Chapter 4.10

Using logic models in research and evaluation of Health EDRM interventions

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Learning objectives

To understand the following about the use of logic models in Health EDRM:

- The importance of logic models for research and evaluation in Health EDRM.
- Methods for constructing and using a logic model to guide research and evaluation projects.

What is a logic model?

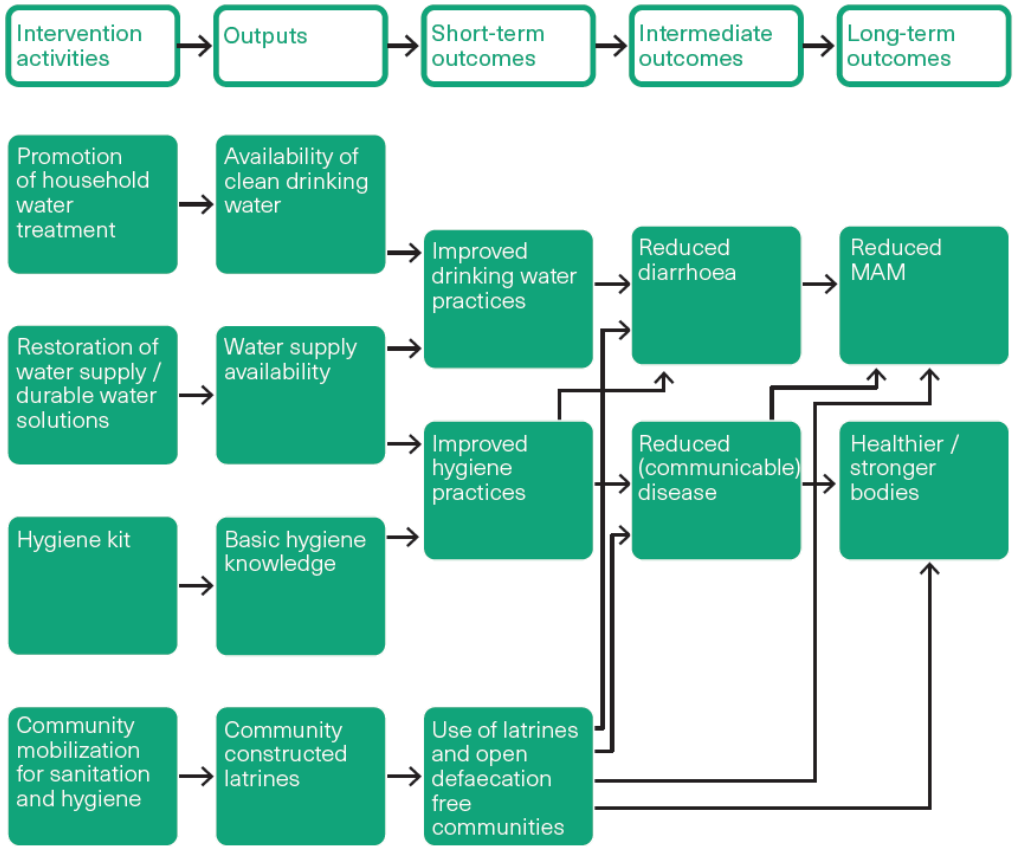
- Logic models are tools to help researchers and evaluators theorize.
- Outline chains of processes, activities, and events expected to occur during intervention.
- Used to develop chains of between inputs and outcomes.

Why use a logic model?

A logic model is used in many ways:

- Engagement, Design, Interpretation, Communication.
- Post-hoc questions….
  - Help understand whether observed impacts due to design or implementation.
  - Help understand how, where and among whom an intervention most likely to succeed..

Case study: Interpreting a logic model: *Community Resilience in face of natural disasters example Logic Model*



Based on a logic model developed by Avdeenko and Frölich (2019).

What's contained within a logic model?

A logic model includes:

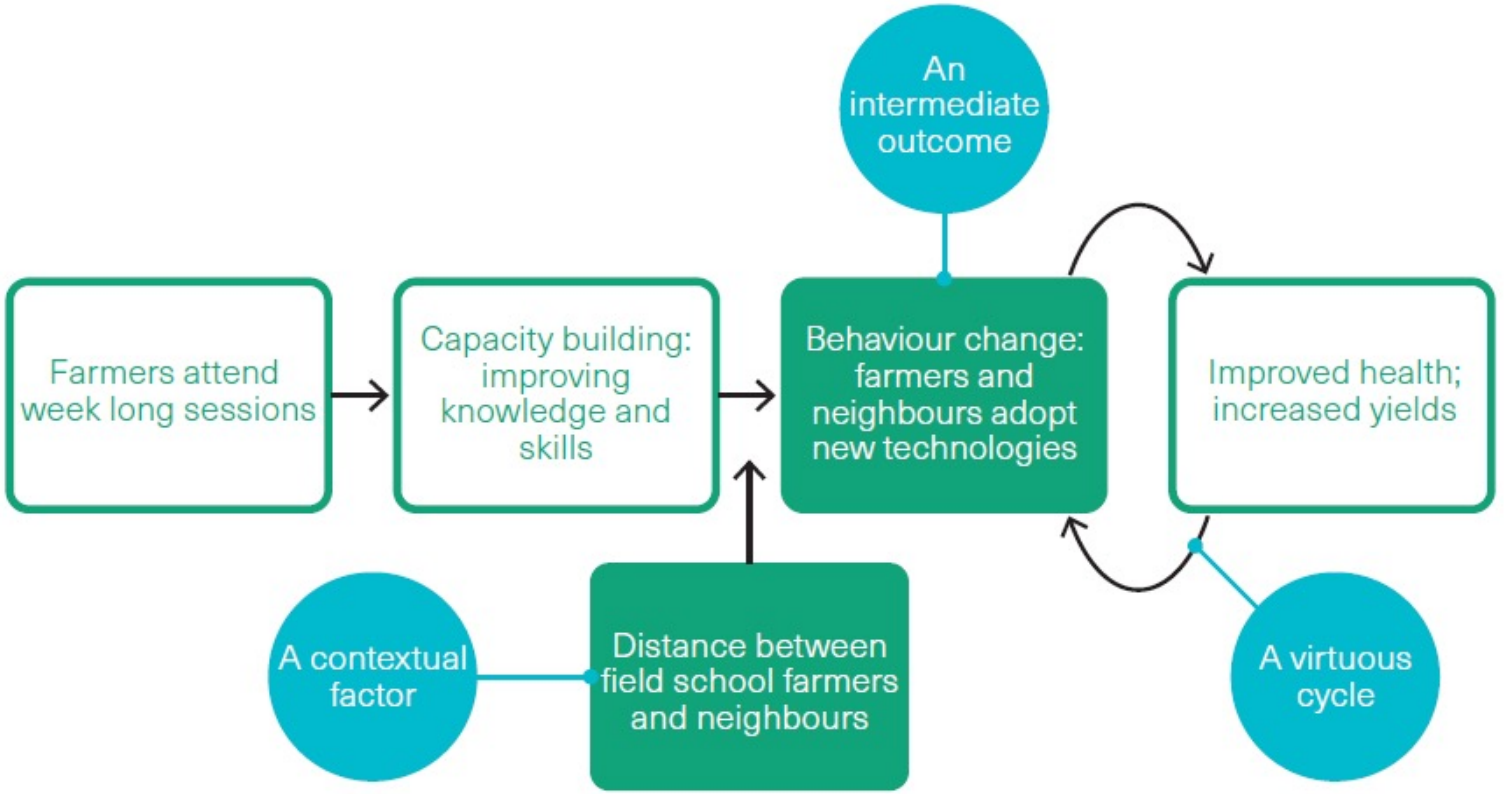
- The outcomes or the change that the intervention is trying to bring about.
- Indicators of implementation that show what was meant to be delivered.
- Mechanisms that show how what was being delivered as part of the intervention leads to a change in the outcome.
- Characteristics of the context in which the intervention takes place.

How to put together a logic model?

First stage – STOP! ….and check…

- Involve stakeholders
- Identify purpose or goal
- Work backwards from the distal outcomes
  - Building chains of if-then statements
- Mechanisms and Context
- Iterate!

Case study: Representing more complex relationship in a Logic Model: *Farmer Fields School Example Logic Model*



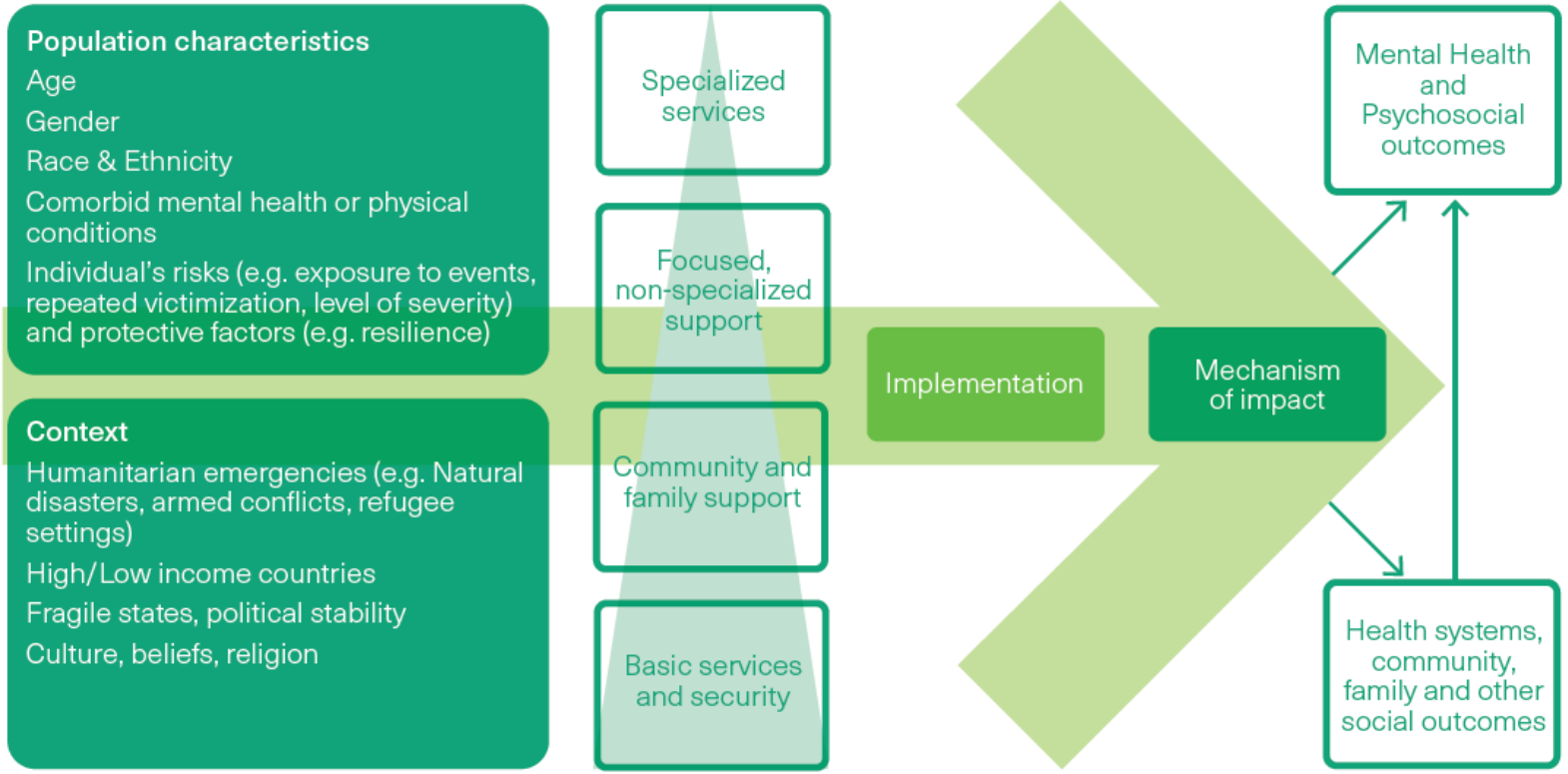
Based on a logic model developed by Waddington and White (2014).

Making a logic model work for you!

Different types of logic model distinguished by…

- **Interactivity/Iteration**
  - Static vs Staged vs Iterative
- **Scope and Question**
  - Process ("Do I need granular theorizing about complexity within intervention") versus System-based ("Do I need to know how the intervention interacts with the system?").

Case study: Representing more complex relationship in a Logic Model: *Mental Health and Psychosocial Support Interventions Logic Model*



Based on a logic model developed by Bangpan et al. (2017).

Removing uncertainty by theorizing the contents of the 'black box'

- Using a logic model provides a framework for understanding how an intervention channels an effect between the inputs and outcomes.
- Theorizing helps to remove uncertainty.
- Test the assumptions, demonstrate impact **and learn** (Vogel 2012).

