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A practical implementation science heuristic for organizational readiness: R = MC²

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Abstract

There are many challenges when an innovation (i.e., a program, process, or policy that is new to an organization) is actively introduced into an organization. One critical component for successful implementation is the organization's readiness for the innovation. In this article, we propose a practical implementation science heuristic, abbreviated as $R = MC^2$. We propose that organizational readiness involves: 1) the *motivation* to implement an innovation, 2) the *general capacities* of an organization, and 3) the *innovation-specific capacities* needed for a particular innovation. Each of these components can be assessed independently and be used formatively. The heuristic can be used by organizations to assess readiness to implement and by training and

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technical assistance providers to help build organizational readiness. We present an illustration of the heuristic by showing how behavioral health organizations differ in readiness to implement a peer specialist initiative. Implications for research and practice of organizational readiness are discussed.

Keywords

Organizational Readiness; Practical Implementation Science; Motivation; General Capacity; Innovation-Specific Capacity

There is general agreement in the organizational literature that readiness is an essential part of successfully implementing an innovation (e.g. Drzensky, Egold, & Van Dick, 2012; Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004; Hall & Hord, 2011; Holt & Vardaman, 2013; Simpson, 2002; Weiner, 2009). Readiness refers to the extent to which an organization is both willing and able to implement a particular innovation (Drzensky et al., 2012; Rafferty, Jimmieson, & Armenakis, 2013; Weiner, Amick, & Lee, 2008; Weiner, 2009). Readiness is considered a necessary precursor to successful organizational change and is often embedded within larger program planning and implementation frameworks (Aarons, Hurlburt, & Horwitz, 2011; Damschroder et al., 2009; Greenhalgh et al., 2004; Powell et al., 2012).

Beyond the consensus that readiness is an important factor in successful implementation, there has been little agreement about readiness as a construct or how to best operationalize organizational readiness for a given innovation (Aarons et al., 2011; Damschroder et al., 2009; Flaspohler, Meehan, Maras, & Keller, 2012, Greenhalgh et al., 2004; Rafferty et al., 2013; Simpson, 2002; Weiner et al., 2008). Funders, technical assistance (TA) providers, and practitioners would benefit from knowing how ready organizations responsible for delivering specific innovations are to implement an innovation with quality (Drzensky et al., 2012; Rafferty et al., 2013; Weiner et al., 2008; Weiner, 2009). Organizational readiness is important if we wish to bridge the gap between evidence-based prevention and intervention strategies *and* implementation in practical settings (e.g. community based organizations, clinics, schools).

In this article, we propose a heuristic of organizational readiness that is consistent with *practical implementation science* (i.e., the research and action of translating implementation science empirical findings into user-friendly resources (Meyers et al, 2012a)). This heuristic ($R=MC^2$) is composed of key findings in the literature about readiness, thereby providing practical implications for understanding and supporting organizational readiness. Specifically, we propose that organizational readiness includes three distinct components: the organization's *motivation* to adopt an innovation, *general organizational capacities*, and *innovation-specific capacities*. We will first describe the components of organizational readiness which constitute the heuristic and their interrelationships. Next, because readiness is inherently part of a larger systemic context (Aarons, Hurlburt, & Horowitz, 2011; Damschroder et al., 2009), we will describe how this conceptualization of organizational readiness fits into a larger implementation and support framework --the Interactive Systems Framework for Dissemination and Implementation (ISF) (Wandersman et al., 2008). We

will then present an example from the substance abuse field to illustrate how systems that support innovations can apply the heuristic when trying to enhance organizational readiness.

The heuristic is not meant to be a comprehensive model of program development and implementation. Rather, our purpose is to practically and succinctly frame organizational readiness in a way that suggests directions for improvement in implementation practice and support. This work is influenced by our empowerment evaluation experiences supporting implementation of evidence-based programs via capacity building (Fetterman & Wandersman, 2005). We found that focusing on the innovation requirements (i.e. the innovation- specific capacities) and/or the general organizational characteristics (i.e. general capacities) was not sufficient to get an organization "ready" to implement. This led us deeper into the implementation literature to search for methods to broaden our understanding of readiness as it relates to the primary program planning framework we use (Getting To Outcomes®, Chinman, Imm, & Wandersman, 2004). By translating key domains in the implementation science literature (e.g., motivation: Armenakis & Harris, 2009; Simpson, 2002; Greenhalgh et al., 2004 Rogers, 2003; capacities and resources: Flaspohler et al., 2008; Weiner, 2009), the heuristic can be used to guide stakeholders who wish to implement innovations in organizations (e.g., front line practitioners, administrators, policy-makers, funders). For a list of important terms that we use in this article, see the attached glossary in Appendix A.

Components of Organizational Readiness

We propose that *organizational readiness* has three specific and dynamic components: motivation, general capacity, and innovation-specific capacity. This conceptualization expands on Weiner's (2009) model of organizational readiness, which presents how an organizational commitment to change and the organizational efficacy in enacting a change predict the quality of the change effort. We also draw from Flaspohler et al's (2008) synthesis of two different types of capacities (innovation-specific and general) and how these are conceptualized at different levels (individual, organizational, and community.)

Each component can be measured independently and thus offers a specific, actionable understanding of organizational readiness. We will briefly discuss each of these components.

Motivation

We define motivation as perceived incentives and disincentives that contribute to the desirability to use an innovation. In the heuristic, we are concerned about the motivation to implement a specific innovation. This includes beliefs about a) an innovation and b) support for the innovation that contribute to innovation use (i.e. a *shared resolve*; Weiner, 2009). In the heuristic, we are concerned with *factors that influence motivation* because they provide information that can be used to increase motivation to implement the innovation such as: collective expectations from stakeholders (Damschroder et al., 2009; Flaspohler et al., 2008), perceptions of the attributes of an innovation (Rogers, 2003; Greenhalgh et al., 2004), perceptions of anticipated outcomes of an innovation (Armanakis & Harris, 2009; SAMHSA, 2010; Schoenwald & Hoagwood, 2001), pressures for change (Hall & Hord,

2011), and emotional responses about the innovation (Rafferty et al., 2013). In turn, building motivation involves creating and fostering conditions that increase the intent to change (Aarons & Sommerfeld, 2012; Atkins et al., 2008; Miller & Rollnick, 2013; Rogers, 2003).

Table 1 presents a list of factors that have been shown to influence motivation. The first five of these factors come from Rogers' (2003) work on diffusion processes. Table 1 is not meant to be exhaustive, but rather to orient the stakeholder (e.g., funder, researcher, practitioner, TA provider) to major key variables in motivation.

General Capacity

General capacities consist of attributes of a functioning organization (e.g., sufficient staffing, effective organizational leadership) and connections with other organizations and the community (Wandersman et al., 2008). This includes the context, culture, current infrastructure, and the organizational processes within an organization in which an innovation will be introduced. General capacities are associated with the ability to implement *any* innovation (Flaspohler et al., 2008). There are many organizational capacities that must be considered in order for implementation to be successful and sustained over the long term (Fixsen et al., 2005; Greenhalgh et al., 2004; Livet, Courser, & Wandersman, 2008). Table 2 presents a list of general capacities. This includes the important constructs of organizational culture and climate. Some organizations may foster an overall culture (i.e., expectations about how things are done in an organization) and climate (i.e., how individuals perceive the work environment) that is open to new innovations while others may resist change (Glisson & James, 2002; Ford, Ford, & D'Amelio, 2008; Glisson, 2007; Greenhalgh et al., 2004; Hall & Hord, 2010). These are included in general capacities (rather than in motivation), since they could apply to any innovation, not just the specific one being implemented (Rafferty et al., 2013; Rogers, 2003).

Innovation-Specific Capacity

Innovation-specific capacities are the human, technical, and fiscal conditions that are important for successfully implementing a *particular* innovation with quality (Flaspohler et al., 2008). While Table 3 presents some global constructs associated with innovation-specific capacity, each new policy, program, or process has its own set of knowledge and skills that are needed to implement it with quality. Therefore, the strategies to build innovation-specific capacities may have a more limited and targeted scope than those that build general capacity. The innovation-specific capacity building process for each innovation will be somewhat different. Some innovations may be simple and require fewer capacities to effectively implement, while others may be system-wide transformations of complex care arrangements (e.g. Systems of Care; Miles, Espiritu, Horen, Sebian, & Waetzig, 2010; SAMHSA, 2010) that come with multiple, distinct parts (Rogers, 2003). Each innovation has a climate that is specific to the implementation of that innovation (i.e., the extent to which a given innovation is supported in an organization; Klein, Conn, & Sorra, 2001). Implementation support strategies may require connecting organizations to specialized training and/or TA to develop the knowledge, skills and abilities to ensure quality implementation for a specific innovation (Meyers et al., 2012b; Wandersman, Chien,

& Katz, 2012). Most implementation support strategies to date have focused on innovation-specific capacities rather than the other two readiness components described in this paper.

A Heuristic for Organizational Readiness: $R = MC^2$

Organizational readiness for an innovation is a function of these three components: 1) motivation, 2) general organizational capacity, and 3) innovation-specific capacities. Each component contributes to an organization's readiness for a particular innovation. We abbreviate this into the heuristic $R=MC^2$. We know that $R=MC^2$ is a variation of one of the most famous formulas in the world. With apologies to Dr. Einstein, we chose to use it for organizational readiness as a heuristic because the interactions of the three components that have these letters are key and MC^2 is easy to remember. We now turn to a discussion of how organizational readiness fits within a specific implementation framework and how it can be assessed and strengthened through support strategies.

$R=MC^2$ and the Interactive Systems Framework for Dissemination and Implementation

Organizational readiness is often discussed in the context of determining whether or not an organization is capable of putting a particular innovation into practice (Flaspohler et al., 2012) and is sometimes contained as part of a larger implementation framework (e.g. Aarons et al., 2011; Damschroder et al., 2009; Greenhalgh et al., 2004). We view readiness as part of a comprehensive planning, implementation, and evaluation approach that includes needs assessment, goal setting, identification of best or promising practices, planning, and evaluation (Chinman et al., 2004; Powell et al., 2012). Readiness is not just a precursor to implementation, but a construct that encompasses the conditions that are necessary to ensure quality implementation throughout the entirety of the innovation's lifespan (exploration, preparation, implementation, and sustainment; Aarons et al., 2011). We describe organizational readiness within a broad dissemination and implementation framework that articulates how innovations can be supported and implemented.

The Interactive Systems Framework for Dissemination and Implementation (ISF, Wandersman et al., 2008) helps to explain the processes by which innovations (including evidence-based interventions) can be introduced into communities. There are three systems in the ISF. The *Delivery System* is the organization(s) or community setting that actually implements innovations (e.g., mental health centers, schools). The *Support System* uses strategies like training and TA to strengthen the Delivery System's ability to implement innovations with quality (Wandersman et al., 2012). The *Synthesis and Translation System* synthesizes the products of research and translates them into user-friendly formats that can be easily accessed and understood by practitioners in the Support and Delivery Systems (Rapkin et al., 2012). There are bidirectional relationships between all three systems; they influence each other. The two ISF systems most relevant to organizational readiness are the Delivery System and the Support System. In the Delivery System, organizational readiness is an important construct for implementing innovations; the Support System can be used as a driver to increase the Delivery System's organizational readiness.

In light of evidence that increasing capacity may enhance how an organization can implement an innovation, the ISF has an explicit focus on identifying and building Delivery System capacity with assistance from the Support System (Chinman et al., 2004; Elliott, 2003; Flaspoher et al., 2008). Significant time and resources should be devoted to innovation support activities that increase the ability to implement with quality (Wandersman et al., 2012). Some models propose that building either general or innovation-specific capacity will build organizational readiness to implement an innovation (Flaspohler et al., 2012; Glisson, 2007). While building capacity is a necessary method for getting an organization ready to implement, it is likely to be insufficient if collective motivation for the innovation is not present (Weiner, 2009; Weiner et al., 2008). Thus, a distinction should be made between capacities and organizational readiness. The terms *capacity* and *readiness* are not interchangeable. This is where motivation enhances our understanding of the implementation process. An organization may have the capacity to implement a specific innovation, but not the motivation to put it into practice. Until now, the ISF has not explicitly addressed motivation and organizational readiness; consequently, we propose this critical addition to the ISF (see Figure 1). In order to be ready, an organization needs to be both willing (motivated) and able (capacity) to put an innovation into place.

We know that any innovation exists in a broader systemic context composed of economic, political, and social considerations (Aarons et al., 2011; Damschroder et al., 2009; Wandersman et al., 2008). These factors include regulatory policies, sociopolitical context climate, client/consumer advocacy, the existing research literature, and available funding (Aarons et al., 2011; Wandersman et al., 2008). These outer context factors will influence the environment in which an innovation will be implemented. Since they are not directly controlled by organizations, they are not integral to the heuristic.

Applying $R=MC^2$

This heuristic highlights the advantages that a more nuanced definition of organizational readiness can have when implementing an innovation. These include considerations of how organizational readiness is dimensional, how it changes over time, and how the components can interact with one another.

Organizational readiness is dimensional

Organizational readiness is often described as a categorical, and sometimes dichotomous, construct with pre-defined cut-points or thresholds (Flaspohler et al., 2012; Hawkins & Catalano, 2002; SAMHSA, 2010; Oetting et al., 1995). When organizational readiness is categorized this way, there is a premise that organizations that are “ready” will be able to effectively implement an innovation. This is problematic for two reasons. First, we often do not have empirical guidelines to help us understand when an organization is ready versus when it is not ready. Second, if an organization is deemed “not ready” to implement, it can often be difficult to determine what conditions are needed in order for implementation to be successful. In our heuristic, organizational readiness is more nuanced than simply a category or stage. Rather, differences in readiness are a matter of *degree*. Further, organizations can be high in some components of organizational readiness (*e.g.*, motivation) while low in

others (*e.g.*, innovation-specific capacity). Variability can be seen in the three different components.

While a "ready" versus "not ready" distinction may serve functional purposes in certain contexts (*e.g.*, the allocation of limited fiscal resources), it also has practical limitations. A basic assumption is that organizations deemed "not ready" will be non-responsive to support strategies (such as TA), which may result in a waste of already limited resources. Consequently, organizations with the largest need for implementation support are often labeled as not being ready for the innovation. These organizations are likely to be overlooked because of a low level of initial organizational readiness when, in reality, this level of organizational readiness can be strengthened with support over time. This paradox is a common theme in the adoption literature (Rogers, 2003). When we think of organizational readiness as dimensional within this heuristic, it allows us to identify the type and degree of the deficit and then draw upon the appropriate support system literature to identify a strategy to address it.

Organizational readiness can change over time

A second limitation of current definitions is the general assumption that organizational readiness is either static over time or increasing at a steady rate. Therefore, readiness is typically assessed in early phases of implementation (e.g. Flaspohler et al 2012; Oetting et al., 1995; SAMHSA, 2010). For example, the community-driven substance abuse prevention intervention Communities that Care (CTC) established a set of milestones and benchmarks used to measure how ready a particular community is to implement. This largely includes factors such as buy-in and consensus and focuses on recruiting key community members and organizations needed to initiate CTC efforts (Hawkins & Catalano, 2002). When an organization meets certain readiness criteria, then the innovation may be implemented (e.g. SAMHSA, 2010).

Organizational readiness can be dynamic and fluctuating, and should therefore be monitored throughout implementation. There are multiple stages during the implementation of an innovation (*e.g.* Aarons et al., 2011; Chinman et al., 2004; Damschroder et al., 2009; Simpson, 2002). Organizations can be more or less ready for an innovation at any given time during the lifespan of implementation--after selection of the innovation, during implementation, and after the innovation has been institutionalized. It should not be assumed that initial levels of readiness will be sustained, since important capacity and motivational changes may occur at any time (Stirman et al., 2012). For example, key staff may leave through turnover, or new priorities may compete with implementation of the innovation. Additionally, the innovation may not be desirable to the individuals slated to implement it.

Institutionalizing and sustaining an innovation can be a very lengthy process that often encompasses several years (Fixsen et al., 2005; Hall & Hord, 2010). Neglecting organizational readiness over time can have negative consequences on whether the innovation is sustained. While issues of sustainability are often only viewed through the lens of financial and organizational capacity to continue (particularly after a funding cycle has ended; Chinman et al, 2004), the ongoing perceptions of the innovation's usefulness also need to be monitored (Hall & Hord, 2010; Stirman et al., 2012). Initial enthusiasm and

collective motivation for implementing an innovation may wane once the scope of work becomes apparent. Improving sub-adequate and maintaining adequate motivation, general capacities, and innovation-specific capacities are tasks that must be continually cultivated over the implementation process if an innovation is likely to have any sustainability (Chambers, Glasgow, & Stange, 2013; Hall & Hord, 2010; Meyers et al., 2012a; Stirman et al., 2012).

Components of Readiness Interact

We propose that the three components of organizational readiness are not only dynamic within themselves, but that reciprocal processes between the components may occur (Damshroder et al., 2009; Damschroder & Hagedorn, 2011; Greenhalgh et al., 2004; Hemmelgarn, Glisson, & James, 2006). For example, the capacities (both general and innovation-specific) of individuals within the organization may influence the motivational climate, which can influence motivation toward change (Flaspohler et al., 2008). However, the precise dynamics between components will depend on the characteristics of the specific innovation, such as its expansiveness (the extent to which the innovation encompasses many parts of the organization; Greenhalgh et al., 2004; Flaspohler et al., 2008) and complexity (perceived as difficult to understand and use; Rogers, 2003). Consequently, the relationships between components can be difficult to predict and generalize across different innovations.

Since the components are thought to be interactive rather than simply additive, if any of the components are at or near zero, then we hypothesize that the organization is not ready to implement the innovation, regardless of how high it may be on the other components. All three components of readiness are necessary for successful implementation. Organizations are often likely to have *some* level of each component. This suggests that these organizations can improve with appropriate support, thereby offering a more strength-based perspective on readiness that is consistent with evaluation models like empowerment evaluation (Fetterman & Wandersman, 2005).

Provision of Support Systems Activities Using $R=MC^2$

The heuristic allows multiple stakeholders (e.g., program developers, funders, researchers, TA providers, evaluators, practitioners) a practical lens to better identify the specific factors that make an organization ready for an innovation and further provides the Support System information about how to tailor strategies to make organizations more ready. We propose that Support System assessment and support strategies that target the three key components in $R=MC^2$ and tailor their methods accordingly can help develop organizational readiness to implement an innovation (Figure 2). Below, we illustrate how Support Systems activities can be used to build organizational readiness.

Initially, the level of each of the components is determined through a readiness baseline assessment (see the second box in Figure 2). When measuring the readiness of an organization to implement an innovation, there is a need to appropriately balance existing, validated readiness measures individually with locally tailored readiness assessments. This is because there can be extensive variation in innovation characteristics, and in the quality of

readiness assessments (Weiner et al., 2008; Shea, Jacobs, Esserman, Bruce, & Weiner, 2014).

Next, targeted, evidence-based, specific strategies for supporting implementation can be used to build the individual components. These strategies include developing and using tools, delivering training, providing TA, and developing quality assurance/quality improvement processes to improve motivation, general capacity, and innovation-specific capacity (the oval in Figure 2; Wandersman et al., 2012). *Tools* are resources that are designed to organize, summarize, or communicate knowledge (*e.g.*, manuals, worksheets, computer programs, etc., Wandersman et al., 2012). *Training* is a planned, instructional activity intended to facilitate acquisition of knowledge, skills, and attitudes in order to enhance learner performance (Wandersman et al., 2012). However, training in and of itself is generally insufficient to produce intentional change within an organization (Wandersman et al., 2012; Beidas & Kendall, 2010). *Technical Assistance* is an individualized Support System activity and hands-on approach that is often conducted after training (Chinman et al., 2004; Durlak & Dupre, 2008; Wandersman et al., 2012). *Quality Assurance (QA)/Quality Improvement (QI)* strategies, involve the use of tools and data to assess (QA) or enhance (QI) quality performance. Being able to evaluate the innovation is positively linked to implementation quality (Flaspohler et al., 2008; Greenhalgh et al., 2004; Labin, Duffy, Meyers, Wandersman, & Lesesne, 2012; Powell et al., 2012).

We suggest that using $R=MC^2$ helps identify the specific level of organizational readiness among the three components. Examining each component of organizational readiness separately pinpoints areas in need of improvement and highlights areas of relative strength that can be used as leverage for improving organizational readiness over time. Based on initial levels of each readiness component, specific types of capacity- and motivation-building strategies can be identified, delivered, and finally evaluated for effectiveness. The appropriate support strategy needs to be grounded in the evidence-base for each component of readiness (Armenakis et al., 1993; Wensig et al., 2012). Importantly, support strategies take place within the context of relationships between support providers and recipients (Wandersman et al., 2012). Providing support strategies that are delivered with quality should lead to enhanced levels of the targeted components, and consequently improved readiness to implement with quality (The right hand box in Figure 2; Klein et al., 2001; Powell et al., 2011; Rafferty el al., 2013; Rogers, 2003; Wandersman et al., 2012).

Proactive implementation supports provided by the Support System are particularly important for organizations that are mandated to adopt specific innovations, (e.g. provisions included in the Affordable Care Act like a Community Health Assessment). In cases like this, organizations are required to adopt the innovation, but some may be unprepared to do so. This may setup a non-conducive scenario for quality implementation and increase the likelihood of undesirable outcomes. Although mandates from regulatory agencies or funders can increase collective motivations to adopt an innovation (Hall & Hord, 2010; Flaspohler et al., 2008), mandates do not help build the general or innovation-specific capacity of an organization (Greenhalgh et al., 2004.) Therefore, there is a need for tailored, proactive, and effective implementation support strategies that can build and sustain innovation readiness in organizations through motivation, general, and innovation-specific capacity processes.

Example: Organizational Readiness for Peer Specialists in Behavioral Health

To illustrate the application of our heuristic, we offer an example drawn from the substance abuse field. Behavioral health organizations are being encouraged to develop formal and informal environments in which peers can provide support and services to one another. In response, there has been an increasing emphasis on hiring and developing peer specialists (DBHIDS, 2011; White, 2009). A *Peer Specialist* is a para-professional with experiential knowledge in the substance abuse or mental health recovery process. This is a person who is in recovery themselves. Peer specialists can be utilized in a wide-range of primary jobs and can model positive recovery behaviors for clients who are early in their own recovery.

The example below illustrates how organizations might vary on the three components of organizational readiness, and some possible support strategies that could help build each component. Three organizations were assessed for their organizational readiness (MC^2) to implement a peer specialist program using a mixed methods survey administered in the spring of 2012. The organization names have been changed for this example.

