Am J Community Psychol (2012) 50:481–496
DOI 10.1007/s10464-012-9521-y

ORIGINAL PAPER

# Practical Implementation Science: Developing and Piloting the Quality Implementation Tool

**Duncan C. Meyers · Jason Katz · Victoria Chien · Abraham Wandersman · Jonathan P. Scaccia · Annie Wright**

Published online: 23 May 2012


**Abstract** According to the Interactive Systems Framework for Dissemination and Implementation, implementation is a major mechanism and concern in bridging research and practice. The growing number of implementation frameworks need to be synthesized and translated so that the science and practice of quality implementation can be furthered. In this article, we: (1) use the synthesis of frameworks developed by Meyers et al. (Am J Commun Psychol, 2012) and translate the results into a practical implementation science tool to use for improving quality of implementation (i.e., the Quality Implementation Tool; QIT), and (2) present some of the benefits and limitations of the tool by describing how the QIT was implemented in two different pilot projects. We discuss how the QIT can be used to guide collaborative planning, monitoring, and evaluation of how an innovation is implemented.

**Keywords** Implementation · Knowledge utilization · Practical implementation science · Implementation tool · Interactive Systems Framework

## Introduction

The science of putting ideas into action—the science of implementation—has progressed rapidly in recent years (e.g., the development of a journal "Implementation Science", annual National Institutes of Health Conferences on the Science of Implementation and Dissemination). Evidence linking implementation to positive outcomes underscores its importance (Durlak and DuPre 2008), and implementation has received heightened attention as a mechanism to lessen the persistent gap between research and practice (e.g., Fixsen et al. 2005; Wandersman et al. 2008). Empirical support for the important role of implementation suggests that if evidence-based programs are not implemented with quality, they are not likely to result in the same outcomes that were observed in efficacy and effectiveness studies (e.g., Dubois et al. 2002; Durlak and DuPre 2008; Gottfredson and Gottfredson 2002; Smith et al. 2004). Simply put, if we want to achieve outcomes, we have to be able to implement with quality.

Narrowing the gap between implementation in research settings and implementation of programs in everyday practice is an endeavor that can impact diverse fields of study. The purpose of this article is to discuss a tool called the Quality Implementation Tool (QIT); it was developed and piloted to assist stakeholders in communities/organizations in their efforts to implement with quality. The content of this tool was derived from the Quality Implementation Framework, which is a synthesis of 25 implementation frameworks (Meyers et al. 2012). The Quality Implementation Framework helped us determine the components of quality implementation. To help inform theory and action regarding who needs to work together to build the capacity to implement with quality, we used the interactive systems framework for dissemination and implementation (ISF) (Wandersman et al. 2008). The ISF helped us put the QIT in context including considerations for practitioners, funders, and researchers/evaluators. This article will describe how we have deepened the ISF emphasis on implementation in our on-going efforts to promote quality implementation. To achieve this purpose, we will (1) define *quality implementation*; (2) discuss the role of quality implementation in the ISF; (3) describe the

D. C. Meyers (✉) · J. Katz · V. Chien · A. Wandersman · J. P. Scaccia · A. Wright
University of South Carolina, Columbia, SC, USA
e-mail: meyersd@mailbox.sc.edu

development of the QIT, which assists practitioners and those providing support to practitioners in implementing innovations with quality, and (4) describe two different pilot uses of the QIT in two human services projects.

## Defining Quality Implementation

We define *quality implementation* as putting an innovation into practice in a way that meets the necessary standards to achieve the innovation's desired outcomes. Historically, definitions of quality implementation have been heavily focused on the implementation of a program's essential core components—so much so that some have stated it is synonymous with the terms "adherence" and "integrity" (O'Donnell 2008). The concept of *quality characteristics*, as defined by the International Organization for Standardization (ISO), provides a foundation for our definition of quality implementation. ISO defines quality as a set of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (ISO/IEC 1998). This definition of quality implementation relies on three theoretical assumptions about innovations (defined as ideas, practices, programs, or technologies that are perceived as new by an individual or organization) and their use that make it distinct from constructs such as program adherence and program integrity:

1. Innovations need to be well defined and include specified standards for implementation (e.g., active ingredients, core components, critical features, essential elements). Durlak (1998) hypothesizes that specifying such standards in clear operational terms is a method for improving implementation.
2. The process of putting an innovation into practice includes monitoring and evaluating activities. Without monitoring and evaluating, determining the extent to which necessary standards are being met or whether desired outcomes are being achieved would be impossible. Quality implementation explicitly includes monitoring and evaluating the implementation process to ensure that the innovation is being put into practice as intended and to determine the extent to which desired outcomes are achieved. Our definition of quality implementation consists of the "what" (e.g., essential elements of the innovation are delivered) and the "how" of implementation (e.g., monitoring of implementation to increase the likelihood that intended outcomes are achieved).
3. Innovations often need to be adapted or modified to fit the host setting within which they will be implemented. While it is important that core components of innovations should not be modified (otherwise integrity of the innovation is jeopardized), there is increasing recognition in the implementation science literature that non-essential components of an innovation often need to be adapted to promote fit of the innovation with contextual features (e.g., the level of available resources, needs, and/or preferences of the host organization/community) (Castro et al. 2010; Harshbarger et al. 2006). Due to the apparent frequency with which such adjustments are made, an increasing recognition has emerged regarding the importance of documenting how innovations are adapted. This underscores the importance of monitoring implementation, since documenting exactly how an innovation is being adapted is critical so it can be studied systematically (Durlak 2010).

A growing number of reviews and syntheses of the implementation science literature have contributed to theoretical advances in the understanding of implementation (e.g., Durlak and DuPre 2008; Fixsen et al. 2005; O'Donnell 2008). Several authors have developed frameworks to help describe the complex nature of the implementation process (e.g., Fixsen et al. 2005; Hall and Hord 2010; Klein and Sorra 1996; Rogers 2003; Wandersman et al. 2008). The frameworks can serve as valuable ideas for synthesizing and translating complicated issues that can occur during implementation.

One of the frameworks—the ISF (Wandersman et al. 2008)—draws attention to the interactions between multiple systems that collaboratively build the capacity needed to disseminate and implement an innovation with quality. The ISF's focus on capacity is important, since many theorists posit that understanding a organization/community's capacity to implement high quality innovations is central to addressing the gap between research and practice (e.g., Goodman et al. 1998; Miller and Shinn 2005; Schorr 2003; Wandersman 2003).

## The Role of Implementation in the ISF

The ISF operationalizes the role of three interacting systems in the dissemination and implementation process. First, the *Synthesis and Translation System* distills scientific, theoretical, and/or practice-based information about innovations and translates it to user-friendly formats (e.g., interventions, manuals, guides, strategies, worksheets). Synthesizing and translating scientific knowledge is important for ensuring that innovations are empirically-grounded; but these science-based innovations need to be put into practice. This is the function of the *Delivery System* (e.g., schools, community-based organizations). The individuals, organizations, and communities in the

