



Published in final edited form as:

Am J Community Psychol. 2012 December ; 50(0): 271–281. doi:10.1007/s10464-012-9545-3.

Advances in Bridging Research and Practice: Introduction to the second special issue on the Interactive System Framework for Dissemination and Implementation

Paul Flaspohler¹, Catherine Lesesne², Richard W. Puddy³, Emilie Smith⁴, and Abraham Wandersman⁵

¹Department of Psychology and Center for School Based Mental Health Programs, Miami University (Oxford, OH)

²ICF International, Atlanta Georgia

³Centers for Disease Control and Prevention

⁴Pennsylvania State University

⁵University of South Carolina

The need for new ways to bridge the gap between research and practice is clear; the use of evidence-based prevention programs and implementation with fidelity in practice are strikingly limited. For example, the U.S. Department of Education (2011) evaluation of the use of evidence-based prevention programs in substance abuse and school crime reported that only 7.8% of school programs met a standard of being research-based. Of these research-based programs, 44% met standards for being implemented with fidelity. Therefore, approximately 3.5% of all the school-based prevention programs in the study were both research-based and implemented with fidelity. This study illustrates the proverbial gap between research and practice and the clear need for better ways to bridge the two.

Historically, funders, scientists and practitioners have been aware of the need to bridge research and practice dating as far back to the 1862 Morrill Act, which was designed to create land-grant colleges and universities to better educate the population to avail themselves of knowledge of agriculture and mechanics. Early models of dissemination in business, agriculture, pharmaceuticals, and the behavioral sciences recognized the need for agents and systems of change that fostered diffusion and adoption of innovations (Fairweather & Davidson, 1986; Havelock, 1973; Rogers, 2003). In 2008, the Interactive Systems Framework for Dissemination and Implementation (ISF) was created to help bridge research and practice by specifying the systems and processes required to support dissemination and implementation of evidence-based programs, processes, practices, and policies (Wandersman et al, 2008). The ISF identifies three key systems necessary for this process which include the Prevention Synthesis and Translation System, the Prevention Support System, and the Prevention Delivery System. In the four years that have passed since the publication of the first special issue on the ISF in AJCP, many researchers and practitioners have applied the key concepts and themes found in the ISF to their current work. The articles in the second special issue on the ISF serve as an extension and complement to the original work. In this introduction to the issue, we outline the roots and

history of the ISF, highlight progress in dissemination/implementation resulting from the ISF, and provide a brief overview of the articles contained in this special issue.

The History of the ISF

In a presidential address to the Society for Community Research and Action, Wandersman (2003) called for the development of a field of community science which has as a major goal-- to improve the quality of life in our communities by improving the quality of the practice of treatment, prevention, health promotion, and education. Community science is an interdisciplinary field, which develops and researches community-centered models that enable communities to use evidence-based interventions more effectively and efficiently. The limitations of concentrating only on research-to-practice models were described and the need for broader models was requested. The ISF emerged, in part, from Wandersman's call to define and develop a Community Science and to find more effective means of understanding and supporting the transfer of innovation between/among practitioners, consumers, researchers, and policy makers. At the same time, the Division of Violence Prevention (DVP) at the Centers for Disease Control and Prevention (CDC) was challenged by the knowledge that there were evidence-based approaches for the prevention of problems such as youth violence and child maltreatment, but these effective approaches were not being widely adopted or implemented with quality.

In recognition of the need for stronger collaboration and support between research and practice, the CDC's DVP, the University of South Carolina, and Miami University initiated a three year dissemination/implementation planning project (Saul et al., 2008). The effort resulted in the creation of the ISF framework and the initial adoption and expanded application of the ISF within CDC projects and programmatic efforts. For example, DVP used the ISF to identify challenges for each of the three systems and accompanying research ideas to address the challenges, as well as, actions taken in response to the planning process to illustrate how a funder can use the ISF to bridge science and practice (Saul, Duffy et al. 2008). In another CDC example, the Division of Reproductive Health at CDC used the framework proactively in the Promoting Science Based Approaches to Teen Pregnancy Prevention Project (Lesesne et al., 2008). The framework was introduced to a broader audience in the *American Journal of Community Psychology* special issue on the ISF in 2008 (Wandersman et al., 2008) that included authors from several disciplines and interest in multiple content areas. Awareness and early interest in the ISF occurred quickly as demonstrated by several events including presentations at: the 2009 NIH Conference on the Science of Dissemination and Implementation, at the American Evaluation Association-CDC Summer Evaluation Institute (Wandersman & House, 2010), Biennial meetings of the Society for Community Research and Action (Flaspohler et al., 2007; Wandersman et al., 2005) the Annual Convention of the American Psychological Association (Flaspohler, Paternite, Wandersman, & Weist, 2005), the Annual Conference of the Society for Prevention Research (Flaspohler, Duffy, et al., 2005), and globally in Japan, Brazil, and New Zealand (university lectures by Wandersman).