Stillwater Counseling Center is a multi-site organization in an urban environment with strong, centralized leadership, a consistent client base, a stable funding source through Medicaid, and a core of senior, qualified staff. In early 2005, Stillwater began a peer specialist program by internally developing experienced treatment consumers through a pilot volunteer program. Interested clients were given the opportunity to provide service to others in treatment and in the community. Since then, they have been able to hire and retain approximately ten peer specialists without external funding. The peer-specialists have been fully integrated into daily service operations where they perform tasks like substance abuse screening, community outreach, and case management. They are considered equal and valuable members of the treatment team by the clinical and administration staff. Stillwater has begun to disseminate their peer-specialist development model regionally through small conference presentations and trainings to other organizations that are interested in adopting their model. They are also looking to expand the number of current peer specialist and evaluate the impact the program has had on clinical outcomes

At Stillwater, all three components of organizational readiness for a peer specialist program are high (general capacity, innovation-specific capacity, and motivation). By recognizing the high levels of readiness for peer-specialists, the Support System can provide TA strategies to specifically target how to continue to sustain the program (Hall & Hord, 2010; Wandersman et al., 2012; Stirman et al., 2012). Because Stillwater is looking to evaluate the program, augmenting QA strategies and QI processes (Powell et al., 2012), can further maintain readiness of the organization going forward

Serenity, Inc. is a small organization of less than ten total employees serving four rural counties out of a single office. While their staff is generally stable, the occasional turnover is very disruptive to clinical services. Because their fiscal stability is variable and contingent upon the number of clients served, Serenity employees are eager to try out creative methods to increase their ability to serve consumers without taxing their already limited budget. After

being exposed to Stillwater's model through a presentation, they became highly interested in recruiting and training their own peer specialists in order to develop more natural connections with community-members in recovery. However, given their limited resources, they are uncertain about how to allocate funds to provide such training.

At Serenity, both the general and innovation-specific capacities to support a peer specialist are lacking, while motivation is high. The Support System could help build the experience and skills that an organization has at seeking alternative and additional streams of funding in order to diversify their incoming resources. Examples of this general-capacity strategy would be building the ability to apply for community or federal grants and/or expanding the number of insurance providers that Serenity contracts with (Armstrong et al., 2006; Powell et al., 2012). If the resources can be allocated for a peer-specialist, then innovation-specific training and TA may help Serenity recognize the variety of ways in which a peer-specialist could be integrated into daily activities (Wandersman et al., 2012; White, 2009).

Second Chances is a large, community-based organization in a semi-urban environment that recently upgraded their facilities in 2009. This was funded by an endowment generated through public and private donors. Senior leadership has been stable for over ten years, and the climate is generally pleasant. Second Chances hired three peer specialists two years ago, but was unable to smoothly integrate them into daily operations. One peer specialist left after one month, and the others have seen their hours cut due to state financing structures that limit reimbursable service hours. The remaining peer specialists were assigned to local outreach efforts at homeless shelters and hospitals. Since the remaining peer specialists are rarely present on site, the overall benefit of their work seldom seen by current clients and staff. There was little momentum and demand from clients and staff for additional peer specialists. Due to these reasons, Second Chances sees little reason to invest in and develop the program further, and is seeking other possible innovations.

There are both motivational and innovation-specific deficits at Second Chances, while general capacity is fairly high. The Support System can address motivation among the staff by examining perceptions of the Peer-Specialist program by specifically looking at the relative advantage and current compatibility of the program (Rogers, 2003). The Support System may alternately help Second Chances explore alternative innovations that are better matches given the current systems climate (Chinman et al., 2004). However, if peer specialists were mandated (e.g. as a condition of a grant) specific training may be provided to leadership to build the innovation-specific capacity to better utilize the current peer specialists in a way that better fits with the culture of Second Chances. This may also increase the buy-in among the leadership which can build the motivation of the staff (Aarons & Sommerfeld, 2012; Atkins et al., 2008; Beidas et al., 2013; Rafferty et al., 2013).

For these three organizations, it is not sufficient to say whether they are or are not ready to develop or expand a peer specialist program. Rather, their organizational readiness depends on *how* they vary on different components of readiness. Since we can look at the status of each component with $R=MC^2$, the Support System has information about how to approach the organizational readiness building process in a more efficient and effective manner.

Discussion

We presented a heuristic for organizational readiness that includes three distinct components: motivation, general capacity, and innovation-specific capacity ($R=MC^2$). This heuristic can be used to improve the assessment of organizational readiness by demonstrating how an organization may vary on the specific components. We then discussed how our heuristic can provide direction to Support Systems in identifying which components should be the target of support strategies in order to build organizational readiness.

Our presentation of organizational readiness is based on several assumptions that warrant further discussion. First is the assumption that an innovation is appropriate for an organization. The organizational readiness heuristic does not assess whether an organization should or should not adopt a specific innovation. Rather, it is a way to describe the current conditions with respect to the innovation-- once an adoption decision has been made. Deciding upon the most appropriate innovation depends on a thorough needs and resource assessment, review of best and promising practices, and consideration of cultural and community fit. A strategic process such as Getting To Outcomes® (GTO, Chinman et al., 2004) provides the steps for making evidence-based decisions on which innovation will fulfill the goals of the organization for a program. Only then can organizational readiness be properly evaluated and used.

Second, we recognize that there can be differences between levels of analysis in organizations (Rafferty et al., 2013; Shea et al., 2014). Specifically, there may be variations in the readiness of 1) individuals (Deci & Ryan, 2000a, 2000b; Miller & Rollnick, 2013), 2) groups of individuals (Hall & Hord, 2010; Rogers, 2003), 3) the organization as a whole (Rafferty et al., 2013), and, 4) groups of organizations in the same community. The Support System may have to use a variety of strategies to address differences in readiness *within* an organization in order to facilitate implementation, although this level of tailoring has the potential to be a resource-intensive process.

