

Strengthening health systems through surgery

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Surgeons must provide leadership in transforming health care across the Global South—by integrating surgery into the global health agenda and advocating for simple and cost-effective surgical procedures that support

overall health system strengthening.

Establishing [ambulance services](#), strengthening [primary care](#), and improving diagnosis pathways will ensure patients have access to [early diagnosis](#) and treatment, reducing overall health costs.

Surgeons can become influential system leaders by taking on challenges that cut across health systems. For example, surgeons can deliver change in [energy security](#), by supporting installation of on-site renewable energy generation.

Fragile energy supplies at hospitals in Low- and Middle-income Countries (LMIC) lead to avoidable patient harm, so secure energy initiatives would benefit all patients.

Experts from the University of Birmingham-led NIHR Global Health Research Unit on Global Surgery, set out the blueprint for change in an article which is [published in *The Lancet*](#).

Co-author Dr. Dmitri Nepogodiev, from the University of Birmingham, commented, "Surgeons can lead positive health care change that benefits patients across the Global South. By proactively reaching out to [local communities](#) and policymakers, surgeons can shift the common but mistaken perception of [surgery](#) as a drain on resources to a vision of surgery as a powerful engine for strengthening both health systems and wider civil society."

The NIHR Global Health Research Unit on Global Surgery is already taking the first steps along the road to sustainable health care—welcoming surgeons and academics from around the world to the University of Birmingham last year to consider research to achieve net zero emissions in operating theaters.

Co-author Mr. Aneel Bhangu, Professor of Global Surgery, NIHR Lead Clinician Scientist in the NIHR Global Surgery Unit at the University of Birmingham, commented: "Operating theaters, safe maternity care, vaccine cold chains, and laboratory and radiology diagnostics all depend on a constant electricity supply—not always achievable in the Global South.

"Secure, on-site energy generation would have a substantial benefit for all patients, while installing [renewable energy](#) would also accelerate health care sector decarbonization, even as provision is scaled up to meet need. Surgery is the most energy-intensive activity in the hospital, making surgeons well placed to take the lead in creating energy secure, low-carbon surgical systems."

Last year's ground-breaking 'green surgery' event at Birmingham built on earlier research success in this field, including the first documented 'net zero' operation in the NHS—patient discharged safely and recovering well from a keyhole procedure to remove a bowel cancer.

Performed at Solihull Hospital in 2022, this operation saw University of Birmingham experts working with a surgical team at University Hospitals Birmingham NHS Foundation Trust to complete the operation.

The operation introduced several changes to normal practice such as: using reusable gowns, drapes, and scrub caps; minimizing electricity use; and giving medications through the veins for general anesthesia rather than using anesthetic gases, which have a strong greenhouse effect.

More information: Dmitri Nepogodiev et al, Strengthening health systems through surgery, *The Lancet* (2024). [DOI: 10.1016/S0140-6736\(24\)01031-6](https://doi.org/10.1016/S0140-6736(24)01031-6)

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