists and 483 thousand obstetricians, of which only 1/5 serve the poorest half of the world (IIA). In high-income countries there is a significant dependency of specialist surgical workforce from low- and middle-income countries (IIB). Improved access to club-foot repair is highly cost-effective, at 22.46 USD per Disability Adjusted Life Year averted (III). There is a very limited body of literature on surgery in Sierra Leone, especially regarding quality of care (IV).

Significance

Increasing and sustaining access, workforce and quality of care are central challenges for health systems across the world. Surgery could be a model for understanding, explaining and tackling these challenges through research-driven solutions to improve patient outcomes, in addition to meeting the needs of millions of surgical patients around the world.



Publication list for PhD

- I. **Holmer H**, Oyerinde K, Meara JG, Gillies R, Liljestrand J, Hagander L. The global met need for emergency obstetric care: a systematic review. *BJOG: an international journal of obstetrics and gynaecology* 2015; 122(2): 183-9.
- IIA. **Holmer H**, Lantz A, Kunjumen T, Finlayson S, Hoyler M, Siyam A, Montenegro H, Kelley ET, Campbell J, Cherian MN, Hagander L. Global distribution of surgeons, anaesthesiologists, and obstetricians. *Lancet Glob Health* 2015; 3 Suppl 2: S9-11.
- IIB. Lantz A, **Holmer H**, Finlayson S, Ricketts TC, Watters D, Gruen R, Hagander L. International migration of surgeons, anaesthesiologists, and obstetricians. *Lancet Glob Health* 2015; 3 Suppl 2: S11-2.
- III. Grimes CE, **Holmer H**, Maraka J, Ayana B, Hansen L, Lavy CBD. Cost-effectiveness of club-foot treatment in low-income and middle-income countries by the Ponseti method. *BMJ Global Health* 2016; 1(1).

Submitted

- IV. Bolkan H*, **Holmer H***, Lebbie A. Surgery in Sierra Leone: systematic review of the available literature. Submitted to Pan-African Medical Journal, 2016; *joint first authors

Planned publications

- V. *The current state of surgery and specifically obstetric surgery in government hospitals in Sierra Leone, with a focus on quality improvement and hospital management capacity*
- VI. *Registry-based study on 30-day peri-operative mortality of all operations in Sweden*