

# Operational research to improve health systems in the Global South

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**The Structured Operational Research Training Initiative has increased operational research capacities in Sierra Leone, and provides a model for Global North–Global South and Global South–Global South regional partnerships for health system planning and performance.**

Clinical research has a crucial role in strengthening healthcare systems and delivering high-quality healthcare services<sup>1</sup>. Over the past decade, many research efforts have focused primarily on generating evidence through an academic lens, often with little intention to enhance public programming or health system development. For instance, most undergraduate and postgraduate programmes include research as a key component for earning a degree, which prompts academic institutions and researchers to emphasize dissertation writing and manuscript publication.

Furthermore, pharmaceutical companies, along with academic institutions and research consortia, have been investing in the evaluation of new products, including drugs, vaccines and devices, through clinical trials to improve population health<sup>2,3</sup>. Although these approaches are commendable, there is a pressing need for additional types of research. Such research should aim to better understand health system programming, its implementation, and the successes and challenges that affect the performance of health systems. One promising avenue for this is operational research<sup>4</sup>.

Operational research enhances health system planning and performance. It is a unique research method that concentrates on programme objectives and challenges to formulate research questions that are then answered using suitable study designs<sup>4</sup>. For example, Sierra Leone's national malaria-control programme aims to ensure effective case management of all malaria cases admitted at health facilities. However, based on a review of facility data, there has been an increase in mortality among severe malaria cases in children under five admitted to selected healthcare facilities. Consequently, a research question might be: 'Is the malaria treatment guideline being followed effectively in the management of severe malaria among under-five children admitted to healthcare facilities?' From this question, several objectives can be developed to guide operational research. This illustrates the difference between operational research and other types of clinical research. Although operational research is essential for improving programme performance and service delivery, many countries with numerous health system challenges – including Sierra Leone – lack sufficient operational research capacity. To address this gap, the TDR

special programme on Structured Operational Research Training Initiative (SORT IT) was created to build operational research capacity in low- and middle-income countries, fostering collaboration between the Global South and the Global North<sup>5</sup>.

The SORT IT model is unique as it can be used during routine health service programming and outbreak preparedness and response. The overarching goal of the SORT IT model is to make countries data-rich, information-rich and action-rich through evidence generation for informed decision-making to improve public health<sup>5</sup>. Before the implementation of the SORT IT model in Sierra Leone, there had never been any formal training on operational research for frontline healthcare workers, programme staff, monitoring and evaluation officers, or researchers. Therefore, assessing the benefit of the Global South and Global North partnership to improve health system performance in Sierra Leone through operational research is critical.

This Comment highlights the benefits of global research partnerships in improving human resource capacities, health system performance and the quality of health services delivery, and in establishing a sustainable research model.

## The SORT IT cycle

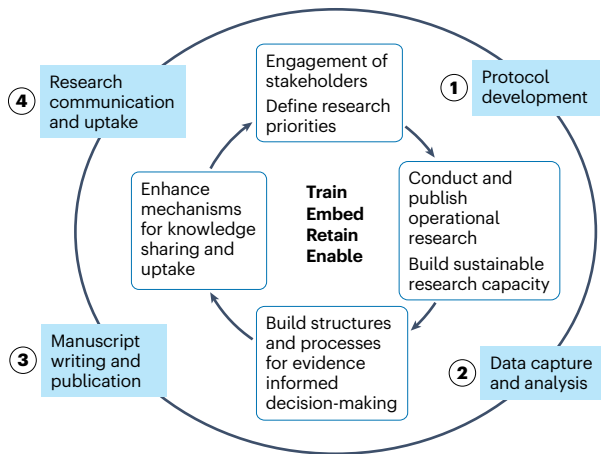
For each SORT IT cycle, there is an engagement meeting between TDR, the relevant ministry of health, the WHO country office and other development partners to identify research priorities. After the approval of the research priority by the in-country stakeholders, a call is sent out with a clear description of the course brief and the eligibility requirements.

Research participants can be nominated or complete an expression of interest based on the call. All completed nominations by ministries, departments and agencies, or expressions of interest, are reviewed by a team of experts at the TDR office in Geneva in concordance with the in-country SORT IT team. This ensures an objective process of selecting the best-fit candidates for training. Selected participants are duly informed of their selection with clear course details, proposed timetable and full sponsorship for the completion of the training.

The SORT IT model of training is a hands-on training and mentorship by pairing research participants with global SORT IT mentors with extensive experience in operational research. It is a 9–12-month research cycle that comprises 4 training modules and 5 clear milestones: protocol development, data management, manuscript writing and knowledge translation (Fig. 1).