The strengths of the first special issue about the ISF include clearly framing the components of the research to science process and early demonstration projects built upon the model (which were essentially more retrofits of the model). The current issue extends that work by including both researchers who have applied an ISF lens to aspects of their current work and researchers who have proactively applied the ISF in a process that goes across the various systems of the ISF, i.e., Synthesis and Translation, Support, and Delivery. Content areas include: children's mental health, teen pregnancy prevention, HIV prevention, violence prevention, heart disease and stroke prevention, breast cancer prevention, and substance abuse prevention. The goal in all cases is to build capacity and better understand the needs,

barriers, and resources necessary for the adoption of evidence-based practices with fidelity and quality implementation.

The 2008 special issue on the ISF has been widely disseminated and helped establish an important place for community psychology in the arena of bridging research and practice. Since its publication, the ISF has been cited over 150 times in a wide range of journals across disciplines including: *The Journal of the American Medical Association*, *The American Journal of Public Health*, *The American Journal of Evaluation*, *Prevention Science*, *Psychology of Women Quarterly*, and *The Journal of Epidemiology and Public Health*. While the ISF was a new framework and thus many submissions to the original special issue were supporting and/or applying the ISF to existing or past efforts in public health, there was considerable resonance with the systems, types of capacity, and need for system interaction to optimize dissemination and implementation opportunities. At the same time, the growing recognition of the need for better understanding of dissemination and implementation resulted in the development of a number of other frameworks around the same time as the ISF's debut (e.g., Domitrovich et al., 2008; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Layde et al., 2012). As theories and models are generated, more attention is paid to the importance of bridging the research-practice gap both in terms of action and in terms of research funding (see Chambers, this issue).

Drawing on lessons learned from the Synthesis and Translation System of the ISF, CDC realized the importance of making the ISF more accessible to a wider audience of practitioners in the field and applied its own synthesis and translation process to the original science behind the ISF itself. The resulting product is a translated ASAP (Applying Science, Advancing Practice) publication (see Appendix 1) that puts the ISF into user friendly language and format. If you are unfamiliar with the basic concepts of the ISF, you are encouraged to review the original paper describing the ISF (Wandersman et al., 2008), the ASAP synthesis publication (Appendix 1), and the paper by Thigpen, Puddy, Singer, and Hall (this issue) that describes the process of developing the ASAP translation product.

The Call for Papers and Response

Nearly a decade has passed since work began on developing the ISF. In that time, partnerships between researchers, funders, and community practitioners have led to demonstration projects based upon the ISF model. This work is timely and relevant for community psychologists and allied disciplines vested in designing programs, policies, and practices that create or sustain effective action. The challenge facing many change agents (practitioners and researchers alike) is how to use the best available evidence to inform and mobilize communities and systems to optimize the benefit of the programs, policies, and practices. The ISF provides a framework that can be illuminated and enhanced by the unique and common perspectives of funders, researchers, practitioners, and consumers. Our goals for this 2012 special issue were to provide a forum to further illuminate the ISF framework through: (1) *Expanding multi-disciplinary interest* in research and application of the ISF through contributions from a wide variety of fields; (2) Disseminating *innovative applications* of ISF-inspired efforts with more depth and reflection on the framework; and (3) Presenting *research, evaluation, and critiques* of the framework, its three main system components in action, the interaction between the systems, and/or the contextual features that surround the ISF. When the call for papers for the second special issue on the ISF was released, over 30 inquiries were submitted, signaling continued interest in its uptake. Furthermore, part of the success and attraction of the ISF was that it introduced the concept of systems being critical to the nature of the work of dissemination and implementation. The systems concept was brought to life and emphasized as one of the distinguishing features of the ISF. Taken as a whole, these articles provide insight into new and fertile directions to

focus both research and action in the social and behavioral sciences. If programs and services are developed to promote the greater good (or deliver outcomes that should benefit individuals, groups, and societies) and we know that there is a gap between research-proven practices and the achievement of their presumed good in the “real world,” then a systems approach to bridge this gap should lead to benefits to society. In this next section, we present the organization of the special issue and provide some perspective on the contributions and limitations of the special issue.

Illuminations

The majority of articles presented in this issue focus primarily on the Support System (e.g., the trainers, consultants that help foster implementation), the Delivery system (e.g., the staff and organizations involved in service provision), and the interaction between these two systems. In short, most contributors focused primarily on understanding and enhancing implementation of evidence-based programs and services through conceptualizing, assessing, and evaluating Support System functions, attributes of the Delivery System, or both. Efforts to conceptualize and test functions of Support Systems and their impact on Delivery Systems represent a great leap forward in addressing questions in the research-practice gap and illuminating how the ISF framework does and does not facilitate our ability to accomplish these aims. These articles are presented first in the special issue.

