

Additional File 1: Exemplar Group Model Building (GMB) Scripts to Operationalize the “Action” of Selected Expert Recommendations for Implementing Change (ERIC) Project Implementation Strategies

		Example GMB scripts and script goals (Scriptapedia ⁺)					
ERIC strategy*	ERIC strategy Definition*	Hopes and Fears	Behavior Over Time	Causal Mapping with Seed Structure	Nominal Group Technique	Action Ideas	Creating a Shared Vision
Capture and Share Local Knowledge	Capture local knowledge from implementation sites on how implementers and clinicians made something work in their setting and then share it with other sites	Identify priority areas to address; understand local culture/norms; identify what works or has worked and what has not (or does not currently)	Identify how local individuals perceive trends that shape a problem or the outcomes they care most about; identify time frame that might be most relevant to model (e.g., model time step)	Identify range of system structures (i.e., feedback loops) that partners hypothesize as most critical to understanding local problem(s); here, goal is breadth (i.e., divergence) of ideas and relatively quick brainstorm	Allows individuals (or small group within larger group) to share ideas in an equitable manner (round-robin, where each individual/small group shares one idea at a time until all their primary ideas are shared with the whole group)		
Identify Local Needs	Collect and analyze data related to the need for the innovation			Identify key feedback loops driving perpetuation of focal problem(s)		Generate breadth of ideas that could address the focal problem(s) and overall system that has been modeled; can identify feedback loops to intervene upon, specific interventions (e.g., evidence-based programs, policies)	Focus discussions and implementation exploration, planning based on local needs of highest priority

These scripts are mapped onto additional ERIC strategies on next page

Example GMB scripts and script goals (Scriptapedia*) *Continued*

ERIC strategy*	ERIC strategy Definition*	Hopes and Fears	Behavior Over Time	Causal Mapping with Seed Structure	Nominal Group Technique	Action Ideas	Creating a Shared Vision
Conduct local consensus discussions	Include local providers and other interested or impacted parties in discussions that address whether the chosen problem is important and whether the clinical innovation(s) to address it are appropriate	Identify common hopes and fears to inform vision statement and focus discussion on areas of shared importance (or concern) to participants			Helps to converge ideas across individuals/small groups by identifying themes in the individuals/small groups that are shared with the larger group	Identify breadth of interventions of interest to community to be used as an input in consensus discussions (i.e., obtain divergent ideas prior to converging ideas so as not to bias consensus discussion with overly narrow set of options to start)	Use vision statement to maintain project scope and resolve differences of opinion (e.g., conflict management) by reminding group of core values and how identified interventions may or may not contribute to achieving shared vision
Model and Simulate Change	Model or simulate the change that will be implemented prior to implementation			Develop early versions of causal loop diagrams and/or stock and flow diagrams that can be iterated and potentially used to develop quantitative models			

Additional scripts are mapped onto ERIC strategies on next page

Example GMB scripts and script goals (Scriptapedia+) *Continued*

ERIC strategy*	ERIC strategy Definition*	Dots	Modeling Project Community Presentation	Reflector Feedback	Reference Mode Elicitation	Structure Elicitation	Creating Causal Loop Diagrams from Connecting Circles
Identify Local Needs	Collect and analyze data related to the need for the innovation			Facilitator identifies and summarizes themes about the system (including key problem(s) to address and problem(s) determinants that the group shared to get corrections or confirmation of stories that should inform early model structures			
Conduct local consensus discussions	Include local providers and other stakeholders in discussions that address whether the chosen problem is important and whether the clinical innovation to address it is appropriate	Prioritize problems, outcomes, or interventions of highest priority by reviewing number of votes allocated to each option generated through other scripts or discussions (each individual votes 3-5 times with stickers or other indicators for all to see)	Use model outcomes to focus consensus discussions and provide objective demonstration of impacts against which to check individuals' mental models (e.g., correct errors in mental models that might belabor conflict in discussions)				

These scripts are mapped onto additional ERIC strategies on next page

Example GMB scripts and script goals (Scriptapedia⁺) *Continued*

ERIC strategy*	ERIC strategy Definition*	Dots	Modeling Project Community Presentation	Reflector feedback	Reference Mode Elicitation	Structure Elicitation	Creating Causal Loop Diagrams from Connecting Circles
Model and Simulate Change	Model or simulate the change that will be implemented prior to implementation		Present qualitative and/or quantitative system dynamics (or other systems science-based model such as agent-based modeling, social network) to facilitate community learning about the dynamics of problem(s) and potential solution(s); conduct “what-if” experiments to demonstrate potential intervention impacts	Can be leveraged early in GMB project to inform model development, but also later in project to correct or iterate model versions	Identify what outcomes or determinant (e.g., barriers, facilitators, risk factors, protective factors) partners perceive as most critical to understanding the base case/baseline (i.e., practice as usual) system status, and shape of base case trends	After “Reference Model Elicitation” script, used to converge ideas elicited thus far; focus is on understanding endogenous system behaviors (i.e., generated with the system as a function of changes in other system components); endogenous feedback loops are key structures to include in final model, as they provide some of the most impactful points of intervention**	Advance from brainstorming connections between variables to visualizing connections further in causal loop diagrams that demonstrate feedback loops and how interconnections lead to the system reaching a balanced state (i.e., homeostasis) or escalation/de-escalating behaviors

*Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., ... & Kirchner, J. E. (2015). A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science*, 10(1), 1-14.

*Available at <https://en.wikibooks.org/wiki/Scriptapedia> (Accessed 2022 July 21).

**Meadows, D. “Leverage Points: Places to Intervene in a System” (1999) The Sustainability Institute. Available at: <https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/> (Accessed 2023 December 19).