Key messages (1)

- Logic models provide a useful basis for thinking conceptually about how an intervention should 'work' to change outcomes. They are a graphical representation of the stages linking intervention inputs and outputs, outcomes, and impacts.
- Logic models can be used to reflect assumptions about contexts and to illustrate more complex relationships.

Key messages (2)

- There are a number of steps to follow when developing a logic model, but perhaps one of the most important elements of good practice is that logic models should be developed with the input of stakeholders to challenge some of the (potentially erroneous) assumptions made by the research team.

Further readings (1)

Birnbaum ML, Daily EK, O'Rourke AP, Kushner J. Research and evaluations of the health aspects of disasters, part VI: interventional research and the Disaster Logic Model. Prehospital and Disaster Medicine. 2016: 31(2):181-94.

In this report, the authors outline interventional research and the disaster logic model (DLM).

Rohwer A, Booth A, Pfadenhauer L, Brereton L, Gerhardus A, Mozygemba K, et al. Guidance on the use of logic models in health technology assessments of complex interventions. 2016 https://eprints.lincoln.ac.uk/id/eprint/26371/ (accessed 22 February 2022).

In this guidance document, the authors summarize current practices on the use of logic models in health technology assessments (HTAs) and systematic reviews (SRs) of complex interventions.

Further readings (2)

Kneale D, Thomas J, Harris K. Developing and Optimising the Use of Logic Models in Systematic Reviews: Exploring Practice and Good Practice in the Use of Programme Theory in Reviews. PLoS ONE. 2015: 10(11):e0142187.

In this short article, the authors review the use of logic models in systematic reviews and protocols.

Kneale D, Thomas J, Bangpan M, Shemilt I, Waddington H, Gough D. Causal chain analysis in systematic reviews of international development interventions. CEDIL Inaugural Papers. Centre of Excellence for Development Impact and Learning, London. 2018. https://cedilprogramme.org/wpcontent/uploads/2017/12/Inception-Paper-No-4.pdf (accessed 22 February 2022).

In this longform paper, the authors demonstrate how causal chain analysis can explain how interventions work.

Further readings (3)

Bangpan M, Chiumento A, Dickson K, Felix L. The impact of mental health and psychosocial support interventions on people affected by humanitarian emergencies: a systematic review. In Humanitarian Evidence Programme. Oxfam GB, Oxford. 2017: https://policypractice.oxfam.org.uk/publications/the-impact-of-mental-health-and-psychosocialsupportinterventions-on-people-af-620214 (accessed 6 February 2020).

In this systematic review, the authors synthesize research on mental health and psychosocial support (MHPSS) programmes for affected communities in low- and middle-income countries (LMICs).

Waddington H, White H. Farmer field schools: from agricultural extension to adult education. 3ie Systematic Review Summary 1. International Initiative for Impact Evaluation, London. 2014. https://www.3ieimpact.org/sites/default/files/2019-05/srs1_ffs_revise_060814_final_web_2.pdf (accessed 22 February 2022).

In this longform report, the authors present a systematic review of over 500 documents to assess the effectiveness of farmer field schools.

References

This chapter: Kneale, D., Bangpan, M., Thomas, J., & Sharma Waddington, H. Chapter 4.10: Using logic models in research and evaluation of Health EDRM interventions.

Avdeenko A, Frölich M. Impacts of increasing community resilience in the face of natural disasters through humanitarian aid in Pakistan. 2019. https://www.3ieimpact.org/sites/default/files/2019-06/IE100-TW6.1028-humanitarian-ACTED-Pakistan.pdf

Bangpan M, Chiumento A, Dickson K, Felix L. The impact of mental health and psychosocial support interventions on people affected by humanitarian emergencies: a systematic review. Humanitarian Evidence Programme. Oxford: Oxfam GB. 2017. https://fic.tufts.edu/assets/Mental-Health-Systematic-Review.pdf

Vogel I. Review of the use of 'Theory of Change' in international development. 2012 http://www.theoryofchange.org/pdf/DFID_ToC_Review_VogelV7.pdf

Waddington H,White H. Farmer field schools: from agricultural extension to adult education. 3ie Systematic Review Summary 1, International Initiative for Impact Evaluation, London. 2014: https://www.3ieimpact.org/sites/default/files/2019-05/srs1_ffs_revise_060814_final_web_2.pdf

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