OPERATIONAL RESEARCH:
A tool for making health programmes work better

OBJECTIVE: To explain what operational research is and how it can be used to improve health service delivery in real-world settings.
TARGET AUDIENCE: Frontline health workers, programme managers, and policymakers involved in healthcare delivery.

WHAT IS OPERATIONAL RESEARCH?

Operational research refers to the systematic investigation of real-world health system problems and finding practical solutions to improve health service delivery. In simple terms it is defined[1] as:

> *"Research into strategies, interventions, tools, or knowledge that can enhance the quality, coverage, effectiveness, or performance of the health system or programme in which the research is being conducted."*

Operational research is not confined to laboratories or tertiary care hospital settings - instead, it is conducted within real-world routine healthcare environments. It seeks to answer the question: *"How can we make existing health programmes work better?"*

Operational research explores issues like poor access, low service uptake, or inefficiencies in care delivery. Unlike routine monitoring, which tracks performance indicators, operational research digs deeper to understand why gaps exist and what can be done to close them from both service provider and service recipients' perspectives.
For example, if a health centre sees high dropout rates in patients on treatment, operational research might examine reasons like medication stock-outs, long wait times, or poor patient counselling.

WHO CAN CONDUCT OPERATIONAL RESEARCH?

Anyone with a basic understanding of research methods and on-the-ground programme experience can do operational research. You don't need to be a scientist. Health staff, nurses, programme managers, and community health workers - all can initiate and conduct operational research. Initiatives like the SORT IT (Structured Operational Research and Training Initiative)[2] have trained many front-line staff who went on to publish impactful studies and influence policy changes.

[1] Zachariah R, Harries AD, Ishikawa N, et al. Operational research in low-income countries: what, why, and how? Lancet Infect Dis. 2009 Nov;9(11):711-7. doi: 10.1016/S1473-3099(09)70229-4.PMID: 19850229.
[2] SORT IT operational research and training

WHY IS OPERATIONAL RESEARCH IMPORTANT?

Front-line health workers (doctors, nurses, programme managers, and community health workers) are closest to the communities and often encounter implementation problems first-hand. However, without structured evidence, these challenges may go unaddressed.

Operational research provides the means to:

- Identify gaps and challenges in service delivery
- Improve health outcomes by finding better ways to implement known interventions or by finding new interventions
- Empower health workers to be part of the solution by using data and evidence for decision-making

There are many examples of operational research leading to policy and practice change.
For example, in India and Myanmar, operational research led to national policy changes for routine HIV testing not only among TB patients but also on all those with presumptive TB[3,4].
In Malawi, research on importance of preventive antibiotics in HIV-TB co-management in the era of limited access to HIV treatment resulted in improved treatment success and reduced deaths[5].
In Uganda, operational research on household TB contact investigation - with home visits, chest x-rays, and short-course preventive treatment - achieved high case detection and completion rates, offering a scalable model for TB prevention[6].

HOW TO CONDUCT OPERATIONAL RESEARCH?
A step-by-step guide

1. **Identify a problem:** look for gaps or bottlenecks in your daily work - e.g., diagnostic tools not being properly applied, delays in diagnosis, patients not completing treatment, poor record-keeping, etc.

2. **Define a research question:** by using the PICOT format:

Population:	Who is affected? **(P)**
Intervention:	What is happening or what intervention is in place? **(I)**
Control:	Is there a comparison group or status? **(C)**
Outcome:	What outcome are you looking at? **(O)**
Time:	What is the time frame for measuring the outcome? **(T)**

Example: Among 'patients in your health centre' (P), does providing 'treatment counselling at diagnosis' (I), compared to no counselling (C), reduce 'lost to follow-up rates' (O) at six months (T)?

3. **Identify and secure funding**

4. **Design the study**, **draft a protocol and obtain ethics approval:** choose the right type of study (e.g., descriptive, cross-sectional, cohort). Focus on what fits your question, your capacity, and the resources available. Developing a research study protocol and securing ethics approval should not be seen as hurdles but essential steps that uphold research quality and community trust while ensuring the research leads to meaningful, actionable change. Involve your facility team and co-workers as co-investigators so that the operational research study is seen as a collaborative effort.

