

# Global surgical systems: progress, gaps, and priorities for the next decade

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**Cite as:** Krishna Kumar, P, Zadey, S., Ramanujam, A., & Jesudian, G. Strengthening Rural Surgical Networks in India: Decoding the Past, the Present, and the Future. *Impact Surgery*, 2(5), 150-152. <https://doi.org/10.62463/surgery.229>

Our new Lancet Health Policy analysis<sup>1</sup> is the major comprehensive audit of surgical access since publication of the Lancet Commission on Global Surgery in 2015<sup>2</sup>. These benchmarks should be viewed in context, since the severe constraints of the COVID-19 pandemic hampered progress. Without the efforts made so far, performance would have been even weaker. Low-income countries still perform fewer than 1000 operations per 100,000 population each year, one fifth of the benchmark set ten years ago<sup>2</sup>. Postoperative death remains a major unsolved problem, now estimated at more than three million deaths annually, exceeding deaths from tuberculosis, malaria, and HIV/AIDS combined (figure 1)<sup>3</sup>. These figures should continue to force the global surgery community to rethink how it frames value, measures progress, and persuades governments to invest.

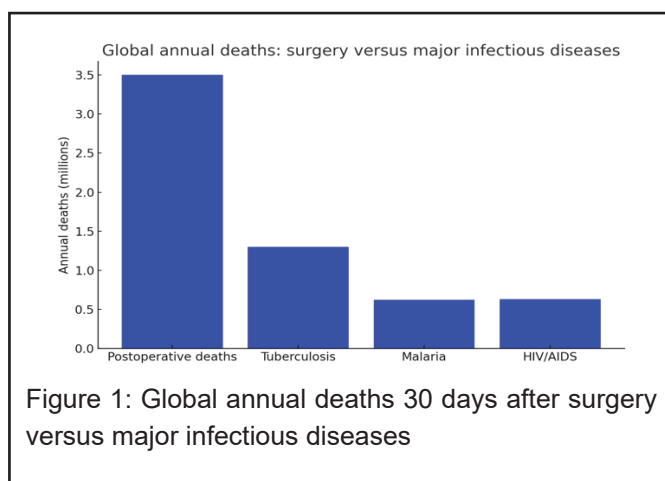


Figure 1: Global annual deaths 30 days after surgery versus major infectious diseases

The new analysis argues that surgery should be viewed as health-system infrastructure. A hospital able to repair a hernia today can typically also provide the oxygen, electricity, and sterilisation capacity required for a cross-

cutting range of other procedures, including caesarean section and trauma care. This systems view is reflected in World Health Assembly Resolution 68.15, which embeds emergency and essential surgical care within Universal Health Coverage<sup>4</sup>. The resolution, however, risks being seen financially competitive with other essential areas including vaccines, basic medications, and maternal care. Furthermore, surgery risks being downgraded within that resolution as global funding models change.

Moving away from a competitive view into a financially collaborative one is perhaps the only way to move forwards. For example, updated modelling in the Health Policy article shows that scaling a package of essential surgical cancer procedures in low- and middle-income countries could return productivity gains well above implementation costs<sup>5</sup>. Similar economic analyses for obstetrics and trauma are overdue and may help persuade health ministers to invest in core surgical services in the future.

Worldwide surgical data architecture has improved greatly over the last decade but remains fragile. Prospective, observational cohort studies have proved useful in even hard to reach areas, illustrated by data from district hospitals, including quality assurance of mesh inguinal hernia repair when supervision and supplies exist<sup>6</sup>. These granular data are more informative than aggregate procedure counts, yet the data infrastructure (spanning 3000 hospitals in 130 countries) is currently reliant on short-term funding. Without long-term support, this unique data network risks being lost through funding loss, pandemic shock, or war dominance.



Quality of surgery remains an unsolved and under-researched area. Surgical site infection after abdominal surgery is three times more frequent in low-income settings than in high-income settings<sup>6</sup>. Postoperative mortality rates remain unacceptably high, are higher in resource-limited hospitals, and randomised trials attempting to improve it are rare. The importance of this methodology was shown by a major international cohort study that addressed peri-operative SARS-CoV-2 infection and mortality at scale, drawing urgent attention to system resilience during the COVID pandemic<sup>7,8</sup>. Research funders that claim surgery is a cross-cutting enabler must now support multicentre pragmatic trials and robust implementation studies.

Expansion cannot proceed without accounting for climate and equity. Health systems generate about 4% of global greenhouse emissions and operating theatres contribute a quarter of that total<sup>9</sup>. Reusable textiles, low-flow anaesthesia, and solar power are no longer demonstration projects and require funding for responsible expansion.

Equity gaps remain, with women and patients in the poorest quintiles receiving the fewest elective operations, despite equal or greater need. National surgical plans should therefore report outcomes by sex, age, wealth, and rural residence, mirroring approaches in maternal health.

Workforce shortage will determine success or failure of these plans. The global deficit of surgeons, anaesthetists, and obstetricians exceeds one million providers<sup>8</sup>. Regional training bodies such as the Colleges of Surgery of East, Central, and Southern Africa now graduate nearly a thousand surgeons a year, with most remaining in the region and representing a sustainable model<sup>2</sup>.

Financing reform would address patient-level costs. Catastrophic expenditure pushes an estimated one in three households into financial hardship after surgery in low-income settings<sup>10</sup>. Affordable care packages need transparent fee schedules, insurance mechanisms, and social-protection schemes if utilisation is to rise once capacity exists. These may require innovative financial models as pressure on philanthropy, following sudden changes in global health funding, are extreme.

The new Health Policy article sets out an agenda for the next decade. First, measurement remains crucial, and should include procedure volume by urgency, thirty-day mortality, catastrophic expenditure, and carbon output. Second, hospital basics should be seen as critical building blocks for funding by governments; this includes reliable power, water, sterilisation, and resilient supply chains for mesh, antibiotics, blood, and anaesthetic drugs<sup>11</sup>. Third, high quality clinical data and cost models will present ministries with credible estimates of productivity gains. Fourth, investment in people will expand regional training pipelines and embed data competence within curricula.

The Health Policy paper shifts global surgery from aspiration towards accountability, and from standalone to integrated into complete health systems. It reminds clinicians, researchers, and policy leaders that numerical targets without political traction will not deliver care at scale. Ten years after Global Surgery 2030, the field must move from counting gaps to closing them.

**Funding and completing interests:** There was no specific funding for this article. The authors declare no competing interests.

**Data sharing:** There is no data to share.

**GAIT statement<sup>12</sup> for Generative AI use:** Generative AI was used for language editing in this manuscript. No content generation, data analysis, or substantive rewriting was performed. The authors take full responsibility for the accuracy and integrity of the work.

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