



Developing an evidence-led Essential Research Skills Training Curriculum

Implementation Workshop - Briefing paper

**10 Feb 2021
13.00-14.30 GMT**

This briefing paper provides the key background information for participants attending the Implementation Workshop.

The aim of the Essential Research Skills Curriculum study is to identify what constitutes the minimum set of skills, knowledge and key principles that would enable those with limited or no previous experience, to undertake high-quality research for health.

This workshop is a joint collaboration between the World Health Organization's Special Programme for Research and Training in Tropical Diseases (TDR) and The Global Health Network (TGHN). In this concluding step, we will focus on understanding how best to implement the Essential Research Skills Training Curriculum.

The proposed Essential Skills Training Curriculum has been developed following a three-stage methodology:

Stage 1: Gap analysis

We conducted a comprehensive review of the responses from a series of research training needs surveys, session evaluations from research training workshops, and feedback submitted on completion of eLearning, collected by The Global Health Network from 2017 to 2019. We analysed the responses of 7167 participants from across 153 countries. This analysis provided us with a range of research skills topics and subject areas that generated a core list of 98 research training themes.

Stage 2: Two-round e-Delphi

The Delphi is a consensus building method which is used to arrive at a group opinion or decision by surveying a panel of experts. The Delphi panel for this study is formed of both experts and stakeholders in the field of research for health and research for health training, with heterogeneous expertise and from diverse geographical regions. We sought to include views of researchers, research participants, research training facilitators, members of research advisory committees, research funders, authors of peer-reviewed research training papers, authors of research training books/programmes, journal editors, research policy makers and regulators.

Delphi Round 1

The Delphi Round 1 survey offered an opportunity for panellists to indicate i) which of the 98 themes derived from the stage 1 Gap analysis they considered essential for inclusion in the Essential Research Skills Training Curriculum, *and* ii) to suggest any themes that may be missing or omitted.

The themes presented were scored by the panel on the basis of two classifications: [a] relevance (should this topic / theme be included?) and [b] clarity of each statement (is it clear what the category or theme reflected?)

There were 254 members on the Delphi panel for Round 1. The panel reached consensus on 43 listed themes to be included in the Essential Research Skills Training Curriculum. No consensus was reached for any theme to be outrightly *excluded* from the proposed framework.

The remaining 55 themes were re-evaluated in Round 2 (including 8 themes indicated as *unclear* in Round 1) and alongside 10 *new* themes generated by panellists in Round 1.

Delphi Round 2

The Delphi Round 2 survey re-evaluated the remaining 55 themes including 8 themes indicated as *unclear* in the first round and alongside the 10 *new* themes generated by panellists in Round 1.

For the purposes of Round 2, themes were scored using a nominal scale [yes/no] for both classifications; relevance and clarity. There were a total of 222 panellists participating in Round 2.

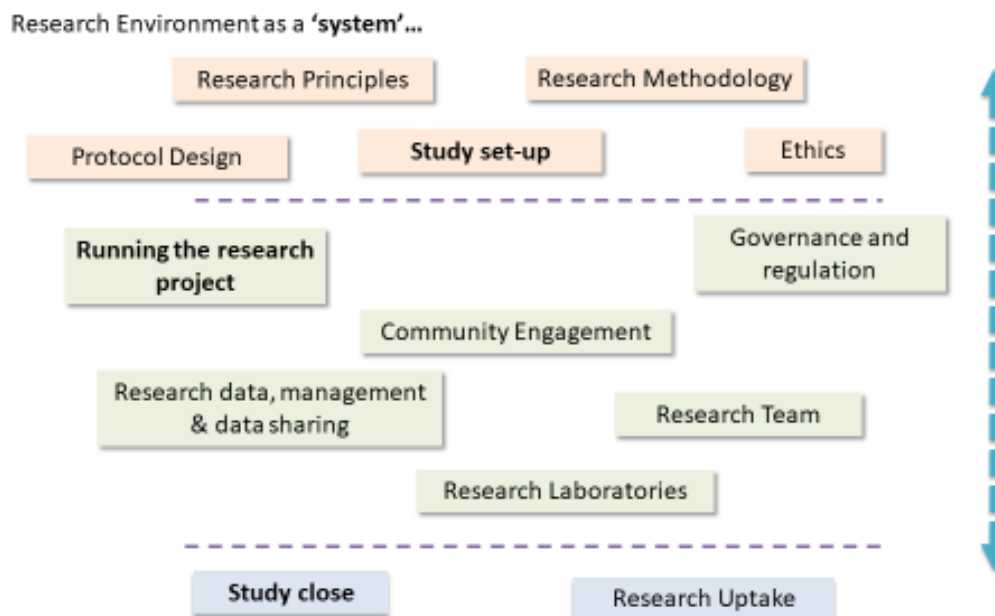
At the close of the 2-round e-Delphi, a final list of 108 themes were generated for inclusion in the curriculum.

The research team grouped the themes into **13** 'parent modules' (see framework below and Appendix I).

Mapping the themes

Following the Delphi study, the research team developed a curriculum framework by grouping the 108 themes identified by the panellists. This presented the structure of the curriculum by providing suggested 'parent modules' and the relevant themes generated and included to inform each module. See Appendix I. These theme groupings were initially presented and evaluated at a Stakeholder Review Workshop hosted in December 2020.

The proposed framework:



Stage 3: Stakeholder Review Workshop

In December 2020 we conducted a *Stakeholder Review Workshop*. This session brought together a diverse group of stakeholders from across the globe to consider the implications and applicability of the proposed Essential Research Skills training Curriculum.

The aim of this workshop was to consider the results of the study, to:

- i) review the suitability of the theme groupings as an accurate reflection of the content, and
- ii) to evaluate the applicability of the proposed Essential Research Skills Training Curriculum findings to the global research community

The final report of the workshop will be uploaded in the coming days to the [study webpage](#).

Further reference material and supporting information are available here:

[Essential Research Skills Training Curriculum webpage](#)

[Essential Research Skills Training Curriculum - Delphi survey round 1 report](#)

[Essential Research Skills Training Curriculum - Delphi survey round 2 report](#)

Implementation Workshop

We now wish to use this concluding step to draw on the findings and contributions from across the study to focus on understanding how best to implement the Essential Research Skills Training Curriculum.

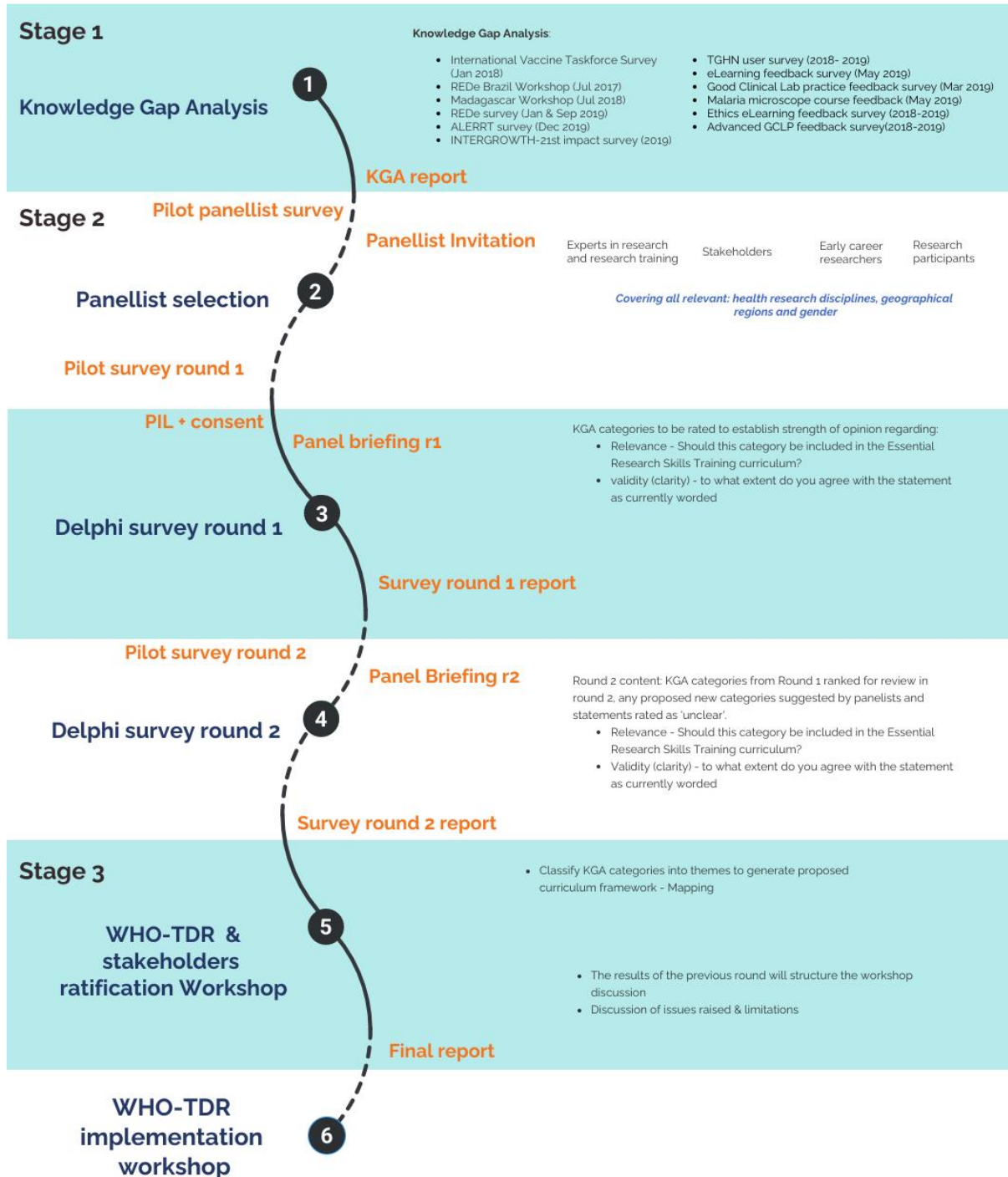
AGENDA

The programme for the session is as follows:

	Wednesday 10 February 2021 (13.00-14:30 hrs GMT)
Welcome TDR and The Global Health Network	Aim and Objectives
Examining the study process and results	Developing an evidence-led Essential Research Skills Training Curriculum: Overview of Study Methodology Q&A
Polling & Discussion	The aim of this workshop will focus on understanding how best to implement the Essential Research Skills Training Curriculum: <ul style="list-style-type: none"> • gathering the expectations from potential users of what this training should provide • understanding local contexts, trying to identify barriers and solutions, and • understanding what is valued about research training <p><u>Discussion section guided by TGHN</u></p>
Reflection and wrap up	TDR and The Global Health Network

Process for developing an evidence-led Essential Research Skills Training Curriculum

Delphi Study



Essential Research Skills Training Curriculum



Appendix I - The proposed framework with the relevant themes generated and included to inform each module:

The percentages indicate the level of consensus reached by the Delphi panel to include these listed themes in the curriculum, and the colour coding applies a level of recommendation. The levels are as follows:

- Level of consensus achieved 100% - 75% = **Strong recommendation**
- Level of consensus achieved 74% - 65% = **Medium recommendation**
- Level of consensus achieved <65% = **Weak recommendation**



Research Principles	
Critical thinking in research	93%
Development of a research question.	91%
Concept of health research.	88%
Good Research practice.	88%
Identifying a research gap.	88%
Understanding the difference between health research and standard of care, audit, evaluation.	86%
Critical appraisal of a research paper	85%
Legal issues in research	84%
How to form a research agenda.	81%
Research governance and regulations	
Monitoring and evaluation	87%
Governance and regulation	83%
Quality assurance systems	65%
Quality management systems	60%
Audit.	59%
Medicines Supply and Regulations	54%