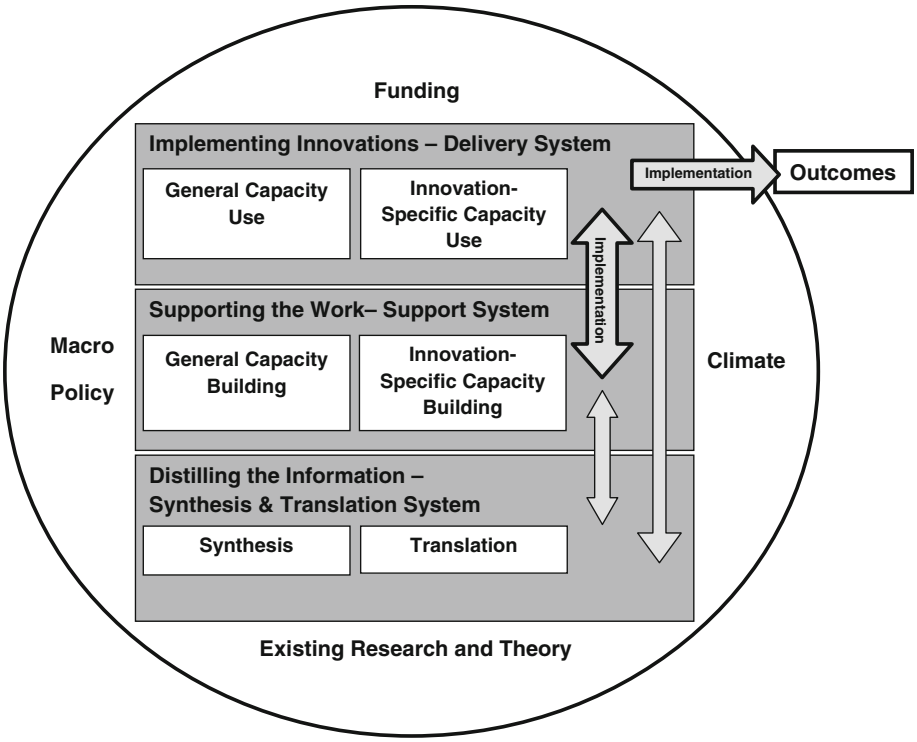


**Fig. 1** Enhancements to the Interactive Systems Framework for Dissemination and Implementation. The addition of arrows labeled with "implementation" suggest that (a) quality implementation enacted by the Support System is important for building capacity in the Delivery System and (b) quality implementation by the Delivery System is essential for achieving outcomes

Delivery System carry out the necessary activities on the front lines to utilize the evidence-based innovations from the Synthesis and Translation System.

To increase the likelihood that innovation use will lead to desired outcomes, additional support is provided by the middle system in the ISF—the *Support System*. The support functions performed by this system are intended to build two types of capacities that are needed to use the innovation effectively: (1) *innovation-specific capacity*—the necessary knowledge, skills, and motivation which are required for effective use of the innovation (e.g., training on the proper use of an innovation, technical assistance for sustaining effective use of an innovation); and (2) *general capacity*—which relates to effective structural and functional factors (e.g., infrastructure, general level of organizational functioning) (Flaspohler et al. 2008).

A major aim of this article is to articulate the role of implementation in the ISF. The "location" of implementation can be conceptualized in at least two places: the bi-directional arrow that links the Delivery System and the Support System and the arrow that links the Delivery System with outcomes (see Fig. 1). In other words, quality implementation enacted by the Support System is important for building capacity in the Delivery System, and quality implementation by the Delivery System is essential for achieving outcomes.[1]

Another aim of this article is to articulate who is accountable for quality implementation in the ISF. We believe that the interactive nature of the ISF extends to accountability, and each system can and should play a meaningful role when putting innovations into practice. As such, the three systems in the ISF are "mutually accountable" for achieving the necessary standards to reach the innovation's desired outcomes. One key strategy for achieving necessary standards is through a team-based approach in which implementation teams—which will be described in more detail later in this article—help foster quality implementation. Implementation teams should be comprised of members who are very knowledgeable about the innovation and who have knowledge and expertise related to implementation practices and their use (Fixsen et al. 2005). In the context of the ISF, members of these implementation teams should include members of the Support System (e.g., outside consultants or implementation specialists who are brought in to help inform and prepare members of the Delivery System to effectively use the innovation) as well as members of the Delivery System (e.g., administrators or other staff who have decision-making power and can help to enact contextual changes

[1] We note that implementation could additionally be included in the ISF model within the bi-directional arrow between the Support System and the Synthesis and Translation System (e.g., collaboration between developers of innovations and members of the Support System to develop high quality training and/or mechanisms for TA). We recognize that there are factors beyond what we discuss in this article that affect implementation but for the purposes of this tool we focus on more proximal factors.

that foster use of the innovation). So even though the Delivery System is the end-user of an innovation, it is not their responsibility alone to ensure that it is used with quality. A Support System should be in place to help build the capacity of the Delivery System.

## The Quality Implementation Tool: A Translation of the Results of an Implementation Framework Review

Practical implementation science is a user-friendly translation of implementation science results. A workgroup (the article's co-authors) sought to develop a user-friendly tool that would assist practitioners and support providers in implementing innovations with quality. Specifically, we developed and piloted a tool called the QIT. The tool's components were identified through an extensive literature review of implementation frameworks. The review helped organize this knowledge and identified critical steps that have been suggested by multiple sources to be related to implementing innovations in organizations/communities (see Meyers et al. 2012). Using these critical steps as a foundation, we created an implementation tool that, when used appropriately, would enhance the likelihood that desired outcomes are achieved. The tool can be applied to planning for quality implementation, real-time monitoring of implementation, and evaluating the extent to which the innovation was implemented with quality. The tool itself is an example of a translation of the implementation science literature.

We initially designed the QIT for use within Getting To Outcomes® (GTO®[2]) (Wandersman et al. 2000), a comprehensive ten-step results-based approach to accountability. The ten GTO steps are: *assessing needs and resources* (GTO Step 1); *setting goals and desired outcomes* (GTO Step 2); *selecting an evidence-based (or promising) innovation* (GTO Step 3); *assessing innovation fit* (GTO Step 4); *assessing organizational/communitywide capacity for an innovation* (GTO Step 5); *planning* (GTO Step 6); *implementation and process evaluation* (GTO Step 7); *outcome evaluation* (GTO Step 8); *continuous quality improvement* (GTO Step 9); and *sustainability* (GTO Step 10). With the QIT's explicit focus on the implementation process, it is designed to add value to the GTO approach by adding strategies which were previously not included in Step 7. Although the QIT does not need to be used within GTO specifically, we recommend the use of the tool within a comprehensive programming framework like GTO.

Given the intended use of the QIT within the context of GTO, when selecting which critical steps would comprise the tool we omitted those that were redundant with any steps in the GTO process (e.g., needs assessment, fit assessment). Conceptually, many of the redundancies were related to pre-implementation processes that would take place in the selection and adoption of an innovation. The non-redundant critical steps are the six components of quality implementation that comprise the QIT. Each component has action steps (see Table 1).

### Features of the QIT

The tool itself is in a worksheet format that groups each action step with the component of quality implementation that it relates to. Each action step is listed as a row on the worksheet, and this format allows users to write detailed information next to each of these steps. Each row is divided into three columns, since each action step has three distinct purposes in the implementation process: (1) planning for quality implementation, (2) real-time monitoring of implementation, and (3) evaluating the extent to which the innovation was implemented with quality. The inclusion of these columns aligns with our definition of quality implementation which explicitly includes monitoring and evaluating the implementation process. In sum, the QIT worksheet has rows for each action step and three separate columns that include space to write how the action step would be planned, monitored, and evaluated.

The QIT is designed to be completed through a collaborative process between members of the Support and Delivery Systems. Support System members should have knowledge and expertise about the innovation, implementation science, and process evaluation so they can guide the implementation effort effectively. In addition to knowledge about the innovation, members of the Delivery System should have contextual knowledge about the organization/community and decision-making power and influence within this setting. During this collaborative process, a decision may be made to omit a particular action step. The consultation role fulfilled by members of the Support System can ensure that the omission of any action step is a strategic decision arrived at by careful discussion and should not diminish success of the innovation. Below, we describe the specific components and actions steps that are associated with our definition of quality implementation.

### Component 1: Develop An Implementation Team

#### *Action Step 1.1: Decide on the Structure of the Team Overseeing Implementation (e.g., Steering Committee, Advisory Board, Community Coalition, Workgroups, etc.)*

The overarching goal of the implementation team is to help inform, prepare, and support members of the Delivery

[2] Getting To Outcomes® and GTO® are registered by the University of South Carolina and RAND.

**Table 1** Components of quality implementation and their associated action steps

| Component | Action steps |
|---|---|
| 1. Develop an implementation team | 1.1 Decide on structure of team overseeing implementation (e.g., steering committee, advisory board, community coalition, workgroups, etc.) |
| | 1.2 Identify an implementation team leader |
| | 1.3 Identify and recruit content area specialists as team members |
| | 1.4 Identify and recruit other agencies and/or community members such as family members, youth, clergy, and business leaders as team members |
| | 1.5 Assign team members roles, processes, and responsibilities |
| 2. Foster supportive organizational/ communitywide climate and conditions | 2.1 Identify and foster a relationship with a champion for the innovation |
| | 2.2 Communicate the perceived need for the innovation within the organization/community |
| | 2.3 Communicate the perceived benefit of the innovation within the organization/community |
| | 2.4 Establish practices that counterbalance stakeholder resistance to change |
| | 2.5 Create policies that enhance accountability |
| | 2.6 Create policies that foster shared decision-making and effective communication |
| | 2.7 Ensure that the program has adequate administrative support |
| 3. Develop an implementation plan | 3.1 List tasks required for implementation |
| | 3.2 Establish a timeline for implementation tasks |
| | 3.3 Assign implementation tasks to specific stakeholders |
| 4. Receive training and technical assistance (TA) | 4.1 Determine specific needs for training and/or TA |
| | 4.2 Identify and foster relationship with a trainer(s) and/or TA provider(s) |
| | 4.3 Ensure that trainer(s) and/or TA provider(s) have sufficient knowledge about the organization/community's needs and resources |
| | 4.4 Ensure that trainer(s) and/or TA provider(s) have sufficient knowledge about the organization/community's goals and objectives |
| | 4.5 Work with TA providers to implement the innovation |
| 5. Practitioner–developer collaboration in implementation | 5.1 Collaborate with expert developers (e.g., researchers) about factors impacting quality of implementation in the organization/community |
| | 5.2 Engage in problem solving |
| 6. Evaluate the effectiveness of the implementation | 6.1 Measure *fidelity* of implementation (i.e., adherence, integrity) |
| | 6.2 Measure *dosage* of the innovation—how much of the innovation was actually delivered |
| | 6.3 Measure *quality of the innovation's delivery*—qualitative aspects of program delivery (e.g., implementer enthusiasm, leader preparedness, global estimates of session effectiveness, leader attitudes towards the innovation) |
| | 6.4 Measure *participant responsiveness* to the implementation process—degree to which participants are engaged in the activities and content of the innovation |
| | 6.5 Measure degree of *program differentiation*—extent to which the targeted innovation differs from other innovations in the organization/community |
| | 6.6 Measure *program reach*—extent to which the innovation is delivered to the people it was designed to reach |
| | 6.7 Document all *adaptations* that are made to the innovation—extent to which adjustments were made to the original innovation or program in order to fit the host setting's needs, resources, preferences, or other important characteristics |

System to effectively use the innovation. The structure of the implementation team will vary according to each organization/community's broader infrastructure and operations. In some cases, an implementation team may be integrated into an organization/community's ongoing committees that drive or oversee services and operations (Forsner et al. 2010). The resulting leadership structure overseeing implementation will play a key role in supporting quality implementation (Fixsen et al. 2001).

### *Action Step 1.2: Identify an Implementation Team Leader*

A leader (or leadership structure with multiple members) is needed to facilitate group decision-making processes and problem-solving in the implementation team. Unique organizational factors should be considered in selecting leadership for implementation (Durlak and DuPre 2008; Kumpfer et al. 1993). The leader of the implementation team should have experience with the innovation and an

adequate level of working knowledge related to implementing innovations effectively. Such individuals should understand the contextual influences in the setting and may also be well acquainted with members of that setting. Another option for implementation team leadership is to consider hiring an implementation coordinator who will remain a member of the organization/community (Semel et al. 2010).

### *Action Step 1.3: Identify and Recruit Content Area Specialists as Team Members*

Implementation teams are specialized groups who provide assistance with both practical and technical aspects of the innovation. These functions require individuals who are knowledgeable about content areas that are relevant to the innovation and its use. Members of the team may be recruited from within an organization/community, or they may be external consultants who are recruited to provide support. If multiple content areas are relevant—which is often the case for systems-level implementation contexts—an array of content area specialists may be needed (Durlak and DuPre 2008). If members of the Delivery System are recruited for the implementation team (e.g., practitioners who have experience with the innovation and are able to use it skillfully), they need to acquire specialized skills and knowledge regarding effective implementation so they can help to support effective use of the innovation. Including members of the Delivery System in implementation teams is essential to infusing local "practice-based" knowledge and expertise into the processes used by the Support System (see Wandersman et al. 2012).

### *Action Step 1.4: Identify and Recruit Other Agencies and/or Community Members such as Family Members, Youth, Clergy, and Business Leaders as Team Members (for Community-Level Innovations)*

Involvement of community members on the implementation team can help to ensure that this team has an adequate level of knowledge about a community's needs and capacities. If the team has access to such knowledge they can tailor the implementation process in such a way that accounts for these important factors. Having local representation on the team can also serve to generate local buy-in. Including representatives from different local agencies can foster strategic collaboration across multiple service systems and enhance implementation feasibility by providing a platform for pooling resources and avoiding unnecessary duplication of services (Durlak and DuPre 2008).

### *Action Step 1.5: Assign Team Members Roles, Processes, and Responsibilities*

Part of the team-based approach to implementation should involve matching specific tasks and roles with implementation team members' unique talents and expertise. Having knowledge about the innovation and understanding implementation science helps implementation teams understand the types of roles that are needed. The roles and responsibilities of each team member should be documented. Periodic review of documented roles, processes, and responsibilities can be important for accountability and for selecting quality improvement foci (Fixsen et al. 2005; Voss 1992). Roles that are assigned to implementation team members may relate to a wide variety of tasks, including training, technical assistance, advocating for the innovation, monitoring and evaluation, logistical support, developing strategies to overcome implementation barriers, etc.

## Component 2: Foster Supportive Organizational/Communitywide Climate and Conditions

### *Action Step 2.1: Identify and Foster a Relationship with a Champion for the Innovation*

A program champion is typically regarded as a local system expert that has the ability to mobilize and encourage potential innovation users. Champions are willing to innovate, yet they may not emerge until implementation has yielded visible outcomes. It is useful to identify candidate champions early on as part of overall planning for implementation (Durlak and DuPre 2008; Fixsen et al. 2005; Greenhalgh et al. 2004; Stith et al. 2006). The role of the champion for the innovation is different from the implementation team leader (described in Action Step 1.2). The champion's role is to foster buy-in and support for the innovation and its proper use in the organization/community; the role of the team leader is to manage the implementation team. An example of a champion might be a police chief, a school superintendent, or a city council person who becomes invested in the program and advocates for it.

### *Action Step 2.2: Communicate the Perceived Need for the Innovation Within the Organization/Community*

It is unlikely that implementation efforts will be successful if an organization/community's staff, constituents, and other stakeholders have doubts about whether the innovation is even needed. Efforts to increase stakeholders' buy-in may be warranted if there are low levels of perceived need (Fixsen et al. 2005; Greenhalgh et al. 2004; Hall and

Hord 2010; Stith et al. 2006). Enhancing the perceived need for an innovation can be addressed when end-users are introduced to the innovation (e.g., during training) and throughout the lifespan of an innovation's use.

*Action Step 2.3: Communicate the Perceived Benefit of the Innovation Within the Organization/Community*

It is unlikely that implementation efforts will be successful if an organization/community's staff, constituents, and other stakeholders do not agree that the innovation will provide value above current processes. Rogers (2003) addressed several innovation characteristics that explain the extent to which stakeholders perceive benefits associated with a given innovation, including the relative advantage of an innovation and its compatibility with the beliefs and values of end-users.

*Action Step 2.4: Establish Practices that Counterbalance Stakeholder Resistance to Change*

Resistance to change may be addressed through the establishment of new ways of "doing things" in the organization/community that provide opportunities for stakeholder participation and a sense of ownership over the innovation (Hall and Hord 2010; Lehman et al. 2002). An example of providing an opportunity for stakeholder participation is including Delivery System members in organizational/community decisions about how the implementation process is designed to unfold (Glisson and Schoenwald 2005). In addition, removing identified barriers that make implementation more difficult for practitioners may increase the likelihood that the innovation can be used with greater ease (Feldstein and Glasgow 2008). Input from these end-users on their experiences using the innovation can shed light on ways to enhance ease of use and minimize resistance to change (Hall and Hord 2010).