The Delivery System

A number of articles focus on attributes of the Delivery System (broadly defined) that are associated with successful implementation. For example, Chinman et al. (this issue) provide a baseline analysis showing that initial practitioner capacity predicts the quality and performance of prevention programs. By testing the first link in the chain of causation, Chinman and colleagues are moving toward testing the full causal links between an innovation, efforts to build capacity to effectively use the innovation, delivery of the innovation, and ultimately the achievement of intended consumer-level outcomes associated with the innovation. Similarly, Halgunseth and colleagues (this issue) use the ISF as a model for understanding how general capacity influences implementation of the evidence-based *Good Behavior Game* (Embry, 2002) in after-school settings. Gregory et al. (this issue) examine how sensitivity to organizational culture, cultural competence, and motivational interviewing affect building capacity for and delivering prevention programs and services. These articles contribute to increasing our understanding of how to conceptualize, measure, and build characteristics that influence implementation and dissemination that might be applicable across many interventions.

The next two articles pay particular attention to the roles, structures, and attributes of community coalitions and their relationship and functioning within the ISF framework. Saldana and Chamberlain (this issue) describe the Community Development Teams approach, wherein interdisciplinary coalitions are created to support implementation of Multidimensional Treatment Foster Care (Chamberlain, 1998). Firesheets, Francis, Barnum, and Rolf (this issue) describe collaboration between a professional support system and grassroots community coalitions (labeled community support systems).

The Support System

The Support System is the focus of a number of articles. Several are concerned with implementation of a particular program or service. For example, Smythe-Leistico and colleagues (this issue) describe support for implementation of a kindergarten transition project. Duffy and colleagues (this issue) examine a Prevention Support System for teen-pregnancy prevention. The authors describe a state-level initiative to implement teen

pregnancy prevention using the Getting to Outcomes (GTO) approach. They examine the impact of training and technical assistance on the level of implementation of pregnancy prevention programs. Rhoades, Bumbarger, and Moore (this issue) demonstrate how a state-level Prevention Support System in Pennsylvania has used empirical evidence to inform general and program-specific capacity building that support interactions among researchers, funders, and practitioners. Rhoades et al. expand on the ISF model incorporating funders and policy-makers as engaged stakeholders. Using the expanded ISF as a model for the wide-scale dissemination and support of evidence-based practices (EBPs), Pennsylvania has created an infrastructure to address the primary barriers to moving from lists of EBPs to achieving population-level public health improvement.

Several articles address the interaction between the Support System and the Delivery System. Florin et al. (this issue) describe how the ISF was applied in Rhode Island (RI) communities implementing the SAMSHA Strategic Prevention Framework by developing a Training and Technical Assistance Resources Center to support Prevention Delivery System members in their efforts to reduce substance abuse in RI communities. Florin et al. examined relationships between training and technical assistance and Strategic Prevention Framework implementation and outcomes—connecting the activities of the Support System to the practice outcomes of the Delivery System. Ray, Wilson, Wandersman, Meyers, and Katz (this issue) describe how the strategic combination of training of trainer (TOT) models with proactive technical assistance may lead to more optimal outcomes than simply TOT models alone—thus informing better practices in the transfer of knowledge, skills, and capacity to the Delivery System. Flaspohler, Meehan, Maras, and Keller (this issue) describe the goals and activities of a system for supporting the implementation of evidence-based practices in schools. This article provides a concrete example of actions used to build both general and innovation-specific implementation capacity involving “ready and willing” schools; the processes used to build capacity using training and consultation; and the efforts to monitor program fidelity. This article bridges the Support System and the Delivery System. Wandersman, Chien, and Katz (this issue) focus on the Support System interaction with the Delivery System as well. They propose an evidence-based approach to tools, training, technical assistance, and quality assurance/quality improvement. The article describes the Getting To Outcomes (GTO) accountability approach as a structure to enhance the science and practice of innovation support; the comprehensive approach includes planning, implementation, evaluation, and sustainability.

There is a strong emphasis on implementation throughout the special issue. A synthesis and translation of implementation science is presented by Meyers and colleagues in two articles: 1) a synthesis of 25 implementation frameworks (Quality Implementation Framework) (Meyers, Durlak, & Wandersman, this issue) focuses on specific actions that can be employed to foster high quality implementation, and 2) a translation of the results of the synthesis (Quality Implementation Tool) and its use for improving quality of implementation (Meyers, Katz, et al., this issue). Rapkin and colleagues (this issue) suggest the advantages of using the ISF to frame a rigorous approach to evaluation that incorporates quality improvement principles into the dissemination of evidence-based strategies to promote early detection of breast cancer through screening.

The Framework

Several articles examine the ISF as a whole. For example, Collins and colleagues (this issue) compare the ISF with the CDC’s Division of HIV/AIDS Prevention dissemination model drawing specific attention to similarities and differences, but ultimately illustrates how the two models are complementary with each contributing substantially to addressing the gap between identifying effective programs and ensuring their widespread adoption in the field. A final set of articles are examples of how the ISF has been used as a whole as either a tool

or a framework for the development or improvement of dissemination efforts. For example, Taylor, Weist, and DeLoach (this issue) describe the way that the ISF was used to frame discussion of how to support dissemination and implementation of evidence-based trauma services in New Orleans schools after Hurricane Katrina. Lane et al. (this issue) describe how the ISF was used to frame the evaluation of report recommendations from the Institute of Medicine to prevent and control hypertension. Lewis et al. (this issue) describe how the ISF guided the development of a synthesis/translation tool intended to promote the use of evidence-based teen pregnancy prevention and the multi-layered support systems and strategies used to support the innovation in practice settings.

Plenty of Room for Continued Refinement

The contributions in this special issue demonstrate advancement in the thinking and the empirical investigation of the ISF and ISF-like systems of moving research into practice; however, there remains a paucity of research using rigorous designs to test the implied causal pathways from system to system explicated in the ISF. Although Chinman et al. (this issue) and Lane et al. (this issue) may soon have more data and ability to rigorously test aspects of the framework, we are not there yet.

Also, there were not contributions in the issue that truly reflected the dynamic interaction of the Delivery System through the Support System to inform the Synthesis and Translation system. Efforts to identify practice-based innovations worthy of further research and, if effective, refined support systems to bolster these innovations in practice—were not submitted. Methods such as the systematic screening and assessment methodology (Leviton & Gutman, 2010) used to identify innovative practices developed by the Delivery System were absent from this issue. Perhaps this reflects the audience of the journal or a lack of resonance with the ISF among those aiming to build practice-driven/practice-based innovations.

Most of articles presented here are about the movement of research-proven programs into new settings. There is very little about movement of practice in the opposite direction. Our best examples of movement in this direction might be the pieces that describe necessary factors and conditions in the Delivery System (on the ground) that are associated with achievement of outcomes (e.g., Firesheets et al.; Chinman et al.; Flaspohler et al.; Saldana et al.; and Gregory et al.). The ISF came from explicit recognition that understanding both research to practice models (focused in development and dissemination of rigorously evaluated interventions) and community-centered models (which emphasize community control and participation in developing locally driven solutions to high-priority problems) provide valuable insight for strengthening dissemination and implementation. It is worth noting the absence of submissions to the second special issue on the ISF that emphasize community-centered or community developed strategies or programs.

Coalitions like those described here in various manuscripts have become critical agents in promoting community and school-based prevention, but they do not always fit cleanly into the ISF systems. They are not necessarily engaged directly in the delivery of services or serve in support roles, but play a gatekeeping role – facilitating access between the support and delivery systems or acting as paraprofessional support providers. This point is shared by many examples of multi-layered Support Systems and Delivery Systems. More needs to be known about how to create effective interfaces among the ISF systems, specifically among the Prevention Support System and coalitions.

The articles in this second special issue on the ISF are located between a foreword by Chambers (this issue) who describes how the ISF can assist the NIH in reaching out from the clinical/medical innovations perspective to the world of clinical practice *and* a

commentary by Noonan, Wilson, & Mercer (this issue) who describe how the ISF can further assist CDC in bridging applied research and public health practice. The two perspectives are energizing in that the ISF continues to provide a systems structure to be built upon conceptually and empirically to help bridge research and practice.

Acknowledgments

We would like to thank the following people for reviewing submissions for this Special Issue: Gregory Aarons

