

Conversation with Richard Sullivan, February 6, 2014

Participants

- Richard Sullivan, MD, PhD – Professor of Cancer Policy & Global Health at Kings College London, Director of the Kings Institute of Cancer Policy
- Elie Hassenfeld – Co-Founder and Co-Executive Director of GiveWell

Note: This set of notes was compiled by GiveWell and gives an overview of the major points made by Dr. Sullivan.

Summary

GiveWell spoke with Dr. Sullivan as part of its investigation of surgery in developing countries. The conversation covered surgical missions and the challenges they face in delivering surgeries in low-resource settings. Dr. Sullivan also discussed the role that philanthropy could play in building surgical capacity in countries where it is limited, mentioning organizations and institutions involved in this work and noting countries that have made progress in improving the provision of surgical care.

Surgical missions

Surgical missions vary in terms of the quality of care delivered and how much they focus on building in-country capacity. Missions for delivering cataract surgery have been largely successful in the last few decades. These missions have evolved from simply delivering cataract surgeries to also training medical and paramedical staff to deliver the same kind of care. With missions that target humanitarian crises and post-conflict regions, the goal is to deliver care to a fragile population; sustainability is not a feasible priority. Other types of missions ought to include education and training, though not all do. However, even when missions try to ensure sustainability through building in-country capacity, they often find upon returning the following year that the people who were trained have left or are charging exorbitant fees for their services, so this does not always help increase provision of surgery for the poor.

There is no evidence in the literature on the quality or sustainability of surgical missions. For cataracts and c-sections, there are agreed-upon standards for training and delivery, but such standards don't exist for other types of surgeries carried out on surgical missions, and it would be difficult to create them, because the environments in which missions take place vary widely. In the absence of objective measures, donors rely on an organization's reputation, historical involvement, and institutional backing as indicators of effectiveness.

Challenges

When surgeons travel to low-resource settings for the first time, they face many challenges:

- The type of disease and spectrum of presentation can be difficult to understand.
- Surgeons from high-income countries often specialize very early in their careers, so they do not have broad enough expertise to carry out surgical procedures that are common in developing countries (e.g., fistula, cataracts, c-section). Surgeons from middle-income countries tend to be more experienced as generalists.
- Many medical professionals are interested in participating in surgical missions, but they don't have a good sense of what it actually means to operate in a low-resource setting. Once they go on missions, some surgeons are not able to handle the challenges and the stress.
- It is difficult for surgeons in high-income countries to take time away from their practices, especially when they need to pay back loans from their education.
- There may be a lack of medical staff capacity, such as personnel to assist during a surgery and to provide postoperative care. For example, if a patient starts experiencing renal failure, there isn't necessarily going to be a nephrologist on call.
- Surgeries in low-resource settings must be able to be administered with only ketamine-induced or local anesthesia, because general anesthesia is not usually available.
- There often are environmental constraints, such as lack of access to clean water, intermittent power, poor sanitation, etc.

In order to effectively deliver care on a surgical mission, procedures need to be well-adapted to what can be delivered safely in that environment.

Surgery charities that focus on cleft lip and cleft palate

Cleft lip and cleft palate surgical procedures are very complicated, and very few low-resource settings have permanent facilities that deliver this care. Organizations that conduct missions to provide cleft lip and palate surgeries tend to be very experienced, so they can anticipate the challenges they will find. Their missions often bring a whole team of highly specialized medical staff and all of the necessary tools, including anesthesia, lighting, generators, and even inflatable surgical facilities. Cleft lip and palate are huge problems in low-resource countries; surgery charities that treat these conditions do a lot of good by helping their patients go on to lead more high-functioning lives.

However, at a population level, the numbers of people suffering from cleft lip or palate are quite small, relative to those suffering from cancer or trauma, for example. If health issues were prioritized by prevalence, cleft lip and palate would not be at the top of the list. The reason these get so much attention is because there are a lot of head and neck surgeons and a large amount of funding given to cleft lip and palate surgery charities.

Improving surgical care in low-resource settings

Role for philanthropy

Dr. Sullivan said that figures on the total funding for improving surgical provision are not available, though he believes it is a large amount based on the level of activity. It would be difficult to cost out what is spent on surgical provision, though one could try to figure this out based on spending at the various organizations and institutions involved.

Government funders such as the U.S. Agency for International Development (USAID) and the U.K.'s Department for International Development (DFID) tend to put a lot of emphasis on other aspects of public health, such as communicable disease indicators, but not on surgical provision.

In low-income countries, what is most underfunded is building the capacity to deliver basic surgeries and to provide local anesthesia. This requires building the infrastructure and systems, developing long-term relationships among institutions and medical professionals, and investing in training and education in the region. This is where discreet surgical missions are less effective. Many countries have only proto-systems in place. Large donors who want to strengthen surgical care in low-resource settings should invest in organizations that are building sustainable surgical capacity to serve the majority of people. With sufficient funding and institutional partners, such work could have a noticeable impact within 5-10 years.

The cost-effectiveness of surgery is incredibly variable between countries, because prices vary up to 25x for the same procedures. For some surgical missions, surgeons donate their time, so this can lower costs. There is one meta analysis of the cost-effectiveness of surgical provision, but very little is known about this.

Organizations involved

Charities that work on increasing surgical care include:

- Surgeons OverSeas (<http://www.surgeonoverseas.org/>)
- The Danish Mining Group (<http://www.danishdemininggroup.dk/home/>)
- Medecins Sans Frontiers/Doctors Without Borders (<http://www.msf.org/>)
- Smile Train (<http://www.smiletrain.org/>)

- Operation Smile (<http://www.operationsmile.org/>)
- ORBIS International (<http://orbis.org/>)
- Partners in Health (<http://www.pih.org/>)

Dr. Sullivan's impression is that institutions conduct even more work in this area than charities. Institutions assist in developing all aspects of surgical capacity, including management systems, intensive care units, triage, and the logistics of supply chains for pharmaceuticals and non-pharmaceuticals. Some institutions that work on improving surgical capacity are Harvard University, Indiana University, Washington University in St. Louis, Bonds Jewish Hospital and King's Health Partners

Dr. Sullivan does not know of any systematic reviews of groups that work to improve surgical provision in low-resource settings.

Progress in countries

Low-resource countries have made varying degrees of progress with surgical provision. Multiple states in India have successfully increased the availability of basic surgeries through the public sector (e.g., Kerala, Tamil Nadu), while other Indian states still have very poor provision (e.g., Punjab, Bihar). In Rwanda, basic surgical provision has increased but the sustainability of these programs is questionable. Recently, there have been developments in countries such as Ghana and Botswana toward greater provision of basic surgeries. Of all low- and middle-income countries, India and Cuba are training the most surgeons from other low- and middle-income countries. There is no single trajectory that countries have followed.

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