Third, the heuristic suggests that an organization *is not ready* for an innovation if any one of the factors in $R=MC^2$ is zero or near zero. In such cases, it is necessary to decide whether Support System activities should take place--when is organizational readiness too low to achieve a reasonable return on investment of Support System resources? Labeling an organization as “not ready” can problematically rule out the organizations most in need of help (Rogers, 2003). This decision is a major challenge for Support Systems and funders, especially if there is a desire to increase the number of organizations that are ready to implement an innovation (as is the case with mandates).

We see several areas for research that can address some of the limitations. We recognize that the measurement of organizational readiness as a whole is still underdeveloped (Drzensky et al., 2012; Weiner et al., 2008). Therefore, the precise subcomponents of organizational readiness, which we have only referenced briefly, need to be operationalized in a way that can inform key stakeholders. More specific measurement tools and analytical models both quantitative and qualitative (e.g. Shea et al., 2014), can address the three components of

organizational readiness in ways that inform how the Support System can improve the ways in which the Delivery System provides services (Rapkin et al., 2012; Wandersman et al., 2012).

There is a parallel need for innovation developers and the Synthesis and Translation System to better specify particular components (motivation, general capacities, and innovation-specific capacities) that need to be in place in order for there to be successful implementation of an innovation. It is likely that being able to adopt and implement an innovation is an interaction between perceptions of the innovation, the organizations, and the context (Greenhalgh et al., 2004). An unresolved question is how much readiness is necessary in order to successfully implement an innovation.

The heuristic does not directly address the distinction between internal and external motivations (Deci & Ryan, 2000a, 2000b). We recognize that this may be an area of fruitful research, especially because source of an innovation can be very different (e.g. top-down mandates versus the result of an internal process). As stated before, mandates often have a positive influence on increasing motivation, but do not have an impact on the overall capacities of an organization (Beidas et al., 2013; Hall & Hord, 2010). Greater exploration into how internal versus external motivations translate to a collective level would help enhance the work of a support system.

We also see the need for additional research around the relative weight of each of the components for different innovations. We anticipate that certain innovations may have a greater need for certain components of organizational readiness. However, there is generally an inverse relationship between research precision and practical utility. The more we specify conditions and relative weights of each component of readiness for a particular innovation in a particular setting, the less likely we can generalize across contexts and different innovations. In addition, if the heuristic becomes more complicated, it may become less likely to be used by both the Support System and Delivery System. In the spirit of a practical implementation science, this tradeoff must be negotiated carefully.

Determining the relationship of the readiness components to outcomes (Proctor et al., 2009) would provide information about the components that are the most influential and consequently allow for more specialized Support System focus. Further research and synthesis is needed to determine which types of tailored strategies are best practice for the specific organizational readiness constructs (Armenakis et al., 1993; Glisson & Schoenwald, 2005; Glisson, 2007; Powell et al., 2012; Wandersman et al., 2012). We see this as useful for those engaged in both implementation research and implementation support.

The heuristic is not meant to be a comprehensive model of program development and implementation. Rather, the purpose of $R=MC^2$ is to practically and succinctly frame organizational readiness that suggests directions for improvement in how both the Support and Delivery System can facilitate quality implementation of innovations. The use of this heuristic allows the Support System to be proactive during the entire implementation process (planning, monitoring, and evaluating) by identifying specific factors that facilitate or inhibit the use of an innovation. At this time, we are incorporating this model of

organizational readiness into a variety of projects to enhance organizations' abilities to implement evidenced-based interventions. These translational projects include improving substance abuse treatment models to deliver recovery-based services, developing after-school fitness programs, supporting a large-scale educational technology integration initiative, promoting sustainability in organizations that deliver teen pregnancy prevention interventions, and enhancing graduate-level clinical psychology training. We predict that the use of the $R=MC^2$ heuristic can better inform and ultimately direct the type of support that can be used to implement effective innovations and improve the likelihood of outcomes.

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Appendix A

Table 4

Glossary of Important Terms:

Term	Definition
Delivery System	The organization(s) or community setting that puts an innovation into practice (Wandersman et al., 2008)
Innovation	Any policy, program, or process that is new to a setting (e.g. Hall & Hord, 2010; Rogers, 2003)
Innovation-Specific Capacity	The human, technical, and fiscal conditions that are important for successfully implementing a *particular* innovation with quality (Flaspohler et al., 2008).
Interactive Systems Framework for Dissemination and Implementation (ISF)	Details the structures and functions that work bi-directionally to bridge science and practice (Wandersman et al., 2008)
General Capacity	Activities related to maintaining a functioning organization (e.g., maintaining sufficient staffing, developing organizational leadership) and connecting with other organizations and the community (Wandersman et al., 2008)
Motivation (organization-level)	Perceived incentive and disincentives that contribute to the desirability to use an innovation.
Practical Implementation Science	Scientific study of the translation of empirical implementation findings into user-friendly resources (Meyers et al., 2012b)
Proactive implementation supports	The use of tools, training, technical assistance (TA), and quality assurance/ quality improvement (QA/QI) processes to build components of readiness to enhance implementation.
Quality Implementation	Putting an innovation into practice so that it has its intended outcomes (Meyers et al., 2012)
Support System	The organization (or groups of organizations) that support the work of those who will put the innovations into practice (Wandersman et al., 2008).