Melanie Barwick

Gary Blau

David Chambers

Matthew Chinman

Christian Connell

Joe Durlak

Rochelle Fritz

Joel Gaffney

Jennifer Gibson

Corinne Graffunder

Linda C. Halgunseth

Anna Hung

Pamela Imm

David Julian

Hal A. Lawson

Melissa A. Maras

Elizabeth A. Mellin

Trisha Mueller

Sandra Naoom

Rita Noonan

Larry Pasti

Nathaniel Riggs

Jean Schenshul

Vanessa Watts

Kathi Wilson

References

- Act of July 2, 1862 (Morrill Act), Public Law, which established land grant colleges, 07/02/1862; Enrolled Acts and Resolutions of Congress, 1789–1996; Record Group 11; General Records of the United States Government; National Archives.
- Chamberlain P. Treatment foster care. *OJJDP Juvenile Justice Bulletin*. 1998 Dec.:1–11.
- Chambers D. The Interactive Systems Framework for Dissemination and Implementation: Enhancing the Opportunity for Implementation Science. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9528-4
- Chinman M, Acosta J, Ebener P, Burkhart QBQ, Clifford M, Corsello M, Tellett-Royce N. Establishing and Evaluating the Key Functions of an Interactive Systems Framework Using an Assets-Getting to Outcomes Intervention. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9504-z
- Collins C, Edwards A, Jones P, Kay L, Cox P, Puddy R. A Comparison of the Interactive Systems Framework (ISF) for Dissemination and Implementation and the CDC Division of HIV/AIDS Prevention's Research-to-Practice Model for Behavioral Interventions. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9525-7
- Domitrovich CE, Bradshaw CP, Poduska JM, Hoagwood K, Buckley JA, Olin S, Ialongo NS. Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Advances in School Based Mental Health Promotion*. 2008; 1:6–28.
- Duffy J, Prince M, Johnson E, Alton F, Flynn S, Faye A, Hinzey A. Enhancing Teen Pregnancy Prevention in Local Communities: Capacity Building Using the Interactive Systems Framework. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9531-9
- Embry DD. The Good Behavior Game: A best practice candidate as a universal behavioral vaccine. *Clinical Child and Family Psychology Review*. 2002; 5(4):273–297. [PubMed: 12495270]
- Fairweather, GW.; Davidson, WS. An introduction to community experimentation : theory, methods, and practice. New York: McGraw-Hill; 1986.
- Firesheets E, Francis M, Barnum A, Rolf L. Community-Based Prevention Support: Using the Interactive Systems Framework to Facilitate Grassroots Evidenced-Based Substance Abuse Prevention. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9506-x
- Fixsen, DL.; Naoom, SF.; Blase, KA.; Friedman, RM.; Wallace, F. Implementation Research: A Synthesis of the Literature. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network; 2005. (FMHI Publication #231)
- Flaspohler, P.; Duffy, J.; Saul, J.; Audage, N.; Stillman, L.; Wandersman, A. Bridging Research to Practice and Community-Centered Models in Child Maltreatment and Youth Violence Prevention. Paper presented at the 13th Annual Meeting of the Society for Prevention Research; Washington, D.C. 2005 May.
- Flaspohler P, Meehan C, Maras M, Keller K. Ready, Willing, and Able: Developing a Support System to Promote Implementation of School-Based Prevention Programs. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9520-z
- Flaspohler, P.; Paternite, CE.; Wandersman, A.; Weist, MD. Using Community Science to Promote School-Based Mental Health. Paper presented at the Annual Convention of the American Psychological Association; Washington, D.C. 2005 Aug.
- Flaspohler, P.; wandersman, A.; Saul, J.; Durlak, J.; Zeldin, S.; Chinman, M.; Emshoff, J. Illuminating the Framework: Strengthening Dissemination and Implementation through application of the Interactive Systems Framework for Dissemination and Implementation. Paper presented at the 11th Biennial Meeting of the Society for Community Research and Action; Pasadena, CA. 2007 Jun.
- Florin P, Friend K, Buka S, Egan C, Barovier L, Amodei B. The Interactive Systems Framework Applied to the Strategic Prevention Framework: The Rhode Island Experience. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9527-5

