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Excellent Healthcare in Every Neighborhood

FACTORS CONTRIBUTING TO SUSTAINING AND SPREADING LEARNING COLLABORATIVE IMPROVEMENTS

Qualitative Research Study Findings

by the Primary Care Development Corporation

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Authors:

KeriAnn Hinchey Judge, A.P.N., M.A., R.N., B.S.N.
Primary Care Development Corporation

Deborah Zahn, M.P.H.
Primary Care Development Corporation

Ned J. Lustbader, M.P.A.
Public Health Consultant

Scott Thomas, Ph.D.
Public Health Consultant

Destiny Ramjohn, M.A.
Public Health Consultant

Matthew Chin, M.P.A.
Primary Care Development Corporation

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PCDC

Primary Care Development Corporation (PCDC) is a not-for-profit organization dedicated to expanding access to timely, effective primary and preventive care by providing capital and performance improvement programs to primary care providers in underserved communities. Since 1993, PCDC's capital programs have generated over \$221 million of investment in 71 projects, which have developed approximately 510,000 feet of previously dilapidated or vacant space. PCDC invests in facilities that provide care for some 400,000 low-income New Yorkers and provide over 1,800 permanent jobs in their communities. PCDC also has assisted over 300 primary care center teams at over 50 sites to implement changes that revolutionize how centers organize and deliver healthcare--reducing wait times and other barriers to care; increasing productivity, revenue, and patient and staff satisfaction; improving emergency preparedness; and implementing health information technology.

ABSTRACT

Though previous studies have evaluated successful results achieved using the Learning Collaborative model,¹ none has systematically studied what contributes to the sustainability and spread of improvements following a Learning Collaborative.^{2,3} Based on a previous study,⁴ the Primary Care Development Corporation (PCDC) identified six factors thought to influence the sustainability and spread of improvements, which include: team/staff, leadership, models/processes, organizational systems/culture, data measurement/reporting, and education/coaching. Using these factors as a framework, PCDC conducted a qualitative research study to identify what contributes to the sustainability and spread of improvements following a Learning Collaborative. The findings of this study can enable Learning Collaborative sponsors and participating organizations to better design, develop, and facilitate sustainability and spread of improvements. Based on the findings, PCDC developed a core set of principles for promoting sustainability and spread. The PCDC Principles of Sustainability and SpreadTM are:

- Provide direct and visible leadership
- Deploy teams to make changes
- Test changes with the PDSA process
- Use the Care Model as a framework for change
- Coach for change
- Make the new way unavoidable
- Allocate actual resources
- Monitor what you want to sustain and spread
- Create a culture of improvement

EXECUTIVE SUMMARY

Underserved communities in New York City frequently receive primary and preventive health care that is fragmented, difficult to access, and of inconsistent quality.⁵ Providers serving these communities often lack adequate resources and are overwhelmed by patient demand.⁶ The resulting frustration can engender cynicism, diminish commitment, cause a steady exodus of talented professionals, and erode the quality of care provided to patients. To address these issues, many primary care sites have participated in Learning Collaboratives⁷ with the goal of achieving better operational and clinical outcomes. Collaboