

Model
Demonstration
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Center

SUSTAINMENT OF MODEL DEMONSTRATION PROJECTS: FINDINGS FROM FOLLOW-UP STUDIES

August 2015

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SRI International

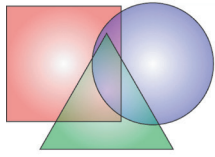
About this Brief

This brief was developed as part of the Model Demonstration Coordination Center (MDCC) operated by SRI International for the U.S. Department of Education, Office of Special Education Programs. The authors thank the model demonstration project leaders who participated in the follow-up studies and shared findings with MDCC.

Suggested Citation:

Wagner, M., & Shaver, D. (2015). *Sustainment of Model Demonstration Projects: Findings from Follow-Up Studies*. Menlo Park, CA: SRI International

The Model Demonstration Coordination Center has been funded with Federal funds from the U.S. Department of Education, Office of Special Education Programs, under contract number ED-CFO-10-A-0133. The project officer is Dr. Patricia Gonzalez. The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.



Model
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Overview of the Model Demonstration Coordination Center

The Research to Practice Division of the Office of Special Education Programs (OSEP), U.S. Department of Education, is charged with addressing the gap between what research demonstrates to be effective programs and practices for improving outcomes for children and youth with disabilities and what schools and programs implement. An important part of that pursuit is the technical assistance, model demonstration, and dissemination activities OSEP has been supporting since 1970. Since 2005, OSEP has funded seven cohorts of model demonstration projects (MDPs), each of which has focused or is focusing on a single new and promising (or perhaps poorly understood or implemented) practice, procedure, program, or technology that is deemed to have high potential for improving outcomes for children and youth with disabilities. Each project implements its model in typical settings and assesses its outcomes.

Also since 2005, OSEP has been funding the Model Demonstration Coordination Center (MDCC) at SRI International. MDCC staff members have worked with the MDPs to establish consistent design elements, such as sample definition and selection, data collection methods and timing, and instrumentation. For some cohorts, MDCC staff members also have synthesized cross-MDP data. Consistent data collection within a given cohort permits comparison of the relative ease with which the models were implemented with fidelity and supports comparison of the relative outcomes achieved when the unique approach of each model was implemented. Comparing and contrasting implementation experiences and model sustainability and spread within and across cohorts also enables MDCC to distill from MDP data the factors that have hindered and promoted these aspects of model implementation.

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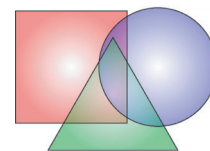
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Abbreviations and Acronyms

EI	early intervention
IDEA	Individuals with Disabilities Education Act
IEP	individualized education program
MDCC	Model Demonstration Coordination Center
MDPs	model demonstration projects
OSEP	Office of Special Education Programs
RtI	response to intervention

Introduction



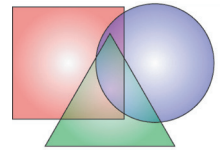
The mission of the U.S. Department of Education’s Office of Special Education Programs (OSEP)¹ is to improve results for infants, toddlers, children, and youth with disabilities by providing leadership and financial support for the states, districts, and early childhood programs that serve them, as authorized under the *Individuals with Disabilities Education Act (IDEA)*. One emphasis of OSEP’s work is promulgating the use of evidence-based practices in serving children and youth with disabilities. This effort is facilitated by the increased attention given in recent years to identifying evidence-based practices in education broadly (Slavin, 2002, 2008; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007), in special education in particular (Cook et al., 2014; Cook & Cook, 2011; Cook & Odom, 2013), and in related fields (e.g., Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Odom et al., 2005; Test et al., 2009). Standards for identifying evidence-based practices have been identified for special education research (Gersten et al., 2005; Horner et al., 2005) and for education research generally (Institute of Education Sciences, 2014).

Despite the expanded portfolio of evidence-based practices and programs available to educators and others who serve children and youth with disabilities and their families, some have concluded that “there is little evidence suggesting that the [research-to-practice] gap has been meaningfully reduced” (Cook & Odom, 2013, p. 136) at least partially because “the science related to implementing these programs with fidelity and good outcomes for consumers lags far behind” (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005, p. vi). Compared with the first phase of translating research into practice—identifying evidence-based practices—the second phase, adopting and sustaining them, has been described as “messy and poorly funded” (Cook & Odom, 2013, p. 140; Hiss, 2004). Nonetheless, those in the emerging field of implementation science (Eccles & Mittman, 2006; Forman et al., 2013) are steadily compiling a research base on factors that facilitate and hinder implementation of evidence-based practices (Durlak & DuPre, 2008; Forman, Olin, Hoagwood, Crowe, & Saka, 2009), including implementation fidelity and related measurement challenges (Carroll et al., 2007; O’Donnell, 2008; Zvock, 2009). Attention also is being given to assessing the extent to which implemented evidence-based practices are sustained over time (Adelman & Taylor, 2003; Cook, Cook, & Landrum, 2013; McIntosh et al., 2013; Savaya & Spiro, 2011; Scheirer & Dearing, 2011; Stirman et al., 2012). Enough interest in sustainment has emerged that some contend that “evaluations of social programs, especially innovative and experimental programs, are incomplete if they do not address the issue of sustainability” (Savaya & Spiro, 2011, p. 26).



¹ <http://www2.ed.gov/about/offices/list/osers/osep/mission.html>

OSEP's investment in the State Implementation and Scaling-up of Evidence-based Practices Center has supported this increasing attention to implementation and sustainment, as has its funding of the Model Demonstration Coordination Center (MDCC) at SRI International. MDCC has coordinated the work of seven cohorts of OSEP Model Demonstration projects (MDPs), as well as three cohorts of implementation teams supported by OSEP's Stepping-Up Technology Implementation program. MDP and Stepping-Up grantees incorporate practices, procedures, and/or technologies that have been shown to be efficacious into models or technology tools that are then implemented in multiple real-world settings. Using information provided by grantees, MDCC has synthesized findings within and across cohorts to identify factors that lead to high-quality implementation, sustainment, and wider adoption of evidence-based practices. The purpose of this brief is to share findings from follow-up studies that were conducted to examine model sustainment more closely.



Follow-up Studies

By 2013, three cohorts of MDPs (C1, C2, and C3) had completed their projects, providing OSEP the opportunity, through MDCC, to extend analyses of their implementation experiences to include the extent of their models' sustainment in their original implementation sites and whether the models had spread to other sites. C1 grantees implemented models that used progress monitoring within a response to intervention (RtI) framework to improve the reading skills of elementary school students. C2 grantees each implemented a positive behavior interventions and supports model for students with the most serious behavior problems at school. Grantees in C3 demonstrated various approaches to implementing early childhood language interventions that targeted children with significant language disorders or delays who were eligible for early intervention services or early childhood special education. Given the marked differences in the content areas, age groups, and organizations involved in the three MDP cohorts (four MDPs in each cohort), MDCC staff were able to examine the similarities and differences in experiences with model sustainment in diverse contexts (see Table 1).

The follow-up studies for C1 and C2 were conducted in 2011 and 2012, respectively, 2 years after each cohort had completed its work. The C3 follow-up study was conducted in 2013, when those MDPs had been largely uninvolved with their implementation sites for as little as 3 months to as long as 2 years. Sustainment in this context is considered to be the maintenance of model components and activities after the conclusion of MDP grant support (Lyon, Frazier, Mehta, Atkins, & Weisbach, 2011; Scheirer & Dearing, 2011; Schell et al., 2013). OSEP funded the C1, C2, and C3 grantees, through MDCC, to document the extent of sustainment of core components in their model demonstration sites as originally implemented, those components that had been adapted or discontinued, and the extent to which the models, in whole or part, had been implemented more widely within those sites and beyond.



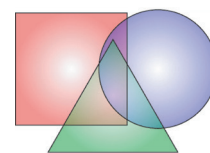


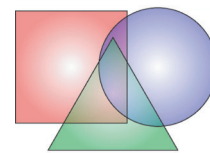
Table 1. Cohorts of OSEP Model Demonstration Projects Involved in Post-Implementation Follow-up Studies

Cohort 1: Progress Monitoring Interventions for Elementary School Reading (2006–2009)	
Target population	Students in first through fourth grades in general education and special education classes
Core intervention components	<p>Progress monitoring interventions within a response to intervention (RtI) framework, featuring:</p> <ul style="list-style-type: none"> ▪ A measurement model (e.g., the progress monitoring data collected, frequency, who was responsible, supporting technology used) ▪ Procedures for using progress monitoring data to track student progress, modify instruction for students making insufficient progress, identify students who may be eligible for special education services because of a reading disability, and develop individualized education program (IEP) goals.
Cohort 2: Tertiary Behavior Intervention Models in Elementary and Middle Schools (2007–2010)	
Target population	Elementary and middle school students, in regular and special education classrooms, with serious behavior problems at school who had not been responsive to primary behavioral strategies or secondary behavioral interventions
Core intervention components	<p>Tertiary interventions within a schoolwide positive behavior support framework, featuring</p> <ul style="list-style-type: none"> ▪ Pre-established primary (tier 1) and secondary (tier 2) prevention programs ▪ Multidisciplinary team approach ▪ Data-driven screening process ▪ Positive behavior support plans driven by functional behavioral assessments ▪ Individualized tertiary behavior interventions ▪ Progress monitoring to assess response to intervention.
Cohort 3: Early Childhood Language Interventions (2008–2011)	
Target population	Children ages birth through 5 with significant language disorders or delays
Core intervention components	<p>Language interventions within the early intervention (EI) service delivery and early childhood special education service systems, featuring</p> <ul style="list-style-type: none"> ▪ Evidence-based functional language interventions delivered in natural settings by adults who cared for or worked directly with participating children ▪ Training and support for parents and providers/teachers in implementing evidence-based, language-promoting strategies in daily activities ▪ Use of assessments and data in guiding personalized services ▪ Efforts to maintain continuity of the model strategies across Part C Early Intervention and Part B preschool programs.

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“The atmosphere, environment, and conversation surrounding [model] sustainability and influence on student achievement and instructional practice throughout the district were nothing less than exuberant.”

—Model Demonstration Project Leader
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In preparing for the follow-up studies, MDCC staff members worked with the MDP leaders to develop protocols for qualitative data collection (typically focus groups and interviews) and a follow-up study template² for reporting the resulting findings. Some MDP teams also conducted fidelity checks during observations of the models and surveyed teachers or service providers regarding their current use of model practices. The follow-up study results have been reported more fully in cohort-specific reports (Wagner, Gaylor, Fabrikant, & Shaver, 2013; Wagner, Lenz, & Shaver, 2011; Yu, Wagner, & Shaver, 2012).³



Model Sustainment at Original Sites

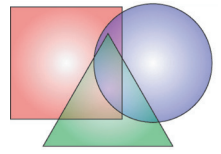
The purpose of this brief is to examine organizational-level sustainment, that is, the extent to which the schools, districts, and programs involved in MDP implementation were able to sustain the models and had the capacity to continue sustaining them. Therefore, sustainment was assessed at the organization level, with the nature of the organization differing for each cohort: elementary schools for C1, school districts for C2, and individual early intervention and early childhood programs that differed widely in size and organizational complexity for C3. Fundamental to ratings of organizational-level sustainment was the degree of continued use of model practices by staff members who had participated in model implementation. However, individual-level sustainment was insufficient to warrant a rating of full sustainment, as defined here. Full sustainment meant having resources in place (e.g., leadership support, access to model-related professional development) to support ongoing quality implementation by existing staff and to instruct new staff in implementing the core intervention components with fidelity. These supports are needed to prevent model implementation from eroding in the face of competition for resources from other initiatives or as a result of staff turnover.

Using the follow-up study templates provided by MDP leaders, MDCC staff rated each organization involved in the MDPs as *fully sustained* (core model components were being implemented widely and supports and resources were in place to support implementation), *partially sustained* (some but not all core components were in place, and/or some but not all relevant personnel were implementing them), or *not sustained* (little or no use of model practices). Across all the original sites (i.e., schools, districts, or programs) involved in C1, C2, and C3, half had fully sustained their model, a quarter had partially sustained it, and a quarter did not sustain it (Figure 1). The degree of model sustainment was not known for three sites (one in C1, two in C2) because they were not included in the follow-up studies. In many of the fully sustained sites, enthusiasm for the model had been maintained. For example, one MDP leader observed, “The atmosphere, environment, and conversation surrounding [model] sustainability and influence on student achievement and instructional practice throughout the district were nothing less than exuberant.”

2 The templates included prompts for MDP leaders to summarize findings about the extent of sustainment at each site, the components that were or were not sustained, the supports that were being provided (e.g. professional development), and the factors contributing to or hindering sustainment.

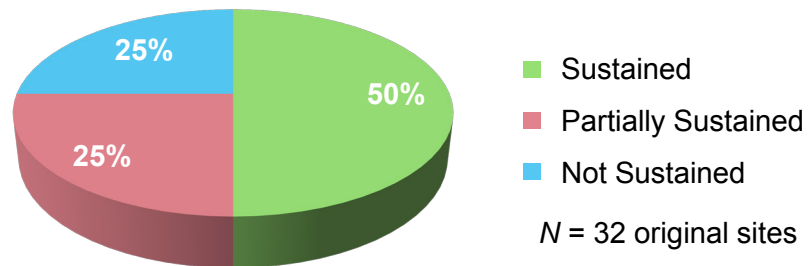
3 MDCC reports are available at http://mdcc.sri.com/prod_serv.html

In interpreting the findings regarding model sustainment in multiple cohorts and MDPs, it is important to acknowledge that sustainment was not always an explicit MDP goal. The primary objective of some MDPs was to test whether individual model components that research had demonstrated could improve outcomes could be integrated and made to work effectively in real-world settings. In these instances, MDP leaders often gave more attention to model feasibility than sustainment, noting that they needed to understand the practical aspects of model implementation, including the supports needed, before they could consider helping sites prepare for model sustainment. Nonetheless, the range of sustainment success raises the question of what made the difference.



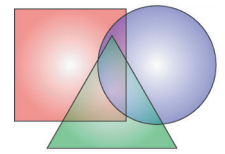
The next section addresses this question by reporting factors that MDP staff identified as promoting or hindering model sustainment. The final chapter highlights some conclusions MDCC staff have drawn from the follow-up studies regarding model sustainment.

Figure 1. Model Sustainment at Original Sites



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Seeing positive results appeared to be a strong motivator for sustained implementation in MDPs across the cohorts.
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Factors Related to Model Sustainment and Spread



An expanding body of implementation research has identified a range of factors that have been shown to contribute to or inhibit the sustainment and spread of specific interventions or larger scale programs. Below, we briefly summarize factors that are appropriate to the MDP context, organized by the major components of the conceptual framework that guided MDCC's work (Figure 2, as adapted from Fixsen et al., 2005). This framework suggests that factors related to model characteristics, core implementation components, and implementing organizations and contexts might help explain variations in the MDPs' implementation experiences, including model sustainment and spread. Examples from the cohort follow-up studies are then brought to bear in assessing the applicability of the research-based factors to the cohorts' implementation experiences.

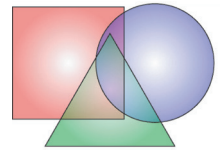
Model Characteristics

The sustainment literature supports the notion that the characteristics of an intervention itself can be important in its sustainment (Savaya & Spiro, 2011; Stirman et al., 2012). Three key concepts from the body of research on the diffusion of innovations (Rogers, 2003) helped focus the analyses of variations in the models implemented by MDPs and how those variations may have related to model sustainment and spread.

Relative advantage—Relative advantage has been defined as “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 2003, p. 229). For some time, researchers have recognized that the odds of sustaining an intervention can be increased if implementers see positive results relatively quickly (Feldstein & Glasgow, 2008; Santangelo, 2009; Shediak-Rizkallah & Bone, 1998). Seeing positive results appeared to be a strong motivator for sustained implementation in MDPs across the cohorts. For example, general education teachers in one C1 school highlighted the instructional improvements associated with the model: “Our system [now] is about changing instruction, not sending students out to get fixed [by special educators].” Another school's staff “appreciated and valued the teaming structure Rtl helped to create.” Positive systems-level changes also were evident. One administrator reported that MDP involvement enabled his district to create a more comprehensive districtwide model for instructional evaluation, tiered interventions, and special education referrals. Staff of one sustaining school asserted that within the Rtl framework, “When students are referred to special education they qualify, so the system is more efficient.” These policy and practice changes coalesced in generating improved student achievement, described by one MDP staff member as “positive,” “miraculous,” and “lifesaving.”

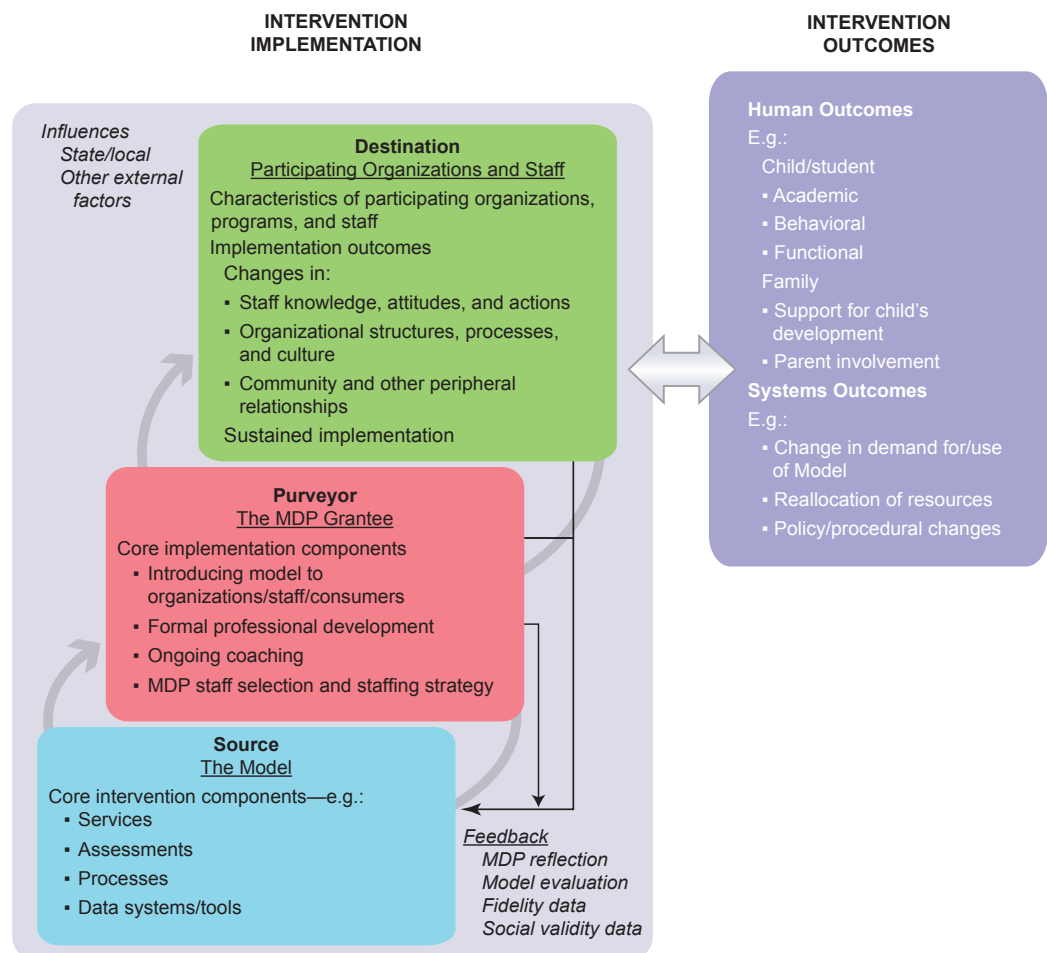
The C2 follow-up study team also saw benefits attributed to one or more of the models, including improvements in accurately identifying and addressing

students' behavioral problems and needs. For example, among the districts that had maintained their behavior interventions, progress monitoring and data-based decision-making had “been built into the culture.” The end goal of continuously monitoring progress and reviewing data in regularly scheduled staff meetings was intact because, as one district coach explained, “It works for us.” Improvements in student behavior and academic achievement also were evident, as in an MDP site where individual student outcomes demonstrated “an increase in the number of students in less restrictive environments, improved state test scores for IEP students, a steady decline in office discipline referrals over time, and increased use of data.”



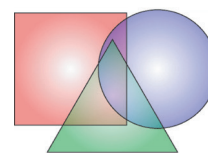
In another example, positive student/child outcomes created an impetus for the sustainment of C3 models. One MDP leader reported that practitioners had commented on “how remarkable it was to witness the growth in the children they worked with and that it served as an incentive to keep using the strategies.” Another MDP staff member concurred: “A project like this needs continuous buy-in and ...one of the ways to achieve that is by showing continuous effects.”

Figure 2. Conceptual Framework for Model Implementation and Outcomes*



*Adapted from *Implementation Research: A Synthesis of the Literature* (Fixsen et al., 2005)

Compatibility—Rogers (2003) defined compatibility as “the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (p. 240). One indicator of compatibility was the extent to which a model was aligned with practices and priorities already in place in implementing organizations (Shediak-Rizkallah & Bone, 1998). For example, a C1 MDP leader described the schools that had sustained all the MDP components as having “a strong history of using the problem solving model,” a core model component; thus, they had implemented and sustained the model with relative ease. Findings from the C2 follow-up study also revealed that schools and districts that had sustained the models were comfortable enough to begin adapting them to their own preferences, needs, and cultures while remaining true to the essence of the original models. The C3 MDPs’ emphasis on encouraging language learning in naturalistic settings was compatible with some of the programs and practitioners they worked with but not all. One MDP leader acknowledged that implementation had not gone smoothly in a program where a key member of the child-serving team “philosophically had a different approach that was not naturalistic.” Philosophical views regarding the appropriate level of inclusion of students with disabilities in classroom activities were an important contextual factor for another MDP: “We did well in strong classrooms that had a strong inclusion model and less well in those that didn’t.” C3 MDP staff members concurred that working in programs with an organizational culture that supported model practices was critical for “sticking with” an intervention over time. For example, in one site service providers teaming together to serve children and families “was a trait they naturally had because of the administrative culture.”



Complexity—According to Rogers (2003), complexity is “the degree to which an innovation is perceived as relatively difficult to understand and use” (p. 257). Conventional wisdom posits that “simple programs are easier to explain, easier to sell, and easier to manage” (Elias, Zins, Graczyck, & Weissberg, 2003, p. 309) and can be easier to sustain (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004). Yet the complexity of the various models implemented by the C1 MDPs was not reported to be a factor in the models’ sustainment or spread. Nor was complexity suggested as an issue for C2. In fact, in one MDP the complexity of engaging in multiple teams was reported to be beneficial because it furthered district and school staffs’ knowledge and understanding of the model. On the other hand, staff members of an early language intervention MDP asserted that one program’s eager uptake of their model’s language promotion strategies was in part due to their simplicity: “We heard from the OTs [occupational therapists] and the PTs [physical therapists] how they really valued this intervention because it helped them address language [issues with children and families] in ways that were simple and accessible.”

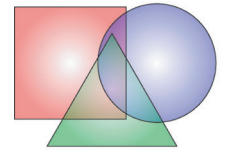


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“We built sustainability into the project as a core implementation component from day 1. Your job is to do everything you can so the project is still there when you leave.”

—Model Demonstration
Project Leader

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Core Implementation Components



Follow-up study findings indicated that core implementation components were important contributors to model sustainment. Planning ahead for sustainment and encouraging collaboration were two strategies used. For example, one principal investigator reported that “We built sustainability into the project as a core implementation component from day 1. Your job is to do everything you can so the project is still there when you leave.” Another MDP’s strategy also was a key factor in sustainment, according to the principal investigator: “Our strategy was to build more of a grassroots effort; teachers owned it and carried it through, which has contributed to long-term success.” C3 MDP leaders reported that their models’ encouragement of collaboration was an advantageous implementation strategy. For instance, a MDP leader reported that “the most important lesson... was that collaborative practices in professional development are essential to the sustainment of any intervention.... Soliciting the teachers’ input, feedback, and ideas from the planning phase onward is critical to building capacity and sustaining the model.” In addition, another MDP leader reported that “close relationships between practitioners helped to facilitate the continued use of the strategies.... They often used informal conversations with one another to brainstorm and discuss their use of strategies.”

The coaching provided to practitioners also was seen as a key ingredient in implementing and sustaining the models, as research has noted (Boudah, Logan, & Greenwood, 2001; Kratochwill, Volpiansky, Clements, & Ball, 2007). Sites that developed resources and personnel to continue offering PD and coaching after the grant’s completion were more successful than other sites in sustaining the models, according to MDP leaders.

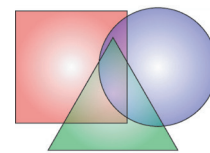
The staffing approaches MDP teams used during model implementation also may have affected model sustainment. A typical approach was for MDP staff to train site personnel who were responsible for delivering instruction or services to children. In some cases, MDP teams hired and trained staff to provide model-related services, a strategy that was often adopted when MDP leaders were focused on understanding model feasibility. The latter approach was used by several MDPs, and when the projects ended, capacity was insufficient at the host organizations to sustain the models.

In addition, the variety of materials, tools, and technologies MDPs provided to implementing sites were considered to be important for sustainment and spread. For example, C1 MDP grant funds helped pay for intervention curricula and materials and for handheld devices to record and manage progress monitoring data in one site. Similarly, another MDP invested in significant upgrades to an online assessment and data management resource to ease implementation of the model’s assessment component. School staff at another MDP site mentioned the usefulness of the forms and written guidelines that were developed during the MDP, indicating that they were still widely used throughout the district. One C2 MDP team learned that at follow-up, many schools in one district were continuing to use a discussion guide that the

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“It’s all about leadership at every level: district, building, teachers.”

—Model Demonstration Project Leader
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MDP had developed to help schools reflect on, plan, and record improvements to their tier 2/3 systems. A C3 MDP staff member contended that the graphing tool developed during the project to display children’s communication growth was still powerful in showing parents the value of using the model strategies to promote their children’s language learning.



Implementing Organizations

Researchers have examined a broad range of within-organization factors that can significantly affect the implementation and sustainment of interventions (e.g., Stirman et al., 2012).

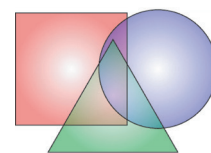
The buy-in of key stakeholders can be critical to marshaling the resources needed for intervention implementation (Greenhalgh et al., 2004; McDougal, Clonan, & Martens, 2000) as well as sustainment (Scheirer, 2005). All C1 MDPs agreed with one MDP leader who stated, “It’s all about leadership at every level: district, building, teachers.” One C1 principal investigator asserted that district support was critical for sustaining the model interventions because district leaders could provide schools with the resources for “training, educating, and reeducating staff” as they implemented the model over time. Similarly, a C2 MDP leader observed, “Increasing the understanding and support for the...model among district-level leaders was more valuable for implementation than effecting change in school leadership.” However, some argue that sustainment requires not just buy-in, but “a shift in ownership” such that the implementing organization, not the purveyor of the intervention, adopts the intervention as its own (Coburn, 2003). Speaking about ownership, one MDP leader said, “When there was that [administrator] energy, that buy-in, that ability to make [the model] part of their system, the model had been sustained longer.”



Characteristics of the adults who must take on the work of implementing interventions and keeping them going can impact implementation and sustainment. How well prepared and experienced they are for the job they are expected to do and their level of commitment to the work can be critical to implementation success (Savaya & Spiro, 2011). Explaining implementation challenges, an MDP leader stated, “We underestimated the skills and management strategies that needed to be in place before we could begin to do what we did.” Another confirmed that the environments the intervention was delivered in “were sometimes too chaotic to provide as much individual attention to children as we would like,” in part because of staff’s inexperience or lack of skills in managing the intervention environments well. Without strong implementation during the MDP, there was little impetus for sustainment.

Another characteristic of sites that can have implications for sustainment is job turnover rate (Sindelar, Shearer, Yendol-Hoppy, & Liebert, 2006)—the extent to which key staff stay on the job long enough that a “critical mass

of adherents to an innovation is in place” (Elias et al., 2003, p. 309). Staff turnover was reported to be a serious obstacle to sustainment across the cohorts. At C1’s follow-up, the superintendent’s position in one district had changed hands twice since the MDP ended, and the district directors of personnel, special education, and professional development, as well as the principal of one of the MDP schools, were expected to retire, presenting “important challenges for future sustainability.” MDP staff members were concerned about model sustainment with fidelity because “Some recent administration hires do not have the same understanding of the...model as those who were involved in its creation.” In C2, one MDP leader reported that tier 3 was never really established in one school because a “continual change in leadership” resulted in a lack of district-level support for the tiered behavior model. When staff members of a C3 MDP returned to one program to assess the extent to which model strategies were still being used, they discovered there was “basically nobody left there” and that the program had “gone through three directors” since the MDP ended its work.



