Appendix A

Categorization of dissemination and implementation models for use in research studies

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<td>171, 172</td>
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<td>Health services</td>
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<td>Clinical and health services intervention in community-based organizations</td>
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Note: Construct flexibility scale: 1 (broad) – 5 (operational).
In most cases, the value shows the number of times a model was cited based on the earliest reference to the model, which serves as an imperfect proxy to gauge use of the model in research studies. In some cases, exceptions were made to this rule based on the judgment of the authors. These citation numbers were acquired on February 7, 2012.

This citation number is provided for the 1995 edition (which first appears in Google Scholar) and not the edition that is cited.9

This citation number is provided for the 1984 edition (the first edition)17 and not the most recent edition.18

This citation number is provided for the 2010 reference,33 which is when the model was first published. The earlier citation34 is included to provide some background information on the development of the model.

These are the citation numbers for the 2003 article65 (437 citations) and the 200664 (111 citations) article. These were selected because the authors felt these articles best explained the model.

This citation number is provided for the 2003 reference.9 The other included references were used as the basis of the model that is described in the 2003 reference.

These are the citation numbers for the 2006 Collins125 (77 citations) and 2000 Neumann127 (43 citations) articles. These were selected because the authors felt these articles best explained the model.

Citation numbers for both the Elwyn171 (19 citations) and Szulanski172 (4377 citations) references are provided. Both were included because the authors felt the references were sufficiently different that the citation numbers for both would be useful.

D, dissemination; DHAP, Division of HIV/AIDS Prevention; 4E, exposure, experience, expertise, embedding; I, implementation; RAND, research and development; RE-AIM, reach, effectiveness, adoption, implementation, and maintenance
Appendix B

Case Study 2: Streams of policy process (obesity prevention legislation)\textsuperscript{15,18}

**Model Background:** The Streams of Policy Process model argues that policy change is influenced by three major process streams: (1) Recognition that a policy problem exists that needs to be addressed (the problem stream); (2) Development, refinement and vetting of policy proposals purporting to correct the policy problem (the policy stream); and (3) The flow of political events through which policy changes are effected (the political stream). These streams operate independently and an issue is most likely to arise on the policy agenda when there is an intersection, or 'coupling,' between the streams. When coupling occurs it creates a window of opportunity for policy action. Although coupling is often unpredictable, policy entrepreneurs often look for or create windows of opportunity for action.

**Study:** Arkansas’s Act 1220 of 2003: School-based Childhood Obesity Legislation

**Study Background:** Arkansas policy-makers recognized that halting the obesity epidemic necessitated progressive steps to outpace increasing disease rates. With the passage of Act 1220 in 2003, Arkansas enacted comprehensive legislation to combat childhood obesity. Act 1220 mandated immediate action while establishing the mechanisms for short- and long-term change at both state and local levels. This study explored factors that allowed the issue of childhood obesity to rise to the forefront of an overburdened legislative agenda and garner political attention resulting in legislative adoption.

**Use of Policy Streams:** This study used the Streams of Policy Process to guide the analysis. Factors that enabled the passage of Act 1220 were mapped onto the constructs of the analysis framework. One informant noted that public health leaders had for many years presented annual updates to legislators about the burden of obesity in Arkansas (problem stream). Another one noted that “the Act represented the culmination of a longer developmental process around the policy options available to the legislature” (policy stream). Recently, the Arkansas Legislature had commissioned the Arkansas Department of Health to establish an Obesity Task Force and Arkansas legislators were presented with a health resolution calling on them to take personal action and serve as role models in the state’s efforts to combat childhood obesity. (political stream). With the support of two prominent politicians who had recently suffered from obesity related health problems, one of which served as a policy entrepreneur, a policy window for childhood obesity was opened.
Appendix C

Case Study 3: Consolidated framework for implementation research (substance use disorder treatment)\textsuperscript{173,177}

**Framework Background:** The Consolidated Framework for Implementation Research (CFIR) was created to combine multiple implementation theories into one framework. The CFIR is composed of five major domains: intervention characteristics, outer setting, inner setting, characteristics of the individuals involved, and the process of implementation. Each domain contains several constructs. For example, the intervention domain has the following constructs: intervention source, evidence strength and quality, relative advantage, adaptability, trialability, complexity, design quality and packaging, cost.

**Study:** Continuing Care in Substance Use Disorder Treatment

**Study Background:** Continuing care following substance use disorder treatment is associated with improved outcomes. Evidence-based interventions (EBI) for continuing care have been developed, but there are large gaps between what is delivered in actual clinical care and these EBIs. The CFIR was used to review the literature on continuing care treatment and monitoring to assess the barriers to use of EBIs and to provide recommendations on how to overcome identified barriers.

