

ResearchWaste.info: Raising Awareness of Avoidable Waste in Health Research

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Methods – Study design

Overall goal: To develop and pilot-test an online interactive tool for evaluating research waste in health research.

Methodology: A sequential mixed-methods design (3 studies). The COM-B model of behaviour change, extended with the Theoretical Domains Framework and the Behaviour Change Wheel, underpins the data interoperability between studies.

Patient involvement: Co-led by a patient partner. The meaningfulness of engagement is self-assessed using the Patient Engagement In Research Scale (PEIRS-22).

- Aim 1. Scoping review:**
Systematically map research waste studies and tools to identify methodological gaps.
- Aim 2. Key informant interviews & focus groups:**
Collect input on research waste assessment needs from researchers and knowledge users.
- Aim 3. Tool development & pilot testing:**
Integrate findings from Aims 1–2 to develop a research waste decision tree and guide, and test the tool.

Background

What is (health) research waste? Working definition:

- Research found **unhelpful** by other researchers or knowledge users (i.e., any individuals who are “likely to be able to use the knowledge generated through research in order to make informed decisions”) – exclusive of outright misconduct (falsification, fabrication, plagiarism).
- Aspects of research waste – MINUS (Rosengaard et al., 2024): **M**ethodological, **I**nvisible, **N**egligible, **U**nderreported, **S**tructural.
- Ethical principles for medical research involving human participants mandate “a scientifically sound and rigorous design and execution that are likely [to] **avoid research waste**” (Declaration of Helsinki, 2024)

Estimate of research waste:

- 85% of all health research** amounts to avoidable waste – claims a commentary by Chalmers & Glasziou (2009), widely cited (~2,700 citations on Google Scholar).
- Calculation (Glasziou & Chalmers, 2016): ~50% unreported + >25% poorly reported + >12.5% serious avoidable flaws.

References: Chalmers I, Glasziou P. *Lancet*. 2009;374:86–9. | Glasziou P, Chalmers I. *BMJ*. 2016. <https://perma.cc/U648-VDFX> | World Medical Association Declaration of Helsinki. *JAMA*. 2025. doi:10.1001/jama.2024.21972 | Rosengaard LO et al. *J Evid Based Med*. 2024. doi:10.1111/jebm.12616 | Rosengaard LO et al. *PeerJ*. 2024. doi:10.7717/peerj.18466 | Research: increasing value, reducing waste. *Lancet*. 2014. <https://www.thelancet.com/series/research> | Tricco AC et al. *FACETS*. 2022. doi:10.1139/facets-2021-0127 | **Examples of similar tools:** INQUIRE (content): <https://doi.org/10.1371/journal.pmed.1002580> | Right Review (design): <https://whatreviewisrightforyou.knowledgetranslation.net>

Methods – Performed to date (March 28, 2025)



Rapid Scoping Review

721 records
442 screened
6 abstracted



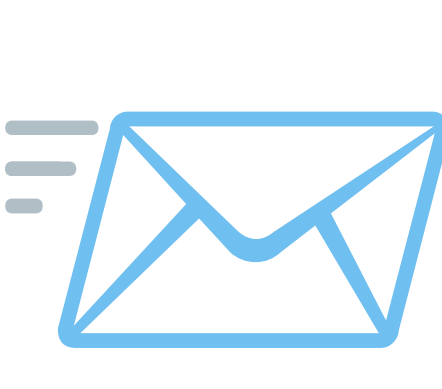
Living Search

4163 articles found
2–3 new/week



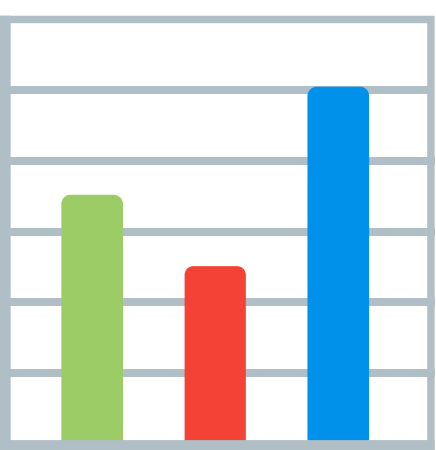
Community Engagement

356 website visits
5927 LinkedIn views



Newsletters

Featured in:
SPOR Evidence Alliance
Centre for Global Health



Top Sectors

Healthcare (23%)
Research (16%)
Education (12%)



Top Locations

Toronto, Ontario (20%)
Copenhagen, Denmark (8%)
Vancouver, British Columbia (7%)



Face-to-face Talks

60 individuals: trainees,
faculty, clinicians, patient and
public partners, admin staff

Results – Evidence gap (preliminary findings)

Limitations of current research waste assessment methods:



Are variable
across studies



Are poorly reported
in meta-research



Cover limited aspects
of research waste



Lack comprehensive,
user-friendly tools



Particularly problematic for
patient and public partners

Methods – Next steps



Aim 1: Scoping Review

Multiple databases + grey literature
Two reviewers for screening and abstraction
Synthesis – evidence and gaps map
JBI Manual conduct + PRISMA-ScR reporting



Aim 2: Interviews & Focus Groups

Semi-structured sessions re: Aim 1 findings
SPOR Evidence Alliance recruitment – pan-Canadian
10+ participants until sufficient information power
Max-variation sampling by user group & demographics
Framework method + COREQ reporting



Aim 3: Tool Development & Pilot Testing

Integrate Aims 1–2 findings
Decision tree + web application
Test on 730+ SPOR knowledge products
System Usability Scale + GRAMMS reporting

Expected impact

An evidence-informed tool to “run” health research protocols and reports that informs decision-makers about the research waste potential before, during, and after conducting a study.

Target users:

- Patient partners and the public.
- Researchers: training and peer review.
- Academic reviewers: funding and editorial.
- Healthcare professionals.
- Policy-makers.

Features:

- A free online tool (interactive app and printer-friendly PDF).
- Aims to incorporate all published research-on-research-waste.
- Reproducible methods – can be updated/customized.
- Multiple languages: English, French, Chinese, and others.

Link to supplementary data:

researchwaste.info