*Action Step 2.5: Create Policies that Enhance Accountability*

Policies can serve as environmental strategies that change the host setting so that it is better able to support the innovation. Policies related to encouraging use of an innovation often involve incentives for use of the innovation and disincentives for non-use of the innovation (Fixsen et al. 2005; Hall and Hord 2010; Raghavan et al. 2008; Walker and Koroloff 2007). An example of a policy to increase accountability is to formally incorporate use of the innovation into employee evaluations. The policy (a new rule formalized in writing) would establish positive consequences for using the innovation and negative consequences for non-use of the innovation. When such consequences are imposed, end-users are held accountable for whether or not they use the innovation.

*Action Step 2.6: Create Policies that Foster Shared Decision-Making and Effective Communication*

Damschroder et al. (2009) compared 19 published implementation theories and found that formal communication characterized by collaboration, open feedback and review, and clear communication of mission and goals all contributed to "effective implementation" (p. 8). Policies are a way to formalize such communication practices in an organization/community. Shared decision-making between stakeholders can be facilitated by similar procedures that relate to the way feedback about innovation use and process improvement is provided and received (Durlak and DuPre 2008; Fixsen et al. 2005; Greenhalgh et al. 2004; Stith et al. 2006).

*Action Step 2.7: Ensure that the Innovation has Adequate Administrative Support*

Implementation quality can be advanced through the commitment and buy-in of an organization/community's key decision-makers and executive authorities (Durlak and DuPre 2008; Fixsen et al. 2005; Greenhalgh et al. 2004; Stith et al. 2006). Insufficient administrative support may have unfortunate repercussions that could radiate to multiple levels of the organization/community's workforce. In addition, the host organization/community should establish a "facilitative administrative" structure (Fixsen et al. 2005) comprised of trained and committed mid-level supervisors, staff, and associated resources. These facilitative administrative structures provide guidance for decision making and ensure that adequate resources are present for sustaining an innovation's core components over the long term.

Component 3: Develop an Implementation Plan

*Action Step 3.1: List Specific Tasks Required for Implementation*

Tasks refer to steps needed to implement an innovation with quality. Members of the implementation team will need to rely on their knowledge about the innovation and knowledge about effective implementation to determine the tasks that are needed. Listing these tasks allows the implementation team to get a sense of what needs to be done so they can start to develop timelines and delegate tasks (see Action Steps 3.2 and 3.3). During the initial stages of implementation, tasks may be related to making sure necessary structural supports are in place (e.g., ensure adequate funding streams are available, enact supportive

policies, acquire necessary technology) (Fixsen et al. 2005) and that foreseeable barriers to implementation are minimized (e.g., sign contracts outlining the role of collaborating stakeholders, modify documentation requirements to better support innovation use, amend job descriptions and performance evaluations to reinforce use of the innovation) (Rapp et al. 2010). The documentation and monitoring of tasks can serve as an important part of a process evaluation.

*Action Step 3.2: Establish a Timeline for Implementation Tasks*

Timelines should be selected for each implementation task. Timelines for implementation tasks should be considered in relation to the timeline for the overall project and its desired outcomes (Durlak and DuPre 2008; Fixsen et al. 2005; Greenhalgh et al. 2004; Stith et al. 2006).

*Action Step 3.3: Assign Implementation Tasks to Specific Stakeholders*

Task assignment accompanied with monitoring of task completion is an important step towards ensuring that implementation is on the right track (Durlak and DuPre 2008; Fixsen et al. 2005; Greenhalgh et al. 2004; Stith et al. 2006). Assignment of tasks to specific stakeholders can serve as a basis for orientation, training, and employee performance evaluations (Damschroder et al. 2009).

Component 4: Receive Training and Technical Assistance (TA)

*Action Step 4.1: Determine Specific Needs for Training and/or TA*

It is useful to strategically and proactively define training/TA needs prior to the onset of implementation. These needs should be defined within a comprehensive programming framework (Wandersman et al. 2012). The initial assessment of training/TA needs can serve as a basis for consistent monitoring of innovation-related training/TA. Wandersman et al. (2012) provide several tools that can be used for an assessment of training needs including: (1) an organizational analysis to collect information about the host setting (McGehee and Thayer 1961); (2) a task analysis to identify the specific knowledge, skills, and attitudes that are to be cultivated through training (Carnevale et al. 1990); (3) a person analysis to identify the characteristics of training participants (Noe 2010), and; (4) a value analysis to ensure that the potential benefits of the training outweigh its costs (Bramley and Kitson 1994). In addition, the South Carolina Campaign to Prevent Teen Pregnancy has developed TA assessment tools (Duffy et al. 2012).

*Action Step 4.2: Identify and Foster a Relationship with Trainer(s) and/or TA Provider(s)*

Communication and relationship-building between Delivery System stakeholders and trainers/TA providers can serve as an effective implementation support resource. TA involves on-the-job support that is intended to maintain the self-efficacy and skill proficiency from training and/or initial innovation use (Durlak and DuPre 2008). Effective trainers and TA providers support practitioners in adhering to defined standards of an innovation and/or facilitate services within a specified delivery model (Greenberg et al. 2005; Stith et al. 2006; Walker and Koroloff 2007).

*Action Step 4.3: Ensure that Trainer(s) and/or TA Provider(s) Have Sufficient Knowledge About the Organization/Community's Needs and Resources*

It is crucial that a trainer/TA provider has an understanding of needs and resources in the host organization/community (Cherniss 2000; Thomas et al. 1997). When feasible, it is useful to have the trainer/TA provider spend onsite time in the organization and/or community prior to implementation. In other cases, it may be more cost-effective to use technology (e.g., telephone meetings or webinars) to communicate with the trainer/TA provider as a basis for orienting them to the community's needs and resources.

*Action Step 4.4: Ensure That Trainer(s) and/or TA Provider(s) Have Sufficient Knowledge About the Organization/Community's Goals and Objectives*

Along with information about needs and resources, the trainer/TA provider should be sufficiently knowledgeable about the end-user who will implement the innovation (including the characteristics of populations with which they work, and the desired change) (Cherniss 2000; Thomas et al. 1997). A failure to clearly communicate goals and objectives to trainers/TA providers can deter implementation and weaken quality.

*Action Step 4.5: Work with TA Providers to Implement the Innovation*

It is helpful for TA providers to assist with and provide feedback about implementation. According to Wandersman et al. (2012), "Proactive TA is a strategic approach to bringing specific knowledge and skills to recipients, and then helping recipients to adopt and use the information and skills effectively. Proactive TA is both anticipatory and responsive to recipients' needs" (p. 11). Proactive TA involves ongoing assessment of progress and provision of recommendations for improvement (Wandersman et al.

2012). Scheduled site visits may be utilized to enable the Support System to monitor implementation progress while also providing practitioners in the Delivery System an opportunity to access guidance (Fagan et al. 2008; Mihalic et al. 2004; Spoth et al. 2011).

## Component 5: Practitioner–Developer Collaboration in Implementation

### *Action Step 5.1: Collaborate with Expert Developers (e.g., Researchers) About Factors Impacting Quality of Implementation in the Organization/Community*

Particularly when a program is developed outside of the organization/community (e.g., by a researcher in another state), it is useful to have information that goes from the community to the developer or another expert on the program, and vice versa (Greenhalgh et al. 2004; Wandersman et al. 2008). Information which flows from the community to the developer can serve as a basis for advancing knowledge about ecologically effective implementation (Greenberg et al. 2005). While implementation could be promoted through collaboration with innovation developers, we realize that challenges to such a collaboration increase when the innovation goes to scale.

### *Action Step 5.2: Engage in Problem Solving*

When problems arise within the implementation process, the Support System can assist the community in identifying strategies to work through these difficulties. For significant problems that require modifications to the implementation process, TA providers can help balance the possible need for adaptation while maintaining integrity to the innovation's defined standards (e.g., core components) (Castro et al. 2010; Dusenbury et al. 2003).

## Component 6: Evaluate the Effectiveness of the Implementation

The definition of quality implementation presented in this article includes evaluating the process of implementation as a necessary component. If the process of implementation is not evaluated, the extent to which implementation meets the defined standards to achieve desired outcomes would be unknown. The following eight action steps each represent an aspect of program delivery that has been identified to be important to measure when evaluating the implementation process (Dane and Schneider 1998; Durlak and DuPre 2008).

### *Action Step 6.1: Measure Fidelity of Implementation*

In line with Durlak and DuPre (2008), we conceptualize fidelity as *adherence* or *integrity* (i.e., the extent to which an innovation was put into practice as intended). We recognize that other definitions of fidelity have been provided in the literature (e.g., Dusenbury et al. 2003). To assess fidelity, innovations need to have specific standards such as core components or a specified curriculum. These standards form the basis for what will be measured and are fundamental for constructing a fidelity instrument. If an innovation does not have established core components or a specified curriculum, theoretical underpinnings that underlie the innovation (e.g., conceptual frameworks) should be used in conjunction with consultation from content experts to develop them (Mowbray et al. 2003). The next step is for researchers/evaluators to develop operational definitions for the components along with objective and measurable indicators that can serve as sources of data (Teague et al. 1998). It is recommended that multiple methods and multiple sources be used to establish fidelity (Mowbray et al. 2003). Types of fidelity measures that have been used in multi-method fidelity assessments include a priori checklists (e.g., Saunders et al. 2006), rating scales that provide a range of variation from high to low fidelity (e.g., Hall and Hord 2010), record reviews (Hernandez et al. 2001), and qualitative methods such as semi-structured interviews that are transcribed and coded (e.g., Mills and Ragan 2000). See Mowbray et al. (2003) for an overview of developing, measuring, and validating fidelity criteria.

### *Action Step 6.2: Measure the Dosage of the Innovation*

Dosage—which may be referred to as duration—relates to how much of the innovation was actually delivered. Dosage can be measured through time, such as the number, length, or frequency of sessions implemented of a curriculum (O'Donnell 2008).

### *Action Step 6.3: Measure the Quality of the Innovation's Delivery*

Quality of delivery refers to a measure of qualitative aspects of program delivery (e.g., implementer enthusiasm, leader preparedness, global estimates of session effectiveness, leader attitudes towards the innovation) (Dane and Schneider 1998). This involves whether the innovation is delivered in a manner that is responsive and sensitive to community/organizational needs, and the extent to which it generalizes innovation-specific knowledge to participants' previous or general knowledge (Domitrovich et al. 2010).

*Action Step 6.4: Measure Participant Responsiveness to the Implementation Process*

Participant responsiveness may be referred to as participation, engagement, or involvement. It is a measure of the degree to which participants are engaged in the activities and content of the innovation (O'Donnell 2008). An important facet is the extent to which the innovation holds the interest or attention of participants. Participant responsiveness is an important focus for measurement of implementation because the delivery of an innovation is not sufficient for impacting behavioral change; such change is affected by a target group's processing (or uptake) of the innovation's content (Spoth et al. 2007).

*Action Step 6.5: Measure Degree of Program Differentiation*

Program differentiation—which may also be called program uniqueness (Durlak 2010)—refers to the extent to which the selected innovation differs from other innovations in the organization/community. An assessment of program differentiation is an important precursor to being able to attribute the attainment or non-attainment of effects to the implemented program (vis-à-vis other programs) (Dane and Schneider 1998). This aspect allows the Support System to determine whether critical features of the innovation that distinguish it from other activities are present or absent during implementation (O'Donnell 2008). In a policy context, information about program differentiation may be useful as part of decision-making about scale-up of a pilot innovation to other sites. See Hansen and McNeal (1999), and Hogue et al. (2005) for examples of measuring program differentiation.

*Action Step 6.6: Measure Program Reach*

Program reach refers to the proportion and representativeness of the target population (e.g., end-users of the innovation) that accepts and ultimately uses the innovation (Durlak 2010). For example, the actual number of individuals in the target group reached, divided by the total number of individuals in the target population provides an index of program reach (Dane and Schneider 1998).

*Action Step 6.7: Document All Adaptations That Are Made to the Innovation*

Adaptation refers to the extent to which adjustments were made to the original innovation in order to fit a setting's needs, resources, preferences, or other important characteristics. There is growing recognition that making locally-informed adaptations to non-core features of the innovation can enhance the effectiveness and fit of an innovation within a particular organization/community (e.g., Castro et al. 2010). Adaptation may be useful in enhancing cultural relevance, as well as in avoiding duplication of services (Durlak and DuPre 2008). Because of the apparent frequency of adaptation when putting innovations into practice, it is important to document the nature of changes to the original innovation so the modified innovation can be evaluated systematically (Durlak 2010).

## Piloting the QIT

In this section, we will discuss the pilot use of the QIT in two different human services projects. The background for each project will be briefly described, as well as the Delivery and Support Systems that collaboratively utilized the QIT. Due to space limitations, we will discuss only one of the action steps in the QIT (*creating policies that enhance accountability*—Action Step 2.5). We focus on this action step because it nicely illuminates the QIT in action across different settings and innovations.

In the first project, the QIT was collaboratively used to (a) plan a system to support an innovation's implementation and (b) plan how the implementation process would be evaluated. In the second project, the QIT was used to (a) plan and monitor support strategies (e.g., evidence-based training; TA) and (b) assess capacities and develop strategies to address identified capacity limitations.

### Project Setting #1: The Psychological Services Center

The first project used the QIT to support use of an innovation at a university-based Psychological Services Center (PSC). The PSC is a non-profit training and research facility that was established to provide assessment and treatment services for community members (a Delivery System). Because the PSC is committed to empirically-guided intervention and assessment, an organizational decision was made to enhance the Delivery System's protocol for measuring clinical outcomes. More specifically, this enhanced measurement protocol (i.e., the innovation) was designed to track outcomes related to both client symptomatology and therapist–client relationships. Measurement is conducted through the administration of standardized instruments (e.g., questionnaires) with established validity and reliability.

Both the targeted outcomes and the measurement instruments were selected through a democratic vote by a steering committee. This committee was comprised of key Delivery System members who were responsible for making decisions about the development of the measurement protocol. The Delivery System at the PSC consists of (1) doctoral student therapists working with clients at the

clinic, (2) university faculty supervisors who provide clinical supervision and guidance to student therapists, and (3) PSC administrators and other supportive staff (see Fig. 2). The Support System for this project consists of one person: a project facilitator. This facilitator (this article's first author) has a deep knowledge of the QIT and is a graduate student in the psychology department that houses the PSC. The facilitator's roles were to ensure that the steering committee adhered to the established planning process, to guide the committee during the planning process, and to oversee progress.

Once the steering committee designed the measurement protocol, the QIT was used to plan how to implement this protocol with quality. During this planning process, the facilitator guided the steering committee through a discussion of each of the QIT action steps. The facilitator recorded what each action step would "look like" based on what was discussed (e.g., detailing the specific tasks that would need to be completed to help foster a supportive organizational climate). Recording this information on the QIT resulted in a detailed documentation of the planning process. Also, this tool could be shared easily (e.g., sent electronically or printed). The worksheet format of the QIT organized important information related to planning, monitoring, and evaluating implementation, and was used to revise the clinic-wide strategic plan.

An example of one of the action steps that the QIT helped to plan for is *creating policies that enhance accountability*. To help heighten the extent to which Delivery System members would be held accountable for using the innovation, a decision was made that the measurement protocol would be routinized and become part of standard practice at the PSC. By incorporating the measurement protocol into PSC standard operating procedures, each student therapist is required to use the innovation when they are working with their clients. Supervisors play a key role in ensuring this accountability, since it was agreed that these faculty members would set aside time during scheduled supervision hours to provide support and monitor whether the innovation is used with quality. Utilizing policy to routinize the innovation promotes student therapists' learning and skill advancement and helps supervisors monitor therapist performance. The QIT provided a structure for the discussion while steering committee input helped establish how relevant and appropriate such policies were, whether the policies were feasible, and detailing how they would be put into practice.

The project also used the QIT to plan for evaluation of the implementation process (see Table 1 for the action steps associated with the sixth component of quality implementation—*evaluating effectiveness of implementation*). It was decided that fidelity, reach, and participant

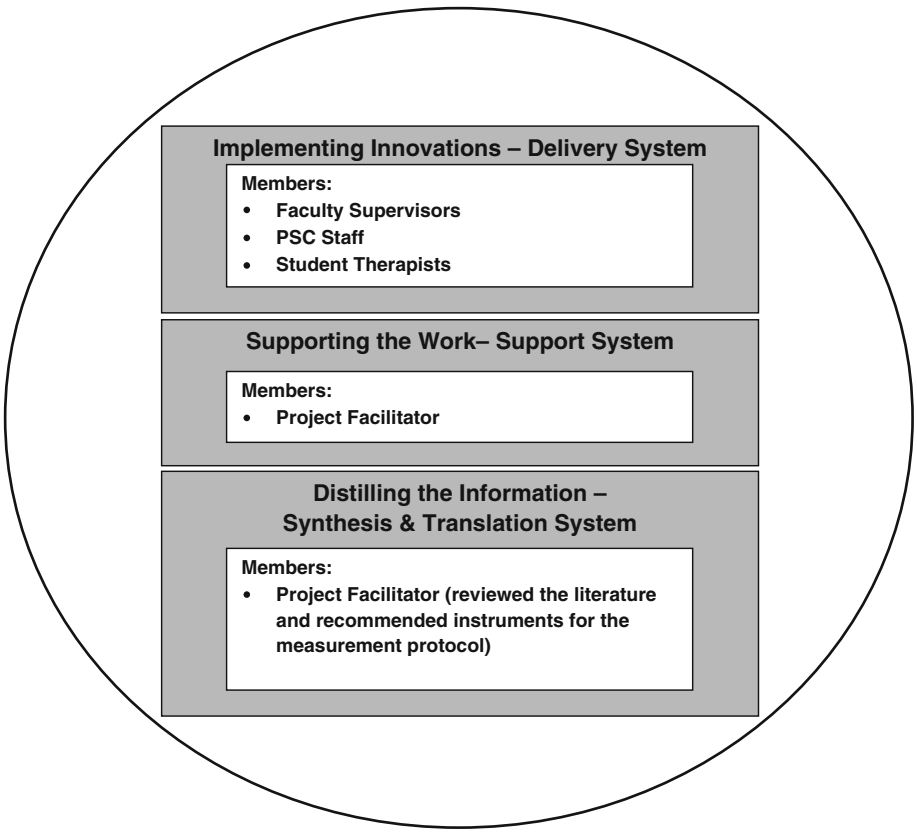


**Fig. 2** Members of the ISF systems in the PSC project

responsiveness would be evaluated, and that any adaptations would be documented. One example of how this project planned to evaluate the effectiveness of implementation—namely *program reach*—is provided here. Reach relates to the proportion and representativeness of the target population. In this case, the target population is conceptualized as the student therapists who use the innovation. Reach was operationalized as the extent to which student therapists accept and try out the innovation, measured by assessing the extent to which student therapists administer the outcome tracking measures at each of their scheduled therapy sessions. This is accomplished through basic monitoring activities (e.g., a frequency count of the instances in which therapists administer outcome tracking measures divided by the total number of sessions that the client was seen). The QIT helped frame the discussion of this action step and the facilitator was able to foster progress by encouraging the committee to complete the tool with adequate detail.

The planning of a system to support innovation use and a strategy for evaluating the implementation process were aided by use of the QIT in a few key ways. First, the QIT provided a set of tangible action steps that the steering committee could discuss. The tool primed the committee to consider strategies that can be used in the implementation process, and their locally-informed input provided the necessary details to accurately complete the tool. Second, it aided the facilitator in the consultation process since it provided a coherent structure for planning. The QIT required users to develop strategies for planning, monitoring, and evaluating implementation, and served as a means to formally document progress and group decisions.

## Project Setting #2: The MOMS Program

The second human services project that utilized the QIT is the Maternal Outreach Management Services (MOMS) program, an individualized and evidence-informed treatment protocol for pregnant, substance abusing women. The treatment protocol was developed in collaboration among administrators, clinicians, and clients at a local drug and alcohol abuse council and with university-based consultants from the University of South Carolina. The MOMS program incorporated four specific program elements: (1) A client-centered approach within a larger recovery-oriented system of care that recognizes the client as a collaborator in her own treatment and recovery planning (White 2008); (2) GTO as a method of systematically delivering client-centered assessment, treatment planning, and monitoring of recovery progress (Chinman et al. 2004); (3) Motivational Interviewing (Miller and Rollnick 2002) to work within each individual client's goals and capacities as she progresses through the ten steps of GTO, and; (4) a rewards system that is based on contingency management principles around promoting engagement in treatment and increasing participation in healthy, recovery-oriented activities.

The Delivery System, tasked with implementing the MOMS program, is comprised of staff that uses the innovation within a clinician–client relationship with program participants (see Fig. 3). The Support System includes local drug and alcohol abuse council administrators and supervising clinicians, as well as the university-based consultant team. These system members collectively designed the MOMS program and the support structures to initiate and sustain the implementation process.

During the initial development of the program, the QIT was used to design and deliver an evidenced-informed training and later provide proactive TA. The QIT was used to enhance implementation in the Support System and the Delivery System, specifically with an emphasis on innovation-specific capacity building.

An example of our use of the QIT was to help plan for *creating policies that enhance accountability* (use of the QIT in this way is also highlighted in this article in our description of the PSC project). The team recognized the policies and procedures that needed to be in place to ensure that implementation tasks were completed in a timely fashion. The Support System members decided on the use of a web-based document to develop an ongoing task list for both the Support and Delivery Systems. Use was monitored through regular e-mails and updates that were made during weekly TA meetings. Support System members expressed, via a brief qualitative evaluation, that this method was helpful in centralizing current and upcoming tasks as well as increasing group accountability for completing these tasks.

Broadly, the MOMS Support System found that the QIT assisted in building both general and innovation-specific capacities to deliver the innovation. First, the QIT facilitated a systematic assessment of general organizational capacities that would be needed to implement each of the action steps. During this process, the Support System worked with the team of consultants and discussed which general capacities already existed that would support quality implementation of a given action step, and which capacities were lacking. In many instances, general capacities were already in place (e.g., an identified team leader) that supported the delivery of the training and TA, so there was no need to focus extensively on certain action steps. If a general capacity was lacking, necessary steps to build adequate capacity were identified and addressed. An example of building general capacity was the training model that was developed for this project. Specifically, the Support System wanted to use an evidence-informed approach to training. The project staff and consultants

