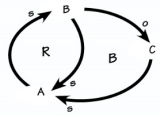
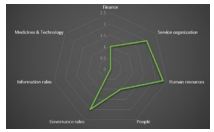
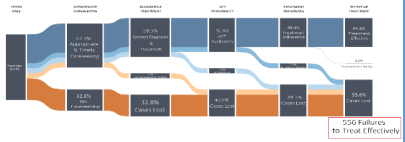
Swiss TPH

Applied systems thinking for health systems research						
Tool	**Description**	**Possible use**	**How**	**Useful resources**	**Evidence**	**Example**
Causal Loop Diagram	CLD is an analytical tool to document, model, and visually map the different interactions among a system's elements, variables or subsystems, and represent the nature and direction of their relationships.	1. Describe the system and its boundaries 2. Identify and understand systems problems 3. Support decision-making processes	Paper https://vensim.com/	https://www.youtube.com/watch?v=eM3Xzu8sr-8 https://www.youtube.com/watch?v=LgnBSdcxPD0	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6310960/pdf/12961_2018_Article_394.pdf	
Cynefin	Cynefin offers five decision-making contexts or "domains"—simple, complicated, complex, chaotic, and disorder—that help managers to identify how they perceive situations and make sense of their own and other people's behaviour.	1. Describe the system and its boundaries 2. Identify and understand systems problems		https://www.mindtools.com/pages/article/cynefin-framework.htm	https://pubmed.ncbi.nlm.nih.gov/22128193/	
Decision Space	Used to design and evaluate the decentralization of health systems. It examines choice as a function of agency.	1. Describe the system and its boundaries 2. Identify and understand systems problems 3. Support decision-making processes	Excel		https://pubmed.ncbi.nlm.nih.gov/29149317/	
Effectiveness Decay	The concept describes the achievement of "effective coverage" of an intervention to the conditional probability of its successive events. System factors are considered (e.g beginning with if and where a patient accesses care; whether and how services are administered, received and adhered to; and the success rate of treatment in producing a positive health outcome).	1. Identify and understand systems problems 2. Identify solutions to problems 3. Support decision-making processes 4. Monitor and evaluate system interventions	https://public.tableau.com/s/ https://powerbi.microsoft.com/en-us/	https://www.youtube.com/watch?v=1HwCzlA9hI4	https://www.ncbi.nlm.nih.gov/pubmed/32772891	
Embedded Research	Embedded research is best understood as an approach, not a specific method nor a tool. It describes the type of research in which researchers are part of the health system they are aiming to study.	1. Identify and understand systems problems 2. Identify solutions to problems 3. Support decision-making processes 4. Monitor and evaluate system interventions	N/A	https://www.ahpsr.org/stories/the-bumpy-road-to-better-health/#Introduction-LIpw1gqiPT		
Mind Mapping	Is a method by which you can take notes and visually organize information. Useful for brainstorming.	1. Identify and understand systems problems 2. Identify solutions to problems 3. Support decision-making processes	Paper https://www.xmind.net/	https://www.youtube.com/watch?v=5nTuScU70As		
Outcome Mapping	Outcome mapping facilitates planning of complex interventions by clarifying who are the key stakeholders, what are their relationships and how their work should contribute to immediate outcomes.	1. Analyse stakeholders 2. Monitor and evaluate system interventions	Paper		https://www.ncbi.nlm.nih.gov/pubmed/23526058	

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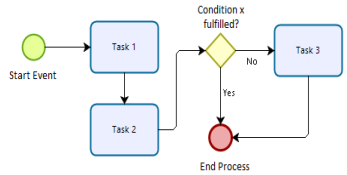
Process analysis	Systematic approach to understand, analyse and optimize processes in a participatory and action-oriented manner.	1. Describe the system and its boundaries 2. Analyse stakeholders 3. Identify and understand systems problems 4. Identify solutions to problems 5. Support decision-making processes	https://www.bizagi.com/?lang=en https://www.bonitasoft.com/	https://www.youtube.com/watch?v=Y7g8vWv11Vk	https://www.ncbi.nlm.nih.gov/pubmed/32146901	
Reflective Practice	Integration of guided critical thinking into routine activities. Can be used to reflect on planning activities or any other priority.	1. Identify and understand systems problems 2. Monitor and evaluate system interventions	Paper		https://pubmed.ncbi.nlm.nih.gov/29177215	
Social Network Analysis	Is the process of investigating social structures within the health system with the use of networks and graph theory.	1. Describe the system and its boundaries 2. Analyse stakeholders	NodeXL UCINet PowerBI		https://www.ncbi.nlm.nih.gov/pubmed/21840934 https://pubmed.ncbi.nlm.nih.gov/28637228/ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7121135/	
Soft System Methodology (SSM)	SSM is an organized learning system that can be used for general problem solving and in the management of change. It compiles several approaches and tools to understand the system. No software is needed. (e.g root cause analysis, CAWOT, etc)	1. Describe the system and its boundaries 2. Analyse stakeholders 3. Identify and understand systems problems 4. Identify solutions to problems 5. Support decision-making processes	Paper		https://www.ncbi.nlm.nih.gov/pubmed/31521156 https://www.tandfonline.com/doi/pdf/10.1057/jors.2012.21?needAccess=true	
Stakeholder Mapping	Stakeholder mapping is the visual process of laying out all the stakeholders of a product, project, or idea on one map. The main benefit of a stakeholder map is to get a visual representation of all the people who can influence your project and how they are connected.	1. Analyse stakeholders	Paper https://www.xmind.net/	https://www.youtube.com/watch?v=JOmshCYLEVE&list=PLsJWgOB5mIMCAD33pve6_HyfuGTlCTQgd&index=10		
System Dynamics Modelling	Systems dynamics is an approach to describe, model, simulate, and analyse dynamically complex issues/systems at a relatively high system level. It allows to simulate feedback and accumulation effects on specific blocks of the system.	1. Identify and understand systems problems 2. Identify solutions to problems 3. Test and model potential solutions			https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4056198/pdf/AJPH.2014.301884.pdf	
Theory of Change	Theory of Change is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context.	1. Identify and understand systems problems 2. Identify solutions to problems 3. Support decision-making processes	Paper Several open software available	https://www.theoryofchange.org/	https://pubmed.ncbi.nlm.nih.gov/32760440/#&gid=article-figures&pid=fig-2-uid-1	