**Use of CFIR:** This study used the CFIR to frame the recommendations for researchers and practitioners on how to increase use of continuing care EBI. Using the intervention domain as an example, the authors determined the strengths of continuing care interventions were the quality of the evidence base and the adaptability of the intervention. However, the intervention was hindered by its complexity. Furthermore, implementation was made difficult by the lack of information on the relative advantage of various EBIs to each other, the cost-effectiveness of each EBI, and the determination of core vs. adaptable components of each EBI. The authors therefore suggested researchers should develop studies to shed more light on these aspects of the intervention.
Appendix D

Case Study 4: Ottawa model of research use (technology use in government agencies)\textsuperscript{106,108,111,112}

Framework Background: The Ottawa Model of Research Use (OMRU) was developed to be used by both policymakers and researchers. The OMRU contains six constructs that were determined to be central to the process of research use: practice environment, potential adopters, evidence-based innovation, transfer strategies, adoption, and outcomes. These constructs are connected to each other through the processes of assessment, monitoring, and evaluation.

Study: Geographic Information System Technology Use in Local Ontario Early Years Centres

Study Background: Ontario Early Year Centres (OEYC) are agencies that provide services to young children and their parents/caregivers. The OEYCs collect rich, context-specific data, including data collected by geographic information system (GIS) mapping software, to inform decision-making and better serve clients. However, use of data, and GIS data specifically, by agency leaders has been inconsistent. Researchers investigated the barriers to implementation of mapping software as tools to support decision-making.

Use of OMRU: The researchers leading this study planned a two-phase qualitative study. The first phase focused on assessment by exploring how the culture of OEYCs influences perceptions, beliefs, and attitudes towards mapping programs. Using the OMRU, the investigators grouped identified barriers into the three constructs of assessment: innovation (prohibitive cost, limitations of previous mapping software, and expectations of the program); potential adopters (attitudes, skills related to interpreting maps, confusion on roles of managers vs data analysts); and environment (accurate data collection, confidentiality concerns, and usefulness of required reported data). The second phase of the study evaluated the use and impact of mapping software during and after implementation of interventions tailored to address the identified innovation, adopters, and environment-related barriers. This second phase encompassed the remainder of the OMRU model by implementing an intervention to increase knowledge transfer and assessing outcomes, in terms of increased adoption by OEYC managers and better provision of services to OEYC clients.
Appendix E

Case Study 5: Interactive system framework (teen pregnancy prevention)\textsuperscript{78,81}

**Framework Background:** The Interactive System Framework (ISF) was originally developed to be used by different types of stakeholders (e.g., funders, practitioners, researchers) to better understand the needs of all stakeholders and systems. The ISF identifies three systems: the Prevention Delivery System which implements innovations; the Prevention Support System which provides training, technical assistance (TA) or other support to users; and the Prevention Synthesis and Translation System which distills information and translates it into user-friendly formats. Each of these activities is necessary for the movement of innovations into widespread prevention practice at the community level.

**Study:** Promoting Science-based Approaches to Teen Pregnancy Prevention project (PSBA)

**Study Background:** The PSBA program was a multi-site, capacity-building effort that aimed to assist local prevention partners in the use of science-based approaches (SBA) to prevent teen pregnancy. ISF was adopted to allow for specific and strategic planning about what capacities were needed at the local level and to develop a framework for systematically building these capacities.

**Measures:** ISF was used to inform the evaluation and its measures for this project. Evaluation questions were developed to document and evaluate the process and outcomes of the PSBA project. There was a particular focus placed on how well the ISF-inspired, capacity-building model improved prevention practice among selected local partners.

**Use of ISF:** PSBA used all three systems of the ISF to facilitate practice improvements. The PSBA Prevention Delivery System included all local prevention partners who agreed to receive intensive TA from the state and regional grantees. The PSBA Prevention Support System included efforts made by CDC’s national, regional, and state partners to strengthen their own general organizational capacity; build SBA-specific capacity to provide training and TA; and assist local partners. The PSBA Prevention Synthesis and Translation System consisted of creating an accessible and comprehensive manual called Promoting Science-based Approaches to Teen Pregnancy Prevention using Getting to Outcomes (PSBA-GTO).
References for Appendixes A–E


39. Lomas J. Retailing research: increasing the role of evidence in clinical services for childbirth. Milbank Q 1993;439–75.


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