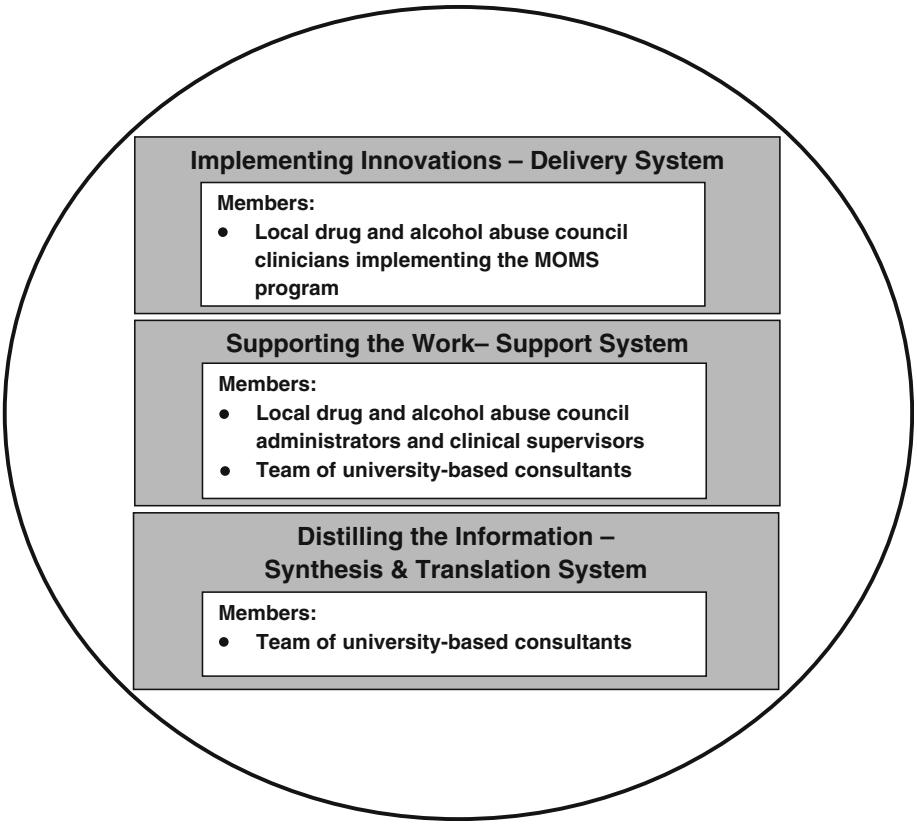


**Fig. 3** Members of the ISF systems in the MOMS program

collaboratively used a version of the Training for Outcomes model (Chien 2010) and the resulting model can be used for future trainings in this organization—whether for MOMS or another program.

The action steps in the QIT also helped identify gaps in innovation-specific capacities, including the need for specific tools (e.g., a MOMS Manual which detailed critical program elements), specialized training, proactive TA, and quality assurance/quality improvement (QA/QI) strategies (Wandersman et al. 2012). For example, the Support System realized they needed to identify specialized clinicians for MOMS, as well as specialized supervisors (see Fig. 3). These persons were identified through discussion with program leadership. The QIT helped facilitate the discussion of those who had specific enthusiasm (e.g., *identify an implementation team leader*) and those who had specific clinical expertise with pregnant women (e.g., *identify and recruit content area specialists as team members*).

### Summary Reflections on Piloting the QIT

Piloting the QIT in these two projects helped establish that the tool can be used to help the Support and Delivery System cooperatively guide the implementation process. Not only did we find that the tool raised stakeholders' consciousness of steps for quality implementation, the tool also helped identify capacity limitations that may inhibit implementing with quality. In both projects, the use of the tool was facilitated through a consultation process. A solid background in implementation is needed to effectively use the tool, and locally-relevant knowledge is needed to make sure planning is individualized for the setting. We found that the tool serves as an active in-depth planning worksheet that can be revised when necessary, shared easily among stakeholders, and is organized so that the content contained in the tool can be used to formally document progress, barriers, and group decisions. It is our opinion that this tool could be beneficial for any project where there is a Support and Delivery System working together to implement an innovation with quality.

## Discussion

Achievement of desired outcomes is contingent on quality implementation. The science behind implementation strategies has suggested critical steps that organizations/communities should take toward achieving stated goals. The QIT is a translation of a systematic framework synthesis that identified action steps that many types of practitioners can use to facilitate high quality planning, monitoring and evaluation of *how* an innovation is implemented.

Bridging implementation science and practice with quality requires a high level of capacity and resources,

including strategic collaboration, user-friendly tools, and a commitment to accountability and excellence within and between the multiple ISF systems. With all of the high level skills involved, it makes sense that implementation should be conceptualized as a team-based process that acknowledges the need to foster relationships among the stakeholders working together to implement innovations. To this end, this article works to specify the role of implementation in the ISF (see arrows labeled with implementation in Fig. 1). The systems share the same overarching goal of implementing with quality, but the roles they enact to achieve this goal differ. Quality implementation by the Support System involves building and maintaining an adequate level of capacity to meet needs in the Delivery System; quality implementation by the Delivery System involves utilizing its capacities to put the innovation into practice so that outcomes are likely to be achieved.

The QIT is intended to enhance relationships between these important systems in the ISF by identifying points for collaboration and helping them work together to implement with quality. For example, use of the QIT can help the Support System assist the Delivery System in a complex task such as planning how the implementation process will be evaluated. The QIT can also be used to help plan fundamental aspects of systems-level infrastructure, such as developing an implementation team or policies that make it easier for practitioners to use the innovation.

In our piloting of the QIT, several key suggestions have emerged. First, the QIT should be used within a comprehensive planning process (e.g., GTO) to ensure that the innovation that is adopted is appropriate for the host setting and that it is adequately planned for and evaluated. Second, adequate time and energy should be devoted to optimal use of the QIT which will span the planning, monitoring and evaluation of high quality innovations. Third, while it was designed to help plan, monitor, and evaluate the implementation process, it can also be used to guide discussion around capacities that are needed to implement with quality.

The QIT is a promising tool for promoting quality implementation. While further research is needed on which of its components and actions steps are most essential for achieving desired outcomes, it is our hope that the QIT will narrow the gap between the science and practice of implementation and promote the quality use of innovations in organizations and communities.

## References


Bramley, P., & Kitson, B. (1994). Evaluating training against business criteria. *Journal of European Industrial Training, 18*(1), 10–14.

Carnevale, A. P., Gainer, L. E., & Meltzer, A. S. (1990). *Work-place basics: The essential skills employers want*. San Francisco, CA: Jossey-Bass Publishers.

Castro, F. G., Barrera, M., Jr, & Holleran Steiker, L. K. (2010). Issues and challenges in the design of culturally-adapted evidence-based interventions. *Annual Review of Clinical Psychology, 6*, 213–239.

Cherniss, C., (April 15, 2000). *Emotional intelligence: What it is and why it matters*. Paper presented at the annual meeting of the Society for Industrial and Organizational Psychology, New Orleans, LA.

Chien, V. C. (2010). *Training for outcomes: Towards an evidence-informed approach for training effectiveness* (in preparation).

Chinman, M., Imm, P., & Wandersman, A. (2004). *Getting to outcomes 2004: Promoting accountability through methods and tools for planning, implementation, and evaluation*. (No. TR-TR101). Santa Monica, CA: RAND.

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science, 4*, 50.

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control. *Clinical Psychology Review, 18*, 23–45.

Domitrovich, C. E., Gest, S. D., Jones, D., Gill, S., & DeRousie, R. M. S. (2010). Implementation quality: Lessons learned in the context of the Head Start REDI trial. *Early Childhood Research Quarterly, 25*, 284–298.

DuBois, D. L., Holloway, B. E., Valentine, J. C., & Cooper, H. (2002). Effectiveness of mentoring programs for youth: A meta-analytic review. *American Journal of Community Psychology, 30*, 157–198.

Duffy, J. L., Prince, M. S., Johnson, E. E., Alton, F. L., Flynn, S., Mattison Faye, A., et al. (2012). Enhancing teen pregnancy prevention in local communities: Capacity building using the Interactive Systems Framework. *American Journal of Community Psychology* (this issue).

Durlak, J. A. (1998). Why program implementation is important. *Journal of Prevention and Intervention in the Community, 17*, 5–18.

Durlak, J. A. (2010). The importance of doing well in whatever you do: A commentary on the special section, "implementation research in early childhood education". *Early Childhood Research Quarterly, 25*, 348–357.

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327–350.

Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research, 18*, 237–256.

Fagan, A. A., Hanson, K., Hawkins, J. D., & Arthur, M. W. (2008). Bridging science to practice: Achieving prevention program implementation fidelity in the Community Youth Development Study. *American Journal of Community Psychology, 41*, 235–249.

Feldstein, A. C., & Glasgow, R. E. (2008). A practical, robust implementation and sustainability model (PRISM) for integrating research findings into practice. *Joint Commission Journal on Quality and Patient Safety/Joint Commission Resources, 34*, 228–243.

Fixsen, D. L., Blase, K. A., Timbers, G. D., & Wolf, M. M. (2001). In search of program implementation: 792 replications of the Teaching-Family Model. In G. A. Bernfeld, D. P. Farrington, &

A. W. Leschied (Eds.), *Offender rehabilitation in practice: Implementing and evaluating effective programs* (pp. 149–166). London: Wiley.

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *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. (FMHI Publication #231).

