National Implementation Research Network

Implementation Brief

Active Implementation Practice and Science

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Abstract: The processes for purposefully producing improvements in human services are now understood as "implementation." Implementation practice, science, and policy to support the effective use of interaction-based innovations are outlined in this Brief.

Keywords: implementation science

Background

Efforts to improve human services (e.g. child welfare, community development, corrections, education, health, global health, mental health, public health, social services, substance abuse treatment, and others) have been underway for decades without noticeable improvements in outcomes. The lack of impact of well-intentioned reform/change efforts is found in child welfare, community development, corrections, education, global health, mental health, and other fields. It now is clear that knowing what to do is insufficient. A new science of implementation has emerged that focuses on how innovations need to be supported so that practitioners actually use effective innovations in their interactions with others. Using time worn approaches to implementation only leads to predictable results – 5% to 15% uptake and even those modest outcomes are rarely sustained. The resulting islands of excellence are encouraging (yes, it is possible) but have not produced a sea of change. The purpose of this Brief is to offer a new view of "the problem" and guidance for using implementation science to achieve socially significant impacts.

Teachers, therapists, community organizers, and others today are doing pretty much what their predecessors were doing in the last century – and achieving similar outcomes. One reason is that interaction-based innovations inherently are complex. One human being (e.g. a therapist; teacher; community organizer) is interacting with another human being (e.g. a patient; student; neighborhood resident) in a way that is intended to be helpful. Complexity arises because each influences the other in expected and unexpected ways that determine outcomes. Unlike computer hardware or software or the chemical composition of pills that stay the same no matter who delivers them, the presence of the essential ingredients that make up interaction-based interventions depends completely on who delivers them. They necessarily vary across practitioners, individuals, and situations – a complex riddle to solve.

Advances are being made. The processes for purposefully producing improvements in human services are now understood as "implementation." To implement is to use. Implementation practice, science, and policy to support the full and effective use of interaction-based innovations are outlined in this Brief.

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Implementation, diffusion, and dissemination

Clarity is needed regarding popular terms in the field. Diffusion, dissemination, and implementation align with three categories of activity identified by Hall & Hord (1987) in their research on leadership and by Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou (2004) in their systematic review of the literature:

The *letting it happen* literature is populated with studies of diffusion of information about innovations (Rogers, 1962, 1995). An outcome of diffusion of information by champions and thought leaders is adoption of an innovation (i.e. people saying they will use an innovation).

The *helping it happen* literature is characterized by studies of the contributions of practitioner and organization readiness, system influences, websites, clinical guidelines, training, and other forms of communication that urge understanding and use of innovations (Brownson, Colditz, & Proctor, 2012; Tabak, Khoong, Chambers, & Brownson, 2012). An outcome of dissemination is people attempting to use an innovation in practice (i.e. one or more individuals learn about an innovation and try to make use of that innovation in their work).

The *making it happen* literature concerns factors contributing to the uses of innovations as intended (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Meyers, Durlak, & Wandersman, 2012). An outcome of implementation is the actual use of an innovation with good results in practice (i.e. the goal of using an innovation is pursued until the essential elements of that innovation are being used and promised results are realized in practice).

Letting it happen and helping it happen approaches eventually result in about 5% to 15% use of innovations as intended (Green, 2008). Diffusion and dissemination serve as the foundation for most federal and state policies related to making use of human service innovations. For example, federal technical assistance (TA) grants fund information gathering, publications and meetings to share information, and web-based and in-person training sessions to provide more detailed information in a lecture-discussion format. Using this process, hundreds of millions of dollars are spent each year on the diffusion and dissemination of information in human service domains. Studies of the results of these initiatives continue to find modest benefits for intended recipients.

While diffusion and dissemination efforts are necessary, they are not sufficient for supporting implementation efforts to solve national problems (Kessler & Glasgow, 2011). For example, the federal Institute for Education Sciences conducts periodic national assessments of education progress. The literacy scores for 9-year-old students has hovered around 215 on a 500-point scale since 1971. Over many decades, the legislated reforms and tremendous investments in education innovations have not produced more students who learn to read by age 9 so they can read to learn for the rest of their lives. This is not an indictment of educators, but recognition of the importance of implementation. Students and others cannot benefit from reforms and innovations they do not experience (Chapin Hall Center for Children, 2002; Vernez, Karam, Mariano, & DeMartini, 2006). If innovations are not used as intended in practice, the promised results cannot be realized.

Making it happen approaches are quite different. They embrace "the complexities of spreading and sustaining innovation in service organizations" (Greenhalgh et al., 2004; p 614). The Active Implementation Frameworks offer purposeful and persistent supports for using innovations as intended and producing promised results in practice. The use of active implementation supports can result in 80% use of innovations as intended (Fixsen, Blase, Timbers, & Wolf, 2001).

Impact Factors

Current knowledge about making it happen approaches to implementation can be summarized in a formula for success to realize socially significant outcomes:

The formula recognizes aspects of innovations that can aid effective implementation and contribute to socially significant outcomes. The formula also attends to aspects of organization and system contexts that enable effective implementation supports for effective innovations in human services.

An essential part of the formula is the predicted interactions among the factors. As in any multiplication formula, if any factor is zero the product is zero. For example, lack of attention to effective implementation methods results in poor outcomes even when innovations are effective and contexts are generally enabling. Furthermore, the factors can compensate for one another and produce a common outcome – for example, 1.0 X 0.5 X 2.0 = 1.0 and 0.4 X 2.0 X 1.25 = 1.0.

It is important to note the product of the formula is socially significant outcomes. This result emphasizes the pursuit of social impact that is readily observable with the intended population.

Active Implementation Frameworks

Active implementation frameworks can guide efforts to make use of effective innovations in enabling contexts (Fixsen, Blase, Metz, & Van Dyke, 2015; Metz et al., 2014).

Implementation Stages

The literature is clear that implementation is a process that takes two to four years to complete in most provider organizations. It is an iterative process with steps that are focused on achieving benefits for children, families, provider organizations, human service systems, and communities. It appears there are four functional stages of implementation: exploration, installation, initial implementation, and full implementation. The stages are additive and each impacts the others in complex ways. For example, an organization may move from full implementation back to initial implementation in the midst of unusually high levels of staff turnover. And, exploration may be repeated for each new executive leadership group.

Usable Innovations and Implementation Drivers

Based on the commonalities among successfully implemented programs across many fields, core implementation components have been identified (Fixsen et al., 2005). The goal of implementation is to have practitioners (e.g. caseworkers, foster parents, teachers, therapists, physicians, probation officers) use innovations effectively. The first task is to assure the innovation is defined well enough to be usable in practice (Blase & Fixsen, 2013; Michie, Fixsen, Grimshaw, & Eccles, 2009). Usable Innovations operationalize what should be done at the practice level to achieve desired outcomes. Once a Usable Innovation is defined, high-fidelity practitioner behavior is created and supported by implementation drivers. The implementation drivers consist of competency drivers (staff selection, pre-service and in-service training, ongoing coaching and consultation, fidelity assessment), organization drivers (decision support data systems, facilitative administrative supports, system interventions), and leadership drivers (technical leadership, adaptive leadership). These interactive processes are *integrated* to maximize their influence on staff behavior and organizational functioning. The interactive implementation drivers also *compensate* for one another in that a weakness in one component can be overcome by strengths in other components (e.g. strong coaching can compensate for weak training; strong organization drivers can compensate for weak leadership drivers).

Implementation Teams

The identification of *Implementation Teams* answers the question: Who does the work of implementation. Who will assure practitioners and organizations are ready? Who will help organizations be supportive? Who will help change systems to facilitate the new ways of work embodied in any innovation?

The Active Implementation Frameworks used by skilled Implementation Teams provide ways to increase the likelihood that the good outcomes achieved in well-controlled studies can be reproduced in the complex conditions that exist in human services and society. Implementation Teams do not have to wait for readiness; they can help create readiness by using *Implementation Stages* and *Implementation Drivers*. Implementation Teams do not have to wait for a champion to appear; they can help organization and system leaders change to provide more hospitable environments for effective innovations and for necessary implementation supports. An Active Implementation Team "recreates a complex, causally ambiguous set of routines in new settings and keeps it functioning. The [Implementation Team] gradually hones its ability to manage such a process through experience and repetition." (Winter & Szulanski, 2001, p. 741).

An Implementation Team is not just a name for a group. Implementation Team members have the knowledge, skills, and abilities to help practitioners and staff actually make full and effective uses of the innovations enabled by policy. This capacity to implement with fidelity and good outcomes is essential to the practice-organization-system change process. If the policies or innovations are not being used as intended, or are being used as intended but not producing desired outcomes, those implementation and innovation issues need to be resolved at the practice level before asking the executive leadership to intervene in how the system functions. Given the competence of Implementation Team members, their concerns have credibility with an executive management team and the leaders will have sufficient information and confidence to change the system to better support improved outcomes.

Improvement Cycles

The goal of using Improvement Cycles is to create organizations and systems that "are able to learn from their own experience and to modify their structure and design to reflect what they have learned" (Morgan & Ramirez, 1983, p. 4). Active Implementation relies upon two improvement cycles: the plan-do-study-act (PDSA) cycle and usability testing. Essentially, the improvement cycles in implementation work are based on the plan-do-study-act (PDSA) cycle developed by Bell Labs in the 1920s to improve quality and reduce errors in design and manufacturing (De Feo & Barnard, 2005; Shewhart, 1925). The PDSA cycle has been used successfully in many applications in human services

(Joyce & Showers, 2002; Varkey, Reller, & Resar, 2007; Weick, Sutcliffe, & Obstfeld, 1999).

In implementation practice, innovative ways of work have to be established in the context of organizations and systems fully engaged in the current/old ways of work. Thus, implementation capacity is developed by getting started and using the improvement cycles to get better by reducing and eliminating errors while establishing new ways of work related to the innovation and improved outcomes.

Enabling Change

Part of the learning comes from directors and managers soliciting, receiving, and responding to feedback from Implementation Team members and practitioners regarding barriers and facilitators to implementation. In successful system change efforts, executive management teams frequently (at least monthly) hear about what is helping or hindering efforts to make full and effective use of evidence-based programs at the practice level. This is called practice-policy communication where the outcomes of decisions at the practice level are reported directly to the decision makers at the policy level (Fixsen, Blase, Metz, & Van Dyke, 2013). The information may consist of descriptions of experiences and include data collected with reasonable precision. The use of the practice-policy communication helps to create the ability of the system to monitor and question the context in which it is operating and to question the rules that underlie its own operation. The system has the capacity to search for errors and faulty operating assumptions, the capacity to learn from them, and the ability to make needed changes to improve intended outcomes (Castro Lopes et al., 2016).

Conclusion

The complexity of interaction-based innovations in human services is not a reason to give up. We now know that Active Implementation is essential to making it happen in human services. When human service systems find functions that are important (e.g. accounting for funding, assuring access to information technologies), they develop an infrastructure to support those functions. An infrastructure consisting of linked Implementation Teams is essential to effective uses of innovations on a socially significant scale. Developing implementation capacity is essential to achieving the goals of human services and purposefully producing socially significant outcomes.

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