Organizational culture and priorities. Organizational characteristics also play an important role in the uptake and sustainment of innovations (e.g., Rosenheck, 2001; Weiner, Belden, Bergmire, & Johnston, 2011). MDP leaders reported that models that were well aligned with the priorities of implementing organizations were likely to result in sustained implementation. Some MDPs discovered that the organizational culture or priorities of the sites they had chosen to work in were not well aligned with the models they were attempting to implement. For example, one C1 site withdrew from the MDP after a year because its commitment to a whole-language instructional approach would not accommodate the teaching principles embedded in the model being implemented in that district. One C2 MDP was unable to fully implement its model because needed supports in its two districts were invested in higher priority areas. Perhaps more important, few C2 sites were able to implement tier 3 interventions, the OSEP-defined focus of the MDPs, and fewer sustained them because shoring up weaknesses in tier 1 and tier 2 interventions were top priorities for the MDPs’ efforts.

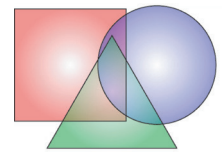
Implementation Contexts

The environments that destination organizations work in can encompass “a shifting landscape of sociopolitical priorities and politics at the county, state, and federal levels” (Han & Weiss, 2005, p. 666) that can either support or hinder model sustainment and spread. When interventions or programs are implemented in schools, district context can be particularly influential (Fuchs, Fuchs, Harris, & Roberts, 1996; Santangelo, 2009) and can have important implications for what goes on in classrooms (Coburn, 2003). In many of the C1 and C2 sites that had sustained the models, district-level leadership and resources were cited as facilitators of sustainment.

C2 stood alone in reporting that competing district initiatives were a cause of concern for implementation, sustainment, and spread. This was particularly



noteworthy in one MDP, where the “large number of initiatives with overlapping goals” made it difficult to maintain a “systematic, sustainable framework that supports a continuum of behavior interventions.” Competing initiatives also can cause confusion among staff members who are responsible for implementation.



For instance, staff members in one MDP site were not able to draw the connection between an academic tiered model and a behavioral support tiered model, which reportedly contributed to some teachers and staff becoming frustrated by two seemingly disparate models and ultimately choosing to abandon the behavior model for the academic Rtl initiative.

The Great Recession of 2007–2009 was a particularly powerful contextual influence for the MDPs. For example, C1 MDPs completed their work in 2009, when “many school districts were able to cut their expenditures with minimal impact on students” and returned there in 2011, by which time “most districts [had] had to make cuts that affect students more directly” (Hull, 2010). All C1 MDP leaders agreed that a shortage of resources had been a significant challenge to model sustainment and that the challenge was expected to increase as districts and schools experienced additional budget cuts going forward. In both C1 and C2 sites, budget cuts had resulted in staffing reductions, school closures, and the elimination or reduction of district-provided professional development, factors that strained the capacity of remaining staff and resources to support model implementation. Even in 2013, one C3 MDP reported that “All of the programs that we have come into contact with and others across the state are pretty strapped.” Another indicated there was “chronic underfunding of programs for any sort of innovative model,” which resulted in staff being “stretched quite thin,” leaving little time for professional development or other supports for model sustainment efforts.



C3 MDPs identified a contextual factor that was unique to them among the three cohorts because they did not work in schools or school districts. The C3 MDPs reported that early intervention staffing and reimbursement policies, generally determined at county or state levels, hindered staff training and collaboration and teaming opportunities at the program level. An MDP leader explained that “There is very little opportunity for [coaching] support...because basically what you have is individual practitioners with very little connection to any organization at all.” A similar situation was evident at another MDP’s program, leading an MDP staff member to comment that “When people are hourly contract employees, it’s really difficult to fit any sort of supervision or training into their schedule.” Another commented that in a contract-based system, “Given the logistical barriers of organizing 50 to 100 practitioners, even if you had a coach, cohesion among practitioners would be difficult.”

Finally, having access to a systems-level support enabled some MDPs to leverage resources that were said to contribute to sustainment and

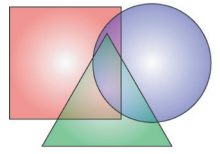


The “real emphasis should be on systems... and how to infuse capacity building so that [the model] will live on.”

—Model Demonstration
Project Leader

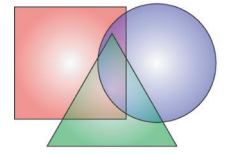


spread. For example, the backing of the statewide technical assistance network in one C1 state, which engaged in various ways in RtI training and implementation statewide, played a key role in the MDP model spreading throughout the state. Similarly, one C2 MDP had full access to all districts in an existing statewide network to promulgate key features of its model. As an MDP principal investigator explained, the “real emphasis should be on systems...and how to infuse capacity building so that [the model] will live on.” A C3 example of the value of partnerships was apparent in one MDP’s collaboration with an online state early intervention system professional development provider, through which the MDP’s course on model strategies reached a substantially greater audience than the MDC staff could have generated on its own.



• • • • •
The widespread sustainment and spread of the progress monitoring models may have resulted in part because their focus was highly aligned with the policy priorities state and local education agencies placed on improving the academic performance of all students.
• • • • •

Conclusions



Follow-up study data indicated that almost all MDPs in each cohort achieved model sustainment to some degree in one or more sites. In total, half the original sites (schools, districts, or programs) involved in these MDPs had fully sustained the model beyond the life of the MDP. Some form or degree of spread of model practices to other sites or providers also had occurred. However, all three cohorts had MDPs with sites that dropped out of the project or where implementation was weak or not sustained. In addition to the factors cited in the preceding section, the content areas addressed by the cohorts and the readiness of sites for implementation form the backdrop for understanding how well the models were sustained. These factors are addressed below, followed by implications for implementation practice.

