

## Supplementary file 2: Theoretical frameworks

Publication	Explicit reference to sustainability in the study aims (yes/no)	Framework	Details	Use in study	Stage of use
Ament et al.[76]	Yes	Consolidated Framework for Implementation Research (CFIR)[77]	Thirty-nine constructs organised into five domains related to the effective implementation of programs	a) Framing interview guide b) Categorising factors related to sustainability (study findings) under the five domains of the framework	Evaluation
Bridges et al.[48]	Yes	Normalisation Process Theory (NPT)[78]	Four dynamic processes involved in implementing and integrating new innovations	a) Guiding interview schedule b) Comparing emerging theories of implementation processes (study findings) with NTP framework	Evaluation
Burlew et al.[79]	Yes	In-Service Training (IST) Improvement Framework	Forty recommendations for improving the effectiveness, efficiency and sustainability of IST	a) Developing the survey tool	Evaluation
Cresswell et al.[80]	No	Conceptual Model for Considering the Determinants of Diffusion, Dissemination, and Implementation of Innovations in Health Service	Not specified by authors	a) Guiding the interpretation of results	Evaluation

			Delivery and Organization[59]; Rogers' work on the diffusion of innovation[81]			
De Neve et al.[82]	Yes	Conceptual framework for analyzing the harmonization of CHW programs	Five components based on Atun et al.'s[58] framework for analysing integration of targeted health interventions into health systems	a) Inform the design of semi-structured questionnaires b) Mapping mediators of harmonisation of programs (study findings) to the framework components	Evaluation	
Ford et al.[62]	Yes	National Health Service (NHS) Institute for Innovation and Improvement Sustainability Model <sup>a</sup> [65]	Ten factors, organised into three domains, identified to increase the likelihood of sustainability and continuous improvement of projects	a) Assessing participants' perceptions of sustainability via sustainability scores	Evaluation	
Greenhalgh et al.[83]	Yes	Framework developed by Øvretveit[84]; Conceptual framework for sustainability of public health programs[24]; Modified Dynamic model of health program sustainability[41]; Actor-Network Theory[85]	Adapted from Øvretveit[84]; Scheirer and Dearing[24]; Gruen et al.[41]; and Bisset and Potvin[85]	a) Informing the synthesis of qualitative and quantitative findings	Evaluation	
Kastner et al.[63]	Yes	National Health Service (NHS) Institute for Innovation and	Ten factors, organised into three domains, identified	a) Assessing participants' perceptions of sustainability via sustainability scores	Evaluation	

		Improvement Sustainability Model <sup>a</sup> [65]	to increase the likelihood of sustainability and continuous improvement of projects		
Kirchner et al.[86]	No	Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework[60]	Five domains related to health behaviour interventions	a) Evaluating outcomes. Outcomes for effectiveness, adoption and implementation measured at the late implementation phase. Each measure was measured again at the maintenance phase measure the degree to which the intervention outcomes were sustained	Evaluation
Licskai et al.[61]	No	Canadian Institute of Health Research ‘knowledge-to-action’ framework[87]	Knowledge-to-action’ cycle comprising process elements common to planned-action models. ‘Sustained knowledge use’ was an action phase of implementation	a) Implementing asthma guidelines.	Implementation
Mahomed et al.[64]	Yes	National Health Service (NHS) Institute for Innovation and Improvement Sustainability Model <sup>a</sup> [65]	Ten factors, organised into three domains, identified to increase the likelihood of sustainability and	a) Assessing participants’ perceptions of sustainability via sustainability scores	Evaluation

Palinkas et al.[88]	Yes	Author developed model of collaborative care sustainability	continuous improvement of projects Eight themes mapping to three categories	a) Mapping study findings	Evaluation
Pomey et al.[89]	Yes	A conceptual framework [unnamed]; Integrated model of unintended consequences within healthcare organizations[81]	Four dimensions adapted from Parsons[90]; four consequences adapted from Bloomrosen et al.[91]; Rogers[81].	a) Guiding analysis of transcripts b) Categorising consequences (study findings)	Evaluation
Sepey et al.[92]	Yes	Author developed sustainability framework	Adapted from Johnson et al.[93]; Chambers et al.[94]; Pluye, Potvin and Denis[37]; Moullin et al.[95]	a) Guiding open-ended questions b) Informing thematic analysis	Evaluation
Sorensen et al.[44]	Yes	Kotter's 8-Steps Change Model[96]	An eight step process mapping to three stages of change. The third change is 'Implementing and sustaining change'	a) Framing the question guide b) Structuring themes (study findings)	Evaluation
Tjia et al.[97]	No	Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework[60]	Five domains related to health behaviour interventions	a) Evaluating outcomes. Maintenance (i.e. sustainability) evaluated by	Evaluation

Tomioka & Braun[98]	Yes	Modified sustainability framework[22]	Modified from Scheirer. [22] Five sustainability factors, with the addition a sixth factor identified from a literature search	measuring outcome 12 months after the intervention a) Developing the interview guide	Evaluation
Zakumumpa et al.[68]	Yes	Framework for conceptualizing program sustainability[23]	Three levels that influence that influence health program sustainability	a) Structuring study findings	Evaluation

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<sup>a</sup> Three studies presented different names for the same tool. The “*National Health Service (NHS) Institute for Innovation and Improvement Sustainability Model*” has been adopted for consistency.