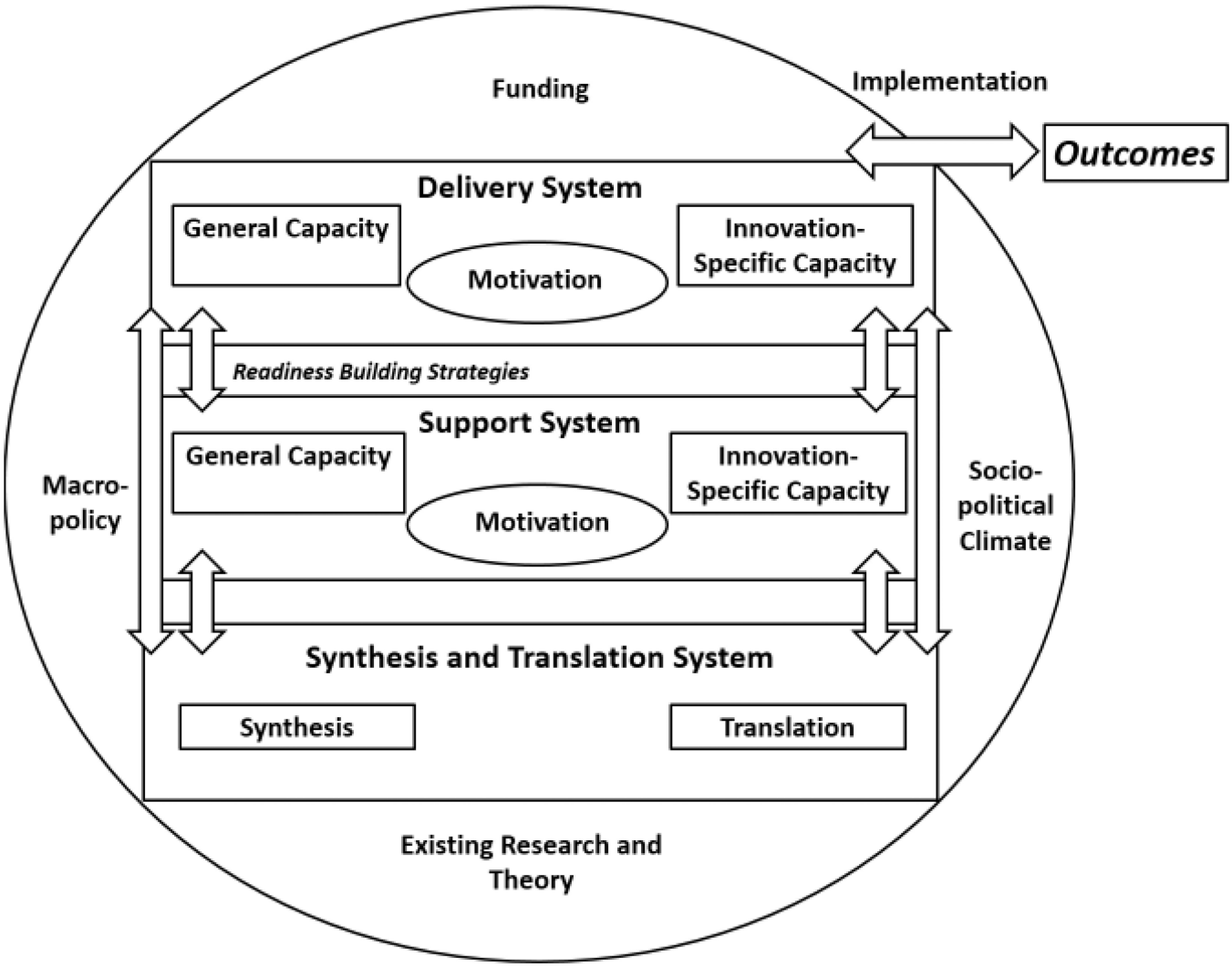

Figure 1.
Interactive Systems Framework for Dissemination and Implementation with Motivation Added