- Gregory H, Van Orden O, Jordan L, Portnoy G, Welsh E, Betkowski J, DiClemente C. New Directions in Capacity Building: Incorporating Cultural Competence into the Interactive Systems Framework. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9508-8
- Halgunseth L, Carmack C, Childs S, Caldwell L, Craig A, Smith E. Using the Interactive Systems Framework in Understanding the Relation Between General Program Capacity and Implementation in Afterschool Settings. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9500-3
- Havelock, RG. *Planning for Innovation Through Dissemination and Utilization of Knowledge*. Ann Arbor, MI: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan; 1973.
- Lane R, Berkowitz J, Sullivan S, Rose J, Bernichon T, Favoretto A, Jones M. Applying the Interactive Systems Framework to the Dissemination and Adoption of National and State Recommendations for Hypertension. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9511-0
- Layde PM, Christiansen AL, Peterson DJ, Guse CE, Maurana CA, Brandenburg T. A Model to Translate Evidence-Based Interventions Into Community Practice. *American Journal of Public Health*. 2012; 102(4):617–624.10.2105/Ajph.2011.300468 [PubMed: 22397341]
- Lesesne CA, Lewis KM, White CP, Green DC, Duffy JL, Wandersman A. Promoting science-based approaches to teen pregnancy prevention: Proactively engaging the three systems of the interactive systems framework. *American Journal of Community Psychology*. 2008; 41(3–4):379–392.10.1007/s10464-008-9175-y [PubMed: 18302017]
- Leviton, LC.; Gutman, MA. Overview and rationale for the Systematic Screening and Assessment Method. In: Leviton, LC.; Khan, LK.; Dawkins, N., editors. *The Systematic Screening and Assessment Method: Finding innovations worth evaluating*. *New Directions for Evaluation*. Vol. 125. 2010. p. 7-31.
- Lewis K, Lesesne C, Zahniser S, Wilson M, Desiderio G, Wandersman A, Green D. Developing a Prevention Synthesis and Translation System to Promote Science-Based Approaches to Teen Pregnancy, HIV and STI Prevention. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9510-1
- Meyers D, Durlak J, Wandersman A. The Quality Implementation Framework: A Synthesis of Critical Steps in the Implementation Process. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9522-x
- Meyers D, Katz J, Chien V, Wandersman A, Scaccia J, Wright A. Practical Implementation Science: Developing and Piloting the Quality Implementation Tool. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9521-y
- Rapkin B, Weiss E, Lounsbury D, Thompson H, Goodman R, Schechter C, Padgett D. Using the Interactive Systems Framework to Support a Quality Improvement Approach to Dissemination of Evidence-Based Strategies to Promote Early Detection of Breast Cancer: Planning a Comprehensive Dynamic Trial. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9518-6
- Ray M, Wilson M, Wandersman A, Meyers D, Katz J. Using a Training-of-Trainers Approach and Proactive Technical Assistance to Bring Evidence Based Programs to Scale: An Operationalization of the Interactive Systems Framework's Support System. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9526-6
- Rhoades B, Bumbarger B, Moore J. The Role of a State-Level Prevention Support System in Promoting High-Quality Implementation and Sustainability of Evidence-Based Programs. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9502-1
- Rogers, EM. *Diffusion of innovations*. 5. New York, NY: Free Press; 2003.
- Saldana L, Chamberlain P. Supporting Implementation: The Role of Community Development Teams to Build Infrastructure. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9503-0
- Saul J, Wandersman A, Flaspohler P, Duffy J, Lubell K, Noonan R. Research and Action for Bridging Science and Practice in Prevention. *American Journal of Community Psychology*. 2008; 41(3–4): 165–170. [PubMed: 18317921]

- Smythe-Leistico K, Young C, Mulvey L, McCall R, Petruska M, Barone-Martin C, Coffee B. Blending Theory with Practice: Implementing Kindergarten Transition Using the Interactive Systems Framework. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9505-y
- Taylor L, Weist M, DeLoach K. Exploring the Use of the Interactive Systems Framework to Guide School Mental Health Services in Post-disaster Contexts: Building Community Capacity for Trauma-Focused Interventions. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9501-2
- Thigpen S, Puddy R, Singer HH, Hall DM. Moving Knowledge Into Action: Developing the Rapid Synthesis and Translation Process within the Interactive Systems Framework. *American Journal of Community Psychology*. (this issue).
- U.S. Department of Education. Prevalence and Implementation Fidelity of Research-Based Prevention Programs in Public Schools: Final Report. Washington DC: U.S. Department of Education; 2011.
- Wandersman A. Community science: Bridging the gap between science and practice with community-centered models. *American Journal of Community Psychology*. 2003; 31(3–4):227–242. [PubMed: 12866681]
- Wandersman A, Chien V, Katz J. Toward an Evidence-Based System for Innovation Support for Implementing Innovations with Quality: Tools, Training, Technical Assistance, and Quality Assurance/Quality Improvement. *American Journal of Community Psychology*. (this issue). 10.1007/s10464-012-9509-7
- Wandersman A, Duffy J, Flaspohler P, Noonan R, Lubell K, Stillman L, Saul J. Bridging the gap between prevention research and practice: An Interactive Systems Framework for Building Capacity to Disseminate and Implement Innovations. *American Journal of Community Psychology*. 2008; 41(3–4):171– 181. [PubMed: 18302018]
- Wandersman, A.; House, D. Bringing Funders, Researchers/Evaluators, and Practitioners Together to Achieve Outcomes: The Interactive Systems Framework (ISF) for Dissemination and Implementation. Paper presented at the AEA-CDC Summer Evaluation Institute; Atlanta, GA. 2010.
- Wandersman, A.; Saul, J.; Duffy, J.; Flaspohler, P.; Dunnville, R.; Stillman, L.; Emshoff, J. Framework for Effective Prevention in Communities. Paper presented at the 10th Biennial Meeting of the Society for Community Research and Action; Urbana-Champaign, IL. 2005 Jun.