Research Methodology	
Qualitative data collection methods.	93%
Quantitative data collection methods.	93%
Selection of control groups for comparison purposes.	92%
Quantitative sampling methods.	91%
Quantitative methodologies.	90%
Qualitative sampling methods.	89%
Steps to conduct a literature review.	89%
Epidemiological studies.	87%
Clinical trials.	87%
Qualitative methodologies.	86%
Experimental research.	85%
Qualitative analysis.	85%
Implementation research.	82%
Mixed Methods research.	76%
Research designs for outbreaks	75%
Methodology Research (research on research).	74%
Health Policy and Systems Research.	73%
How to search for secondary datasets in different databases.	70%
Social sciences and anthropological studies.	69%
Meta-analysis.	67%
Health economics and economic evaluations.	54%
Operational research.	52%



Protocol design	
Identifying research participants and selection criteria	94%
Definition and methods of randomization	89%
Writing a research protocol	88%
Calculation of participant sample size and sample power	88%
Writing a study budget	85%

Study set up	
Data collection tools (e.g. designing surveys and CRF's).	95%
Study set-up	92%
Writing a grant application and/or grant proposal	87%
Storage of research materials	81%
Development of Standard Operating Procedures (SOPs)	81%
How to set up study training	75%
Identifying various funding agencies/sources	68%

Running the research project	
Study reporting procedures and practices	91%
Research Project management and planning.	88%
Pharmacovigilance principles and reporting adverse effects.	82%
Participant 'loss to follow-up'.	80%
Budget management.	79%
Research Time management.	79%
Contingency plans for research studies (in situations like pandemics, etc)	75%

Study close	
Study close (archiving data, sample storing, notification of closure processes).	87%
Best practices regarding referencing and plagiarism.	87%
Scientific writing for journal publications.	86%
Use of citation tools (i.e. Mendeley).	81%
Authorship in research	80%
Research registries	74%
Intellectual property rights	74%



Ethics	
Informed Consent and assent.	98%
Participant’s confidentiality and privacy.	98%
Ethical practices around data handling/management.	95%
Professional guidelines and codes of ethics which apply to the conduct of clinical research.	94%
Definition of vulnerable populations and ethics of working with these populations.	94%
Ethical issues related to biological samples.	91%
Ethical issues related to genetic procedures.	87%
Setting up an ethical review board or committee.	60%

Research data, management & data sharing	
Definition of data quality	92%
Statistics.	90%
Security issues during data collection and how to manage risk.	89%
Data management systems.	88%
Data presentation.	88%
Data sharing best practices and governance.	87%
Data analysis software (qualitative and quantitative).	85%
Principles of Big data analysis	70%
Mathematical Modelling.	50%

Community engagement	
Community engagement principles and activities.	84%
Good Participatory Practice (GPP).	80%
Participants’ retention strategies.	79%
Attrition bias and prevention methods.	79%
How to manage expectations of study communities.	76%



Research laboratories	
Good Clinical Laboratory Practice (GCLP).	79%
Laboratory safety practices.	71%
Laboratory biosafety and how to manage hazards.	71%
Laboratory quality best practices.	70%
Laboratory sample handling and storage.	66%
Laboratory standards and regulations.	66%
Specific laboratory techniques and equipment handling.	60%
Setting up a research laboratory.	55%
Laboratory management.	53%

Research Team	
Teamwork	86%
Developing effective research teams with named roles and responsibilities for team	86%
Building trust within a team	81%
Networking and how to create collaborations	80%
Building your career in research	78%
Leadership in research.	67%
Ability to communicate and meet with funders.	65%
Handling and negotiating with a range of stakeholders	63%
Influencing at institutional level to enable research.	58%
Leading and managing complex research groups.	57%

Research uptake - How to make a difference with your findings	
Communicating research	92%
How to translate research results into policy (policy formulation and reviews).	91%
How to translate research results into practice within healthcare settings.	85%
Research Indexing	56%



Our partners:

The following organisations have either funded core activities of The Global Health Network or have collaborated to gather this data.