Flaspohler, P., Duffy, J. L., Wandersman, A., Stillman, L., & Maras, M. A. (2008). Unpacking prevention capacity: An intersection of research-to-practice and community centered models. *American Journal of Community Psychology, 41*, 182–196.

Forsner, T., Hansson, J., Brommels, M., Wistedt, A. A., & Forsell (2010). Implementing clinical guidelines in psychiatry: a qualitative study of perceived facilitators and barriers. *BMC Psychiatry, 10*(8). doi:10.1186/1471-244x-10-8.

Glisson, C., & Schoenwald, S. K. (2005). The ARC organizational and community intervention strategy for implementing evidence-based children's mental health treatments. *Mental Health Services Research, 7*, 243–259.

Goodman, R. M., Speers, M. A., McLeroy, K., Fawcett, S., Kegler, M., Parker, E., et al. (1998). Identifying and defining the dimensions of community capacity to provide a basis for measurement. *Health Education & Behavior, 25*(3), 258–278.

Gottfredson, D. C., & Gottfredson, G. D. (2002). Quality of school based prevention programs: Results from a national survey. *Journal of Research on Crime and Delinquency, 39*, 3–35.

Greenberg, M. T., Domitrovich, C. E., Graczyk, P. A., & Zins, J. E. (2005). *The study of implementation in school-based preventive interventions: Theory, research, and practice* (Vol. 3). DHHS Pub. No. (SMA) _____. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration. Retrieved from http://casel.org/wp-content/uploads/2011/04/Implementation-VOL-31.pdf.

Greenhalgh, T., Robert, G., MacFarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly, 82*, 581–629.

Hall, G. E., & Hord, S. M. (2010). *Implementing change: Patterns, principles and potholes* (3rd ed.). Boston, MA: Allyn and Bacon.

Hansen, W. B., & McNeal, R. B. (1999). Drug education practice: Results of an observational study. *Health Education Research, 14*, 85–97.

Harshbarger, C., Simmons, G., Coelho, H., Sloop, K., & Collins, C. (2006). An empirical assessment of implementation, adaptation, and tailoring: The evaluation of CDC's national diffusion of VOICES/VOCES. *AIDS Education and Prevention, 18*, 184–197.

Hernandez, M., Gomez, A., Lipien, L., Greenbaum, P. E., Armstrong, K. H., & Gonzalez, P. (2001). Use of the system-of-care practice review in the national evaluation: Evaluating the fidelity of practice to system-of-care principles. *Journal of Emotional and Behavioral Disorders, 9*, 43–52.

Hogue, A., Liddle, H. A., Singer, A., & Leckrone, J. (2005). Intervention fidelity in family-based prevention counseling for adolescent problem behaviors. *Journal of Community Psychology, 33*, 191–211.

International Organization for Standardization. (1998). *ISO/IEC International Standard 13236: Information technology—Quality of service: Framework* (1st ed.).

Klein, K. J., & Sorra, J. S. (1996). The challenge of innovation implementation. *Academy of Management Review, 21*, 1055–1080.

Kumpfer, K. L., Turner, C., Hopkins, R., & Librett, J. (1993). Leadership and team effectiveness in community coalitions for the prevention of alcohol and other drug abuse. *Health Education Research, 8*, 359–374.

Lehman, W. E. K., Greener, J. M., & Simpson, D. D. (2002). Assessing organizational readiness for change. *Journal of Substance Abuse Treatment, 22*, 197–209.

McGehee, W., & Thayer, P. W. (1961). *Training in business and industry*. New York: Wiley.

Meyers, D. C., Durlak, J., & Wandersman, A. (2012). The Quality Implementation Framework: A synthesis of critical steps in the implementation process. *American Journal of Community Psychology*. doi:10.1007/s10464-012-9522-x.

Mihalic, S., Fagan, A. A., Irwin, K., Ballard, D., & Elliott, D. (2004). *Blueprints for violence prevention*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change*. New York: Guilford Press.

Miller, R. L., & Shinn, M. (2005). Learning from communities: Overcoming difficulties in dissemination of prevention and promotion efforts. *American Journal of Community Psychology, 35*, 169–183.

Mills, S. C., & Ragan, T. J. (2000). A tool for analyzing implementation fidelity of an integrated learning system. *Educational Technology Research and Development, 48*, 21–41.

Mowbray, C. T., Holter, M. C., Teague, G. B., & Bybee, D. (2003). Fidelity criteria: Development, measurement, and validation. *American Journal of Evaluation, 24*, 315–340.

Noe, R. A. (2010). *Employee training and development* (5th ed.). Boston, MA. Irwin/McGraw-Hill.

O'Donnell, C. L. (2008). Defining, conceptualizing, and measuring fidelity of implementation and its relationship to outcomes in K-12 curriculum intervention research. *Review of Educational Research, 78*, 33–84.

Raghavan, R., Bright, C. L., & Shadoin, A. L. (2008). Toward a policy ecology of implementation of evidence-based practices in public mental health settings. *Implementation Science, 3*, 26.

Rapp, C., Goscha, R., & Carlson, L. (2010). Evidence-based practice implementation in Kansas. *Community Mental Health Journal, 46*, 461–465.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Saunders, R. P., Ward, D., Felton, G. M., Dowda, M., & Pate, R. R. (2006). Examining the link between program implementation and behavior outcomes in the lifestyle education for activity program (LEAP). *Evaluation and Program Planning, 29*, 352–364.

Schorr, L. B. (2003). *Determining ''what works'' in social programs and social policies: Toward a more inclusive knowledge base*. Washington, DC: Brookings Institution.

Semel, M. E., Resch, S., Haynes, H. B., Funk, L. M., Bader, A., Berry, W. R., et al. (2010). Adopting a surgical safety checklist could save money and improve the quality of care in U.S. hospitals. *Health Affairs, 29*, 1593–1599.

Smith, J. D., Schneider, B. H., Smith, P. K., & Ananiadou, K. (2004). The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review, 33*, 547–560.

Spoth, R., Claire, C., Greenberg, M., Redmont, C., & Shin, C. (2007). Toward dissemination of evidence-based family interventions: Maintenance of community-based recruitment results and associated factors. *Journal of Family Psychology, 21*, 137–146.

Spoth, R., Guyll, M., Redmond, C., Greenberg, M., & Feinberg, M. (2011). Six-year sustainability of evidence-based intervention implementation quality by community–university partnerships: The PROSPER study. *American Journal of Community Psychology, 48*, 412–425.

Stith, S., Pruitt, I., Dees, J., Fronce, M., Green, N., Som, A., et al. (2006). Implementing community-based prevention programming: A review of the literature. *The Journal of Primary Prevention, 27*, 599–617.

Thomas, K. G. F., Gatz, M., & Luczak, S. E. (1997). A tale of two school districts: Lessons to be learned about the impact of relationship building and ecology on consultation. *Journal of Educational and Psychological Consultation, 8*, 297–320.

Voss, C. (1992). Successful innovation and implementation of new processes. *Business Strategy Review, 20*, 29–44.

Walker, J. S., & Koroloff, N. (2007). Grounded theory and backward mapping: Exploring the implementation context for Wraparound. *Journal of Behavioral Health Services & Research, 34*, 443–458.

Wandersman, A. (2003). Community science: Bridging the gap between science and practice with community-centered models. *American Journal of Community Psychology, 31*, 227–242.

Wandersman, A., Chien, V., & Katz. J. (2012). 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*, 1–15. doi:10.1007/s10464-012-9509-7.

Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., et al. (2008). Bridging the gap between prevention research and practice: The Interactive Systems Framework for Dissemination and Implementation. *American Journal of Community Psychology, 41*, 171–181.

Wandersman, A., Imm, P., Chinman, M., & Kaftarian, S. (2000). Getting to outcomes: A results-based approach to accountability. *Evaluation and program planning, 23,* 389–395.

White, W. (2008). *Recovery management and recovery-oriented systems of care: Scientific rationale and promising practices*. Northeast Addiction Technology Transfer Center, Great Lakes Addiction Technology Transfer Center, Philadelphia Department of Behavioral Health/Mental Retardation Services.