Strengthening capacity for surgery and perioperative care in resource-poor settings is necessary to address the growing burden of surgical conditions in low- and middle-income countries. Many different approaches have evolved to meet global surgical needs, some through faith or non faith-based medical missions, other through infrastructure and supplies delivery and development, some specific disease-based, and others broader. Recently, a growing number of academic medical centers and nongovernmental organizations in high-income countries have developed partnerships with teaching hospitals overseas to assist local training programs (Gosselin, 2011). Ideally, some of the elements of successful partnerships are that they benefit the visiting and host institutions equally, address local training needs, value collaboration in research, and adopt a multidisciplinary approach (Riviello 2010).

In this GHDonline panel discussion, a host of clinicians working in such programs described the characteristics of successful, egalitarian partnerships, the infrastructure required, and common challenges. They offered suggestions to develop and measure sustainable, equitable training and research partnerships to enable to delivery of quality surgery and perioperative care in resource-limited settings.

**Key Points**

- Partnerships should be built from relationships that are mutually respectful, transparent, honest, and collaborative.
- Local needs must be identified and prioritized. Resource-poor settings have substantial needs around training, infrastructure and service delivery making prioritization difficult but necessary.
- Shared goals need to be developed early on and worked toward in a step-wise fashion. Goals and projects should be mutually beneficial. Potential goals include: strengthening training experience of residents from visiting and host institutions; research collaborations; exchange of expertise.
- An exit timeline should be discussed early on with the ideal exit being an ongoing professional relationship.
- A training partnership should not compete with the development of the local system.

**Key Infrastructure Needs**

- Partnership should advocate for investment in appropriate technology and more efficient use of existing resources. Development of biomedical engineering capacity often will be critical to inventory and maintain equipment, emphasizing the importance of using locally available equipment whenever possible rather than relying on donations.
- The starting point should be a thorough needs assessment of local infrastructure, personnel, and medical education training programs to provide a baseline to compare future progress against and to prioritize needs.
- Surgical and anesthesia trainees need mentors and both mentors and mentees need facilitation support over the long term.
- Training should be standardized as much as possible with context-relevant curricula agreeable to both sides.
- Internet capacity, e-learning, and supporting technologies enhance cross-institutional learning and relationships.

**Key Challenges**

- The overall lack of resources within the countries and at the global level to support surgery and anesthesia.
- Low pay and high work loads lead to low recruitment and retention, especially of trained physician anesthesiologists and surgeons. “Internal” brain drain is also a problem in countries with insufficient incentives to keep trained physicians working in rural areas or not taking on administrative roles in government or NGOs.
- Political agendas on all sides can be corrosive and counterproductive. Clinicians should be aware of these issues in the local context and realize that mutual trust takes time to build, transparency is essential, and accountability is also mutual.
- Misaligned incentives can impede progress.

**Recommendations for Successful Partnerships**

- Find local champions to support moving important projects forward.
- Identify reliable funding sources to support future project growth.
- Develop matched expectations on both sides. The host country must take the lead in goals and design.
- Develop an interdisciplinary approach, including surgery, anesthesia, nursing, and extended to pre-operative, post-operative, and critical care.
- Openly share what has worked and what hasn’t (i.e. “lessons learned”) worked with colleagues to avoid redundant, wasteful use of resources.
- Don’t reinvent the wheel! Educate yourself on available expertise in your area of interest. Where possible, when multiple groups are doing similar work, especially in the same location — coordinate/collaborate.
• Longer-term commitments tend to work better for both sides. One model proposed was “global surgery fellowships” through which senior trainees or junior faculty from resource-rich environments are paired up to work full-time over the course of a year or two with a host institution.
• Involve local government bodies from the outset, including but not limited to the Ministry of Health.

Quality & Sustainability Measurement
• Partnerships should commit resources to enable ongoing evaluation of the quality and sustainability of the initiative, as well as perform evaluations of effectiveness and impact.
• Potential measurements include: 1) the number of resident experiences at partner centers; 2) number of collaborative publications; 3) volume and case-mix of surgical services (operations) provided; and 4) increase in overall number of providers trained, and whether they remain in their home country at various intervals (six months, one year, two years, etc.)
• Trainee skills should be measured through interim evaluations to assess a project or program’s effectiveness at transferring skills. Additionally surgical outcomes should be measured to assess quality. These may include process measures, morbidity, or mortality.
• Measuring the level of sustainability is more difficult. Whether there has been an uptake in local resources could be a measure of the degree of local ownership and sustainability. Another indicator of success could be whether the partnership has created jointly derived research that has led to positive policy changes or increased donor funding, and whether local research capacity has developed.
• Partnerships should continuously assess whether the positive outcomes are being sufficiently generated to, at the minimum, justify the costs for international travel.

Key References

Enrich the GHDonline Knowledge Base
Please consider replying to this discussion with the following information
• If you currently work in an academic surgery partnership, please post descriptions of your work.
• If you are interested in this topic, looking for collaborators, or want guidance on building a sustainable partnership consider posting your observations, questions, and feedback.

You may use this brief for informational, non-commercial purposes with credit attribution: The Global Health Delivery Project, GHDonline.org, June 9, 2011. Please see our Terms of Use for more information.