Each of these modules lasts between 5 and 7 days using a residential approach to ensure full participation from researchers and mentors. Before the manuscript-writing module, researchers will present the results of the research work to programme staff for validation and

The SORT IT training cycle and modules



**Fig. 1 | The SORT IT cycle.** Different modules of the SORT IT cycle include protocol development, data management and manuscript writing, and conclude with the creation of communication materials such as technical presentations, policy briefs and elevator pitches.

improvement of programme performance. A unique component of the SORT IT module of training is the knowledge translation module, in which researchers are trained to communicate their research findings to different audiences using various communication tools. These include a plain-language English summary, a 10-min technical presentation, and 3-min lighting presentation that can be used at conferences, and a 1-min elevator pitch. At the final day of module 4, senior government officials, health partners and SORT IT alumni are invited to a virtual dissemination session in which the SORT IT researchers deliver their 3-min lightning presentation. Over 20 institutions from 10 countries were mobilized to support these modules in Sierra Leone.

The Global South and Global North partnership has led to tangible operational research outcomes, including capacity building, publications and dissemination, and policy and practice impact.

### Capacity building

Since 2012, a total of 50 Sierra Leonean scientists have gained skills in operational research and evidence communication through SORT IT. About 60% of trainees completed new research studies after completing SORT IT, and about 40% transitioned to become mentors in the subsequent SORT IT courses. As part of Global South–Global South collaboration, Sierra Leonean SORT IT mentors have also facilitated multicountry SORT IT training in Ghana, Kenya and Nepal on global public health threats, including antimicrobial resistance and emerging infectious diseases<sup>6</sup>.

### Research publications and dissemination

In total, 46 research articles have been published by SORT IT alumni on antimicrobial resistance, infection prevention and control, infectious diseases of poverty and emergency preparedness and response, in open-access peer-reviewed journals. SORT IT alumni in Sierra Leone have published over 20 individual research articles since the completion of their training. These publications have increased the global and national body of evidence on global public health concerns. Furthermore, this research has provided evidence-based information for the

## BOX 1

### Recommendations for operational research

- Governments, ministries, departments and development partners should integrate operational research into the planning and implementation of all public health initiatives to ensure evidence-based decision making.
- Research institutions in the Global North and Global South should establish equitable partnerships for conducting operational research on global public health threats such as antimicrobial resistance, infectious disease outbreaks and non-communicable diseases.
- Research funding agencies and donors should increase the number of funding calls dedicated to operational research to stimulate interest and build research capacity in the Global South.
- Academic institutions should develop and integrate operational research courses at pre-service, in-service and postgraduate levels to train a critical mass of experts in the Global South.

development of national policies and strategies to improve the health and wellbeing of Sierra Leoneans.

To increase the uptake of research findings, SORT IT researchers have presented their research work to senior officials at ministries, departments and agencies through dissemination meetings and distribution of the SORT IT compendium. The research participants presented over 30 lightning presentations at the end of module 4 to policymakers and senior government officials. They also developed and distributed over 30 plain-language English summaries that have ensured better understanding of locally generated evidence and supported informed decision-making. SORT IT researchers have presented their research work to a wider research audience in national and international conferences, including the European and Developing Countries Partnership on Clinical Trials 2025 forum<sup>7</sup>.

### Policy and practice impact and sustainability

Over 80% of all published papers have had an impact on policy and practice, as evidenced by the availability of policies and discussions with healthcare workers. For example, following the conducting of several infection prevention and control studies, the national infection prevention and control programme developed a healthcare-associated-infection surveillance strategy. This strategy provides a roadmap for how healthcare-associated-infection surveillance activities should be completed in the country. Furthermore, based on the findings of a national point prevalence survey on antibiotic use in selected healthcare facilities in Sierra Leone, the national antimicrobial resistance programme developed an interest in the establishment of antimicrobial stewardship programmes in selected healthcare facilities in the country, which are presently being piloted.

The SORT IT capacity can be used beyond operational research confines. Some SORT IT alumni are first responders to public health

events, including fuel tanker explosions in Freetown, the COVID-19 pandemic, and the ongoing Mpox outbreak in Sierra Leone and Rwanda<sup>8,9</sup>. They assume leading positions as they are members of the incident management structure and drive both clinical and non-clinical initiatives, including the development of policies and strategies, training of healthcare workers, and surveillance and contact tracing efforts.

The SORT IT model of training is sustainable in low- and middle-income countries such as Sierra Leone. For example, a national research institute led by a SORT IT alumnus has implemented a Canadian government research grant on health system strengthening using the SORT IT model of training. Presently, with minimal technical support from the Global North, Sierra Leone is implementing a SORT IT training on health system strengthening to use global funds for HIV/AIDS, tuberculosis and malaria. Furthermore, there is buy-in by the senior management of the Sierra Leone's national public health agency to develop operational research skills among first responders through the pandemic fund implementation.

The SORT IT model is effective for galvanizing research collaboration and partnerships between the Global South and Global North (Box 1). This partnership-based initiative has enhanced operational research capacities among programme managers, researchers and frontline healthcare workers in Sierra Leone. It has also influenced policies and practices through the health system strengthening approach and needs to be applied more widely. It is an effective and sustainable research training model that can be implemented anywhere in the world.

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Published online: 29 January 2026

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## Acknowledgements

The authors thank the Global SORT IT partnership.

## Competing interests

The authors declare no competing interests.