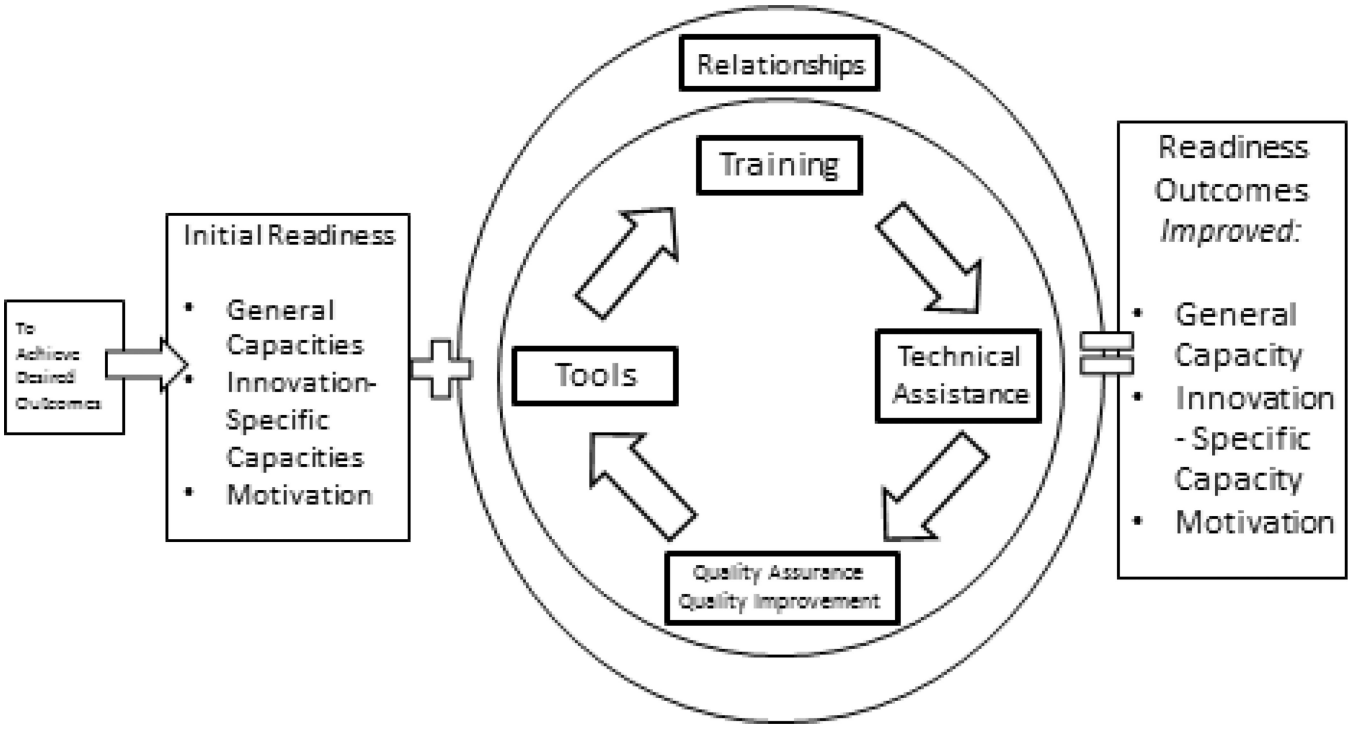

Figure 2.
Building Organizational Readiness through an Evidence-Based System for Implementation Support (EBSIS)

Table 1

Factors that Influence Motivation for Innovation (non-exhaustive)

Influences on Motivation	Definition	References
Relative Advantage	Degree to which a particular innovation is perceived as being better than what it is being compared against; can include perceptions of anticipated outcomes	Armenakis et al., 1993; Damschroder et al., 2009; Gladwell, 2001; Hall & Hord, 2010; Rafferty et al., 2013; Rogers, 2003; SAMHSA, 2010; Schoenwald & Hoagwood, 2001, Weiner, 2009
Compatibility	Degree to which an innovation is perceived at being consistent with existing values, cultural norms, experiences, and needs of potential users	Chinman et al., 2004; Durlak & Dupre, 2008; Fetterman & Wandersman, 2005; Greenhalgh et al., 2004; Rafferty et al., 2013; Rogers, 2003; Simpson, 2002
Complexity	Degree to which innovation is perceived as relatively difficult to understand and use	Damschroder & Hagedorn, 2011; Fixsen et al., 2005; Greenhalgh et al., 2004; Meyers, Durlak & Wandersman, 2012; Rafferty et al., 2013; Wandersman et al., 2008.
Trialability	Degree to which an innovation can be tested and experimented with	Armenakis et al., 1993; Greenhalgh et al., 2004; Rapkin et al., 2012; Rogers, 2003.
Observability	Degree to which outcomes that result from the innovation are visible to others	Beutler, 2001; Chinman et al., 2004; Damschroder et al., 2009; Ford et al., 2008; Rossi, Lipsey, & Freeman, 2004
Priority	Extend to which the innovation is regarded as more important than others	Armenakis et al., 1993; Damschroder et al., 2009; Klein, Conn, & Sorra, 2001

Table 2

General Organizational Capacities (non-exhaustive)

Types of General Capacities (non-exhaustive)	Definition	Authors
Culture	Expectations about how things are done in an organization; how the organization functions	Beidas et al., 2013; Drzensky et al., 2012; Glisson, 2007; Glisson & Schoenwald, 2005; Hemmelgarn et al., 2006; Livet, Courser, & Wandersman, 2008
Climate	How employees collectively perceive, appraise and feel about their current working environment	Aarons et al., 2011; Beidas et al., 2013; Damschroder et al., 2009; Glisson, 2007; Greenhalgh et al., 2004; Hall & Hord, 2010; Lehman et al., 2002
Organizational Innovativeness	General receptiveness toward change; i.e., an organizational learning environment	Damschroder et al., 2009; Fetterman & Wandersman, 2005; Greenhalgh et al., 2004; Klein & Knight, 2005; Rafferty et al., 2013; Rogers, 2003
Resource Utilization	How discretionary/uncommitted resources are devoted to innovations	Armstrong et al., 2006; Greenhalgh et al., 2004; Klein et al., 2001; Rogers, 2003; Simpson, 2002
Leadership	Whether power authorities articulate and support organizational activities	Aarons & Sommerfield, 2012; Becan, Knight, & Flynn, 2012; Beidas et al., 2013; Fixsen et al., 2005; Grant, 2013; Rafferty et al., 2013; Simpson et al., 2002
Structure	Processes that impact how well an organization functions on a day-to-day basis:	Damschroder et al., 2009; Flaspohler et al., 2008; Greenhalgh et al., 2004, Lehman et al., 2002; Rafferty et al., 2013; Rogers, 2003
Staff Capacity	General skills, education, and expertise that the staff possesses	Flaspohler et al., 2008; McShane & Van Glinow, 2009; Simpson et al., 2002

Table 3

Innovation-Specific Capacities (non-exhaustive)

Types of Innovation-Specific Capacities;	**Definition**	**Authors**
Innovation-Specific knowledge, skills, and abilities	Knowledge, skills, and abilities needed for the innovation	Fixsen et al., 2005; Greenhalgh et al., 2004; Simpson, 2002; Wandersman, Chien, & Katz, 2012
Program Champion	Individual(s) who put charismatic support behind an innovation through connections, expertise, and social influence	Atkins et al., 2008; Damshroder et al., 2009; Greenhalgh et al., 2004; Gladwell, 2002; Grant, 2013; Rafferty et al., 2013; Rogers, 2003
Specific Implementation Climate Supports	Extent to which the innovation is supported; presence of strong, convincing, informed, and demonstrable management support	Aarons et al., 2011; Beidas et al., 2013; Damschroder et al., 2009; Fetterman & Wandersman, 2005; Greenhalgh et al., 2004; Hall & Hord, 2010; Rogers, 2003; Schoenwald & Hoagwood, 2001; Weiner et al., 2008.
Interorganizational Relationships	Relationships between a) providers and support systems *and* b) between different provider organizations that are used to facilitate implementation	Aarons et al., 2011; Flaspohler et al., 2004; Powell et al., 2012