More Than 2 Billion Lack Surgical Access

More than two billion people worldwide do not have adequate access to surgical treatment, according to a new study from the Harvard School of Public Health (HSPH). A substantial amount of the global burden of disease comes from illnesses and disorders that require surgery, such as complicated childbirth, cancer and injuries from road accidents.

The wealthiest third of the global population undergoes 75 percent of the estimated 234 million surgical procedures done each year, the poorest third just four percent. “Our findings suggest that high-income regions have more than 10 times the number of operating theatres per person than low-income regions,” said Luke Funk, research fellow in HSPH's Department of Health Policy and Management and a surgical resident at Brigham and Women's Hospital in Boston. “Addressing this disparity will be a huge challenge, but global public health efforts have had a profound impact on other major sources of morbidity including malnutrition, infectious diseases, and maternal and child health. The same could be accomplished for surgical care.”

The study appears online on the website of the journal *Lancet* and will appear in a later print issue. The researchers, led by Funk and senior author Atul Gawande, associate professor in HSPH's Department of Health Policy and Management and a surgeon at Brigham and Women's Hospital, obtained profiles of 769 hospitals in 92 countries participating in the World Health Organization's Safe Surgery Saves Lives initiative, which aims to reduce surgical deaths and is led by Gawande.

Based on the profiles, they calculated ratios of the number of functional operating theatres to hospital beds in seven geographical regions worldwide. The researchers used pulse oximetry, a monitor that measures the amount of oxygen in patients' blood during surgery and an essential component of safe anesthesia and surgery, as an indicator of operating theatre resources.

The results showed that all high-income regions had at least 14 operating theatres per 100,000 people. In contrast, those in low-income regions had less than two operating theatres per 100,000 despite having a higher burden of surgical disease. In addition, pulse oximetry was unavailable in nearly 20 percent of the operating theatres worldwide and absent more than half the time in low-income regions. The researchers estimated that around 32 million surgeries are performed each year without pulse oximetry, a basic standard of care that is available in more than 99 percent of operations done in high-income regions.

According to Gawande, “It is not news that the poor have worse access to hospital services like surgery. But the size of this population is a shock. Our findings indicate that one-third of the world's population remains effectively without access to essential surgical services – services such as emergency cesarean section and

treatment for serious road traffic injuries. Surgery has been a neglected component of public health planning and this clearly needs to change."

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