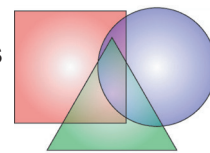
The Model's Content Focus

Each year, OSEP staff selects a single new and promising (or perhaps poorly understood or implemented) practice, procedure, or program that is deemed to have high potential for improving the outcomes of children and youth with disabilities to be the focus of that year's model demonstration projects. The three cohorts of grantees whose experiences are the subject of this document were charged with implementing progress monitoring approaches to elementary reading instruction (C1), tertiary behavior models for elementary and middle school students with serious behavior problems at school (C2), and early childhood language interventions to be used by early intervention providers and parents (C3). The choices of these particular interventions had significant implications for model sustainment and spread.

C1 MDPs arguably had the greatest success in sustaining and spreading their Rtl-based elementary school reading interventions, having fully sustained their models in 79% of the schools in which they were initially implemented. Two C1 MDPs saw their interventions fully sustained in their initial schools and spread throughout their districts and in their state. Another model was sustained in the majority of its initial schools and was the foundation for a districtwide Rtl initiative that shaped reading instruction in all elementary grades. Experiences with sustainment of the fourth model were more varied, but spread of its core components to several additional district MDP schools was reported.

The widespread sustainment and spread of the progress monitoring models may have resulted in part because their focus was highly aligned with the policy priorities state and local education agencies placed on improving the academic performance of all students, not solely students with disabilities. The *No Child Left Behind Act of 2002* launched the Reading First Program, the purpose of which was "to ensure that every student can read at grade level or above not later than the end of Grade 3" (Title I, Part B, Subpart 1, Section 1201). Nationwide, state and local education agencies and individual schools

adopted or adapted policies and concentrated resources on their elementary school reading programs. The C1 intervention models aligned well with achieving their reading achievement growth goals for all young readers.



The C2 MDPs had a narrower focus in that their interventions addressed the needs of the relatively small minority of students who exhibited serious behavior problems at school. Some C2 MDP leaders reported that competing initiatives in some of their intervention sites, often academically focused, were a significant challenge to implementing their behavior-oriented interventions. Regarding C3, although the importance of positive early learning experiences as a precursor to success in school was increasingly being recognized (e.g., Shonkoff & Phillips, 2000; Sylva, Melhuis, Sammons, Siraj-Blatchford, & Taggart, 2010), the decision to focus this cohort on promoting the language acquisition of infants and toddlers meant there were no strong organizational mechanisms akin to districts or schools for implementing, sustaining, or spreading model practices. C3 MDPs typically implemented their language interventions with individual practitioners, often contract employees, who were only loosely affiliated with an early childhood service-providing organization.

Therefore, the content focus and target population of the cohorts had implications for how well aligned the models were with local priorities and systems, which was a factor that was said to be associated with the degree of model sustainment after the completion of the MDP grants.

Site Readiness

Although the content focus of the various MDP cohorts may help explain some differences in implementing and sustaining models, there also was considerable variation across models within cohorts and sites within models that largely reflected differences in their readiness to implement the model. There were several examples in the three cohorts' implementation experiences of factors seriously hampering, and in some cases derailing, model implementation. Other factors did not threaten implementation or sustainment but initially required MDPs to develop an environment that would support implementation and thus the potential for sustainment. For instance, in each cohort, at least one MDP discovered that staff in one of its implementation sites lacked the foundational skills needed for understanding model components and successfully implementing them. MDP leaders could not proceed with components of their models until they developed the requisite skills, such as classroom management (C2), a basic knowledge of best practices in reading instruction (C1), or principles of early childhood development (C3).

These examples of site conditions that created serious obstacles to implementation and sustainment suggest that a more thorough assessment of the readiness of sites for implementation may have been warranted. Sites often were selected because they were conveniently located or MDP leaders had worked in those communities or schools in the past. Successful site selection entails carefully assessing the conditions in the candidate MDP sites, gauging

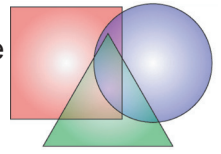




To achieve needed improvements in child and family outcomes, it is critical that evidence-based programs and practices be installed and supported with effective implementation practices that address these challenges.



the capacity and commitment of staff to implement a model, and determining whether key resources are or could become available to support implementation and sustainment. This assessment of potential MDP sites can help MDP staff determine whether



- a model would be compatible with a site’s culture, processes, and values (i.e., whether there is an organizational commitment to ongoing learning and change);
- there is buy-in from key stakeholders at several levels (e.g., district superintendent and special education director, school principal, teacher leaders), and
- key resources are available to support implementation (e.g., dedicated time for professional development and data-review meetings).⁴

Implications for Implementation Practice

Implementing evidence-based practices in real-world settings such as schools and early childhood programs is challenging. Decades of research on organizational change and the diffusion of innovations (e.g., Rogers, 2003) have documented the myriad of obstacles that stack the odds against long-term changes. Researchers in implementation science recognize these challenges and work to identify implementation practices that effectively address them. To achieve needed improvements in child and family outcomes, it is critical that evidence-based programs and practices be installed and supported with effective implementation practices that address these challenges.

For 10 years, the MDCC has been synthesizing findings across OSEP-funded MDPs within and across cohorts to add to the knowledge base on effective implementation practices. The findings from the follow-up studies described here were especially valuable in identifying the practices and strategies associated with the sustainment of model practices when the external resources of the MDP are withdrawn. As purveyors of evidence-based model demonstration projects, MDP teams have the initial responsibility to help demonstration sites develop the knowledge, skills, and supports needed for implementation. However, creating lasting and widespread change in important outcomes requires transferring this responsibility to the sites and their larger systems.

Findings from the follow-up studies indicated a number of significant obstacles to model sustainment, including staff turnover, budget cuts and financial crises, and insufficient infrastructures to continue to support model implementation. At the same time, these studies illustrated that even with formidable obstacles, models can be sustained and contribute to new ways of doing business. The powerful pull of improvements in instruction and service delivery, staff confidence, and child outcomes that were attributed to the

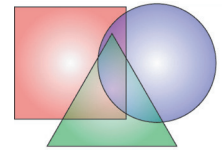
⁴ In 2011, OSEP commissioned MDCC to compile the lessons learned across cohorts of MDP grantees regarding assessing the readiness of sites for implementing model demonstrations. *Assessing Sites for Model Demonstration: Lessons Learned from OSEP Grantees* (Shaver, Wagner, & Lenz, 2011) is available at http://mdcc.sri.com/documents/MDCC_Site_Assessment_Brief_09-30-11.pdf



The process of transferring responsibility for model implementation to host sites should be part of MDP teams' work from the initial implementation stage.



models seemed to overshadow the resource investments required to sustain model practices in these cases. These successes suggest the following implications for effective implementation practices.



Plan for model sustainment from the beginning. The process of transferring responsibility for model implementation to host sites should be part of MDP teams' work from the initial implementation stage. The leaders of several MDPs were intentional about developing sustainability from the outset, but others regretted that they had concentrated on implementing models with fidelity rather than also building the capacity for sustainment. This involves intentionally developing and using strategies to cultivate ownership of model practices among site staff members and to help them identify essential leadership, supports, and resources. Providing early support to site leaders may be important so they have both the capacity and the time to plan for lasting model implementation.

Help sites develop an infrastructure. Helping teachers and direct service providers acquire and maintain the knowledge, skills, and attitudes necessary for successful implementation is not sufficient for creating lasting change. Localized changes can be sustained only when the systems around them are adapted to support them. Changes in professional development systems and resources, the dynamics between staff members and the ways they work together, and how resources such as time, equipment, and facilities are allocated need to accompany model implementation if sustainment of practices is to occur. For example, recognizing that "capacity does not stay built" because of staff turnover (Wagner & Levine, 2010, p. 268), some MDP leaders helped sites establish the capacity to offer professional development to new staff members to maintain effective implementation of the model over time.

Staff for sustainment. Paying attention to sustainable staffing means selecting a strategy that does not place untenable demands on the implementing organizations to fill and maintain staff positions after the MDP ends. Additionally, when staff positions are provided or paid for by the MDP, it may be unrealistic to expect sustained model practices when MDP funding ends.

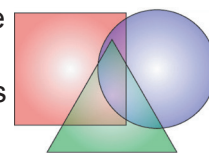
Align model practices with major initiatives. With increased demands for accountability for student and child outcomes, schools and programs often undertake multiple efforts to achieve targeted improvements. Helping site personnel see how the model can be integrated into a coherent program of reforms may help counterbalance a tendency for sites to shift to new initiatives. The model sustainment success of the C1 progress monitoring MDPs was reportedly largely due to involving practices that were well aligned with national, state, and local initiatives. MDP teams in other cohorts worked with sites to connect project goals and practices to existing initiatives.



A long-term strategy for success of MDPs and other evidence-based programs and practices is to embed model implementation within larger systems of support.



Show continuous results to maintain buy-in. Seeing positive results is a powerful motivator for teachers and service providers to continue devoting time and energy to model practices. Findings about MDPs' initial implementation experiences pointed to the importance of having early data demonstrating positive outcomes of model practices to increase participants' buy-in to the model (e.g., Yu, Wagner, Levine, & Petersen, 2011). Findings here indicate that ongoing evidence of the model's benefits promotes continued commitment among implementers and stakeholders. Some of the MDP teams that saw sustained practices had built in tools and procedures for the continuous demonstration of results.



Provide concrete tools and products. Concrete directions and usable tools can foster ongoing confidence and competence among site personnel and aid in training new staff. Respondents included in the follow-up studies identified tangible tools as facilitators to sustained model implementation. Professional development manuals, protocols for reviewing and using data, fidelity checklists, and graphing tools to display results for stakeholders were among the products cited as valuable for model sustainment.

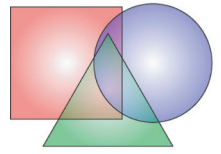
Foster a culture of collaboration. The models represented by the C1–C3 MDPs required collaboration among site personnel through data-based decision teams, behavioral intervention teams, and coordination among early intervention service providers and early childhood educators. A lasting benefit of these collaborations may be a more collegial culture, a factor cited as a facilitator of model sustainment.

Develop a deep bench of leaders and supporters. Developing the ownership and skills of a number of administrators and leaders at multiple systems levels provides insurance against the potentially devastating effects of leadership turnover. For example, although the departure of several key leaders was a significant problem at one C1 MDP site, model practices survived because of widespread support and involvement at the school and district levels. In contrast, leadership turnover in several MDPs' sites resulted in the abandonment of model implementation.

Encourage model adaptations to increase ownership. Sites adapting model practices to address local needs and priorities can increase the sense of ownership among site personnel and may contribute to a sustained commitment to model implementation. The follow-up studies provided numerous examples of sites that adapted model practices while maintaining core components. MDP leaders saw these adaptations as healthy for sustained implementation.

Identify and connect with systems-level supports. Generally, follow-up study sites that were successful in sustaining model practices benefited from systems-level (e.g., school district) support and resources. Therefore, a long-term strategy for success of MDPs and other evidence-based programs and practices is to embed model implementation within larger systems of support.

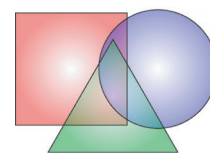
The availability of state-level technical assistance systems and networks provided an essential source of assistance for several MDPs and was a critical factor in large-scale model spread. MDPs that did not have access to these kinds of networks and resources were more challenged to find supports needed for sustained model implementation.



These observations are offered in support of future MDP grantees and other purveyors of evidence-based programs as they develop and implement lasting models that can improve the outcomes of children and youth with disabilities. Understanding what it was about the models or the implementation sites that promoted sustainment adds importantly to the knowledge base in the developing field of implementation science.

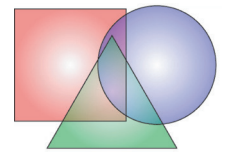


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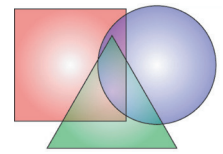
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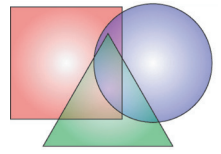
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