Appendix I

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Applying Science. Advancing Practice.

A
S
A
P

Understanding the Interactive Systems Framework for Dissemination and Implementation

State public health agencies and sexual assault coalitions have developed prevention plans with goals and objectives to prevent first time perpetration of sexual assault as part of the Rape Prevention Education (RPE) program. These plans were intended to prepare the way for successful and sustainable implementation of evidence-based prevention programs. However, very few of these evidence-based programs exist for the prevention of sexual violence. This lag in the development of evidence-based programs continues to challenge both sexual violence prevention researchers and practitioners.

The public health approach to violence prevention (Figure 1) uses four steps to systematically define the problem, identify risk and protective factors, develop and test prevention strategies, and finally, ensure widespread adoption. This model assumes that the tested interventions will be used in the field, but it provides very little information on how this should be accomplished.

The Interactive Systems Framework (ISF) for Dissemination and Implementation was developed to address the "how to" gap that exists between scientifically determining what works and moving that knowledge into the field for the benefit of the public.

Those who work in the various fields of violence prevention are motivated to develop, evaluate, disseminate, and implement effective strategies for preventing violence with the goal of building a safer, healthier society. Ideally we would select programs, practices, or policies that have been proven to be effective—meaning there is strong, scientific evidence that they work.

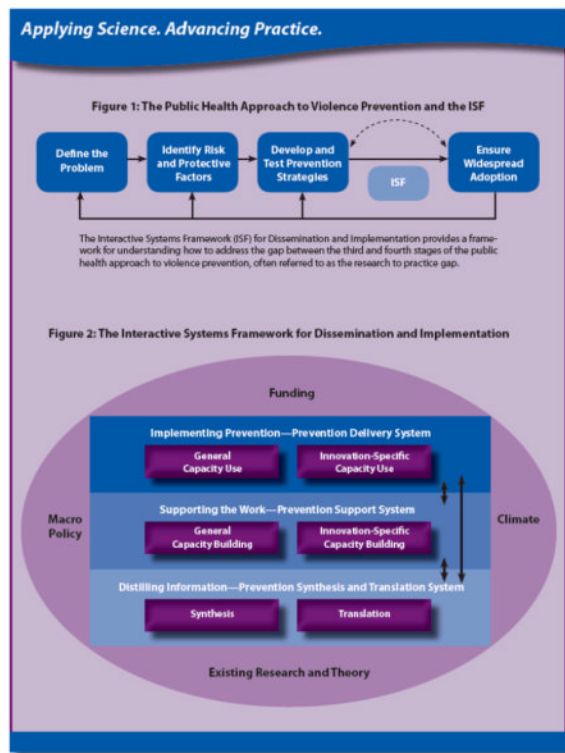
Applying Science. Advancing Practice.

What is ASAP? *Applying Science, Advancing Practice* (ASAP) is a series of informational briefs created by CDC's Division of Violence Prevention to help apply scientific knowledge to the practice of primary prevention of violence.

Who is it for? This series of ASAPs are written for state health departments and statewide sexual assault coalitions, the current support system for rape prevention education activities. Sharing with other violence prevention partners is encouraged.

How will it help? ASAP offers specialized, topic-specific information necessary for successful, sustainable violence prevention efforts. This particular series on sexual violence prevention is intended to provide information and resources for RPE grantees who provide prevention support to community-based prevention education activities.

National Center for Injury Prevention and Control
Division of Violence Prevention



A
S
A
P

The ISF was developed specifically with the fields of youth violence and child maltreatment prevention in mind, where much evidence has been gathered over the past several decades about what works and does not work. Despite this growing evidence, wide-spread use of these effective strategies has been less than ideal. The ISF resolves this by addressing some of these questions:

- How do we achieve the widespread use of effective practices, policies, and programs to prevent violence?
- What infrastructures or systems are necessary to ensure that dissemination and implementation are carried out successfully?
- How do organizations and practitioners build the capacity necessary to bring effective violence prevention strategies to scale community wide?

One advantage the ISF offers to the sexual violence prevention field is a well thought out, underlying process for how to move science to practice. By spending the time understanding these underlying processes now, the field will be better prepared to more rapidly move effective programs, practices, or policies into the hands of communities as they become available later.

A Closer Look at the Interactive Systems Framework

Figure 2 shows the ISF and how it connects three systems to work together for successful dissemination and implementation of prevention innovations. The term "system" is used broadly to describe a set of activities that accomplish one of the three identified functions that make dissemination and implementation possible. These systems are:

Prevention Synthesis and Translation System
Here scientific knowledge is distilled into understandable and actionable information. Research institutions, universities, and the Division of Violence Prevention (DVP) at CDC are all institutional examples of this system.

