Alternative Indicators for Measuring the Impact of Surgical Care Globally: Reply

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Published online: 24 December 2013
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I read with interest Dr. McQueen's perspective on measuring the impact of surgical intervention globally [1]. The perioperative mortality rate (POMR) is likely to be a useful initial health indicator for surgical care in selected settings. In the district hospital where we work in rural Rwanda, the in-hospital mortality rate for surgical patients, including those undergoing Cesarean section, was 0.6 % in 2009, making the 24-h postoperative POMR for our hospital nearly zero. As suggested, we have not found the POMR 24 to be a useful metric for our individual program. Of the 800–900 procedures we perform annually, the outcome for the majority is unlikely to be death because of both the nature of the procedures and patient factors. This is despite the fact that more than 50 % of the operations performed are for nonelective indications. A risk-adjusted POMR 24 may be more useful for comparing surgical programs against benchmarks and for monitoring progress over time. The POMR within 30 days postoperatively is unattainable with our current resources and information systems.

A readily available metric at many African district hospitals is the transfer rate. In our hospital, the transfer rate to the centrally located referral hospitals is high (10.0 %), with the highest rates for head trauma (21.4 %), fractures (18.2–31.6 %, depending on location of the fracture), and joint dislocations (40.0 %). Patients with admitting indications related to trauma are more likely to

be transferred than those with elective or urgent diagnoses ($p = 0.002$). Lowering transfer rates for trauma by improving our ability to treat orthopedic conditions is a target for our training and service delivery programs in rural Rwanda. Standardizing contextually relevant indicators (e.g., risk-adjusted POMR 24, transfer rates) for monitoring and evaluating surgical programs globally should be examined.

We also have utilized measurements of processes to strengthen our surgical services. Specifically, quality improvement programs regarding perioperative procedures have resulted in better adherence to protocols regarding preoperative antibiotic administration and maintenance of oxygen supplies. Although perhaps more challenging to define and collect, best practice indicators could be instrumental in measuring and guiding interventions to improve surgical care globally.

Reference

1. McQueen KA (2013) Editorial perspective: global surgery: measuring the impact. *World J Surg* 37:2505–2506. doi:[10.1007/s00268-013-2198-z](https://doi.org/10.1007/s00268-013-2198-z)

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