5. **Collect data:** use existing programme records or develop simple forms or questionnaires. Ensure patient confidentiality and data accuracy.

6. **Analyse and interpret data:** like differences in proportions, means, and trends. Look for patterns or differences that inform possible solutions.

7. **Report and share findings:** a simple presentation or report shared with supervisors, health officers, or policy makers, communities can lead to change. Operational research is most effective when findings are communicated in ways that decision-makers understand. Also, aim for a scientific publication to inform policy and practice-change beyond your study settings.

8. **Implement changes and follow up:** pilot the solution you recommend and monitor its impact. Document changes and share your experience again – this is how operational research leads to a continuous improvement cycle.

3 Kumar AM, Gupta D, Kumar A, et al. HIV Testing among Patients with Presumptive Tuberculosis: How Do We Implement in a Routine Programmatic Setting? Results of a Large Operational Research from India. PLoS One. 2016 May 31;11(5):e0156487. doi: 10.1371/journal.pone.0156487. PMID: 27244055; PMCID: PMC4887014.
4 Kyaw KWY, Kyaw NTT, Kyi MS, et al. HIV testing uptake and HIV positivity among presumptive tuberculosis patients in Mandalay, Myanmar, 2014-2017. PLoS One. 2020 Jun 18;15(6):e0234429. doi: 10.1371/journal.pone.0234429. PMID: 32555731; PMCID: PMC7302489.
5 Harries AD, Zachariah R, Chimzizi R, et al. Operational research in Malawi: making a difference with cotrimoxazole preventive therapy in patients with tuberculosis and HIV. BMC Public Health. 2011 Jul 27;11:593. doi: 10.1186/1471-2458-11-593. PMID: 21794154; PMCID: PMC3161891.
6 Mudoola D, Thekkur P, Nsonga J, Mande R, Berger SD, Turyahabwe S, Muchuro S, Namuwenge P, Sekadde M, Lukoye D, Luzze H, Dongo JP, Date A, Dlodlo RA, Ferroussier-Davis O, Charles M. Case Finding Among and Comprehensive Management of Household Contacts of Persons with Pulmonary Tuberculosis: a Pilot Project - Uganda, 2023-2024. MMWR Morb Mortal Wkly Rep. 2025 Mar 20;74(9):145-151. doi: 10.15585/mmwr.mm7409a1. PMID: 40111922; PMCID: PMC11925267.
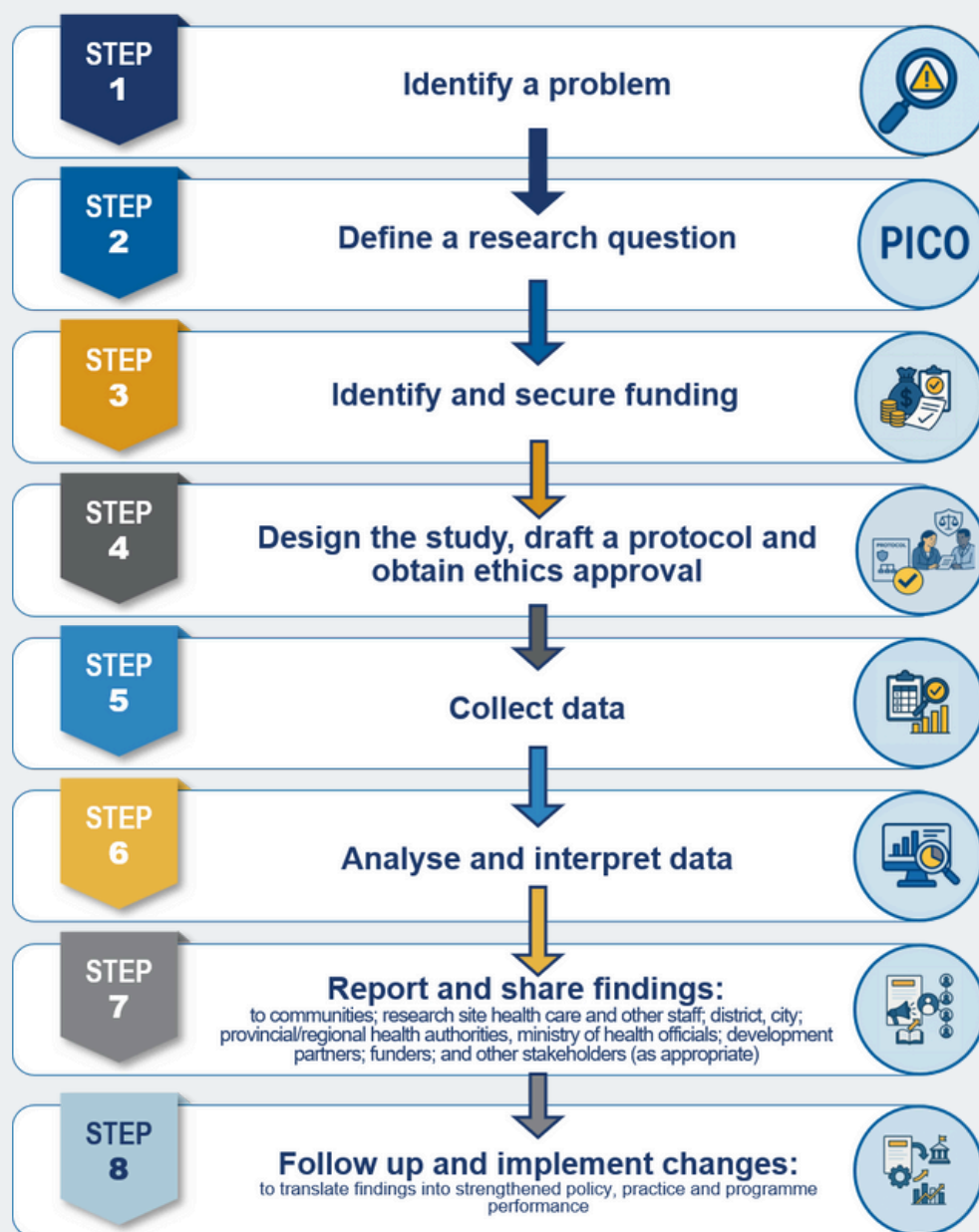
Flow chart 1.
Steps from research question to translation of findings into strengthened policy and practice[7].

STEP 1 — Identify a problem

STEP 2 — Define a research question — PICO

STEP 3 — Identify and secure funding

STEP 4 — Design the study, draft a protocol and obtain ethics approval

STEP 5 — Collect data

STEP 6 — Analyse and interpret data

STEP 7 — Report and share findings: to communities; research site health care and other staff; district, city; provincial/regional health authorities, ministry of health officials; development partners; funders; and other stakeholders (as appropriate)

STEP 8 — Follow up and implement changes: to translate findings into strengthened policy, practice and programme performance

TO CONCLUDE:

- Operational research is a powerful and accessible tool.
- You don't need a big project—small, well-designed studies can lead to real change.
- With operational research, anyone can become a changemaker.

WANT TO LEARN MORE? *Click on the links below*

- Contact The Union's Centre for Operational Research by emailing cor@theunion.org

- The Union's comprehensive operational research guide:
  Operational Research to Improve Health Services: A practical guide for protocol development, data capture and analysis, scientific writing, publishing and translation of evidence to policy and practice[8]

- *SORT IT - Structured Operational Research and Training IniTiative's* three modular course video resources

[7] Dlodlo RA, Brigden G, Heldal E, et al. Management of Tuberculosis: a Guide to Essential Practice. Paris, France: International Union Against Tuberculosis and Lung Disease, 2019

[8] Harries AD, Kumar AMV, Nair D, et al. Operational Research to Improve Health Services: A practical guide for protocol development, data capture and analysis, scientific writing, publishing and translation of evidence to policy and practice. Second Edition. Paris, France: International Union Against Tuberculosis and Lung Disease, 2024.