Prevention Support System
This system supports the work of the other two systems through building capacity for carrying out prevention activities. Agencies like CDC, state health departments, or state sexual assault coalitions are often in the role of prevention support for grantees or local programs.

Prevention Delivery System
This is where innovations are actually implemented or where "the rubber meets the road." Community-based organizations often function in the role of the prevention delivery system.

As depicted in figure 2, these three systems work together and are embedded within an underlying context that influences decision-making and adoption of prevention strategies. These underlying conditions include: legislation that supports funding for sexual assault prevention, the best available theory and research related to the prevention of sexual assault, the community and/or organizational context in which sexual assault strategies are implemented and macro-level policy factors such as state or federal level budget constraints or legislative changes. These underlying considerations are graphically displayed as the climate in which the three systems exist, and all of these have an impact on successful dissemination and implementation. Each system within the ISF also builds upon or influences the functions of the other two systems. These relationships and influences are represented by the arrows that connect the systems to each other.

"If we keep doing what we are doing, we will keep getting what we are getting."
—Anonymous

For sexual violence prevention, where the research evidence is scant and still being built, the ISF can be especially helpful. What the ISF can do is take what we do know about effective prevention principles and processes and distill that knowledge into understandable concepts through the Prevention Synthesis and Translation System. The Prevention Support System builds the capacity of local organizations to put these prevention principles and processes into practice. The Prevention Delivery System serves to strengthen and deliver prevention principles and processes on the ground.

To illustrate how the ISF would function in the prevention of sexual violence, consider the following examples of activities that may occur within each system:

A
S
A
P

Applying Science. Advancing Practice.

Distill (PST)

- Review and condense scientific literature on risk and protective factors for sexual violence.
- Translate research findings about risk and protective factors for sexual violence into user friendly language.

Support (PSS)

- Build the capacity of local organizations to develop strong leaders, understand how to use data, or form long-lasting partnerships.
- Provide training and technical assistance about specific prevention strategies.

Delivery (PDS)

- Implement sexual violence prevention strategies across a community.
- Support the spread and uptake of effective sexual violence prevention principles.
- Monitor and evaluate programmatic activities to further improve the program.

While the ISF includes activities or functions that are carried out by people in many different kinds of roles and within three distinct systems, these systems are working together to distill, support, and deliver prevention strategies. By understanding the functions of these three systems and how they work together, organizations, stakeholders, funders, and practitioners can communicate better and work together to disseminate and more effectively implement prevention strategies.

You may have noticed that in the example above, much of the RPE grantees roles and/or functions showed up in the Prevention Support System. This makes sense because as an RPE grantee, the role of state public health agencies and state-level sexual assault coalitions is to provide support for local programs to ensure they can implement rape prevention education at the community level. These support activities can be seen as an important link between taking scientifically derived information and putting it into practice.

Future editions of ASAP will focus on the PSS in more detail. Specifically, they will describe how to understand the capacities necessary for individuals and organizations (which are linked through systems) to prevent sexual violence and build healthier and safer communities.

Key Terms

The following key terms are found throughout this brief.

Capacity: The ability, skills, and motivations to conduct and sustain prevention work at the individual, organizational, and systems level. The ISF views capacity as carrying out important functions in two distinct ways:

- **General Capacity** – a capacity to implement or improve any programmatic strategy or activity.
- **Innovation Specific Capacity** – a capacity needed to plan, implement, evaluate and sustain primary prevention strategies.

Dissemination: The intentional, targeted spreading of an innovation from the originators to the intended users that result in a targeted and facilitated process of distributing information and materials to organizations and individuals who want and can use them to improve health.

Implementation: A purposeful set of specific activities that result in individual or organizational use of an innovation.

Innovation: New prevention knowledge or information - product, practice, program, policy, idea, research findings, or results.

Strategy: An approach to address a problem such as the promotion of respectful relationships to reduce interpersonal violence.

Synthesis: A process for obtaining and summarizing scientifically derived information, including evidence of effectiveness (risk and protective factors, core elements, and key features, etc.).

Translation: The process of converting scientific and technically complex research into everyday language and applicable/actionable concepts in the practice setting.

More Information

More information about the ISF can be found in the following article at www.cdc.gov/ViolencePrevention/sexualviolence/translation.html

Wardleman, A., Deity, J., Flaspohler, P., Mooney, R., Labelle, K., Stillman, L., et al. (2010). Bridging the gap between prevention research and practice: The Interactive Systems Framework for Dissemination and Implementation. *American Journal of Community Psychology*, 41, 3-4.

For more information, please contact:
Centers for Disease Control and Prevention
1-800-CDC-INFO • www.cdc.gov/violenceprevention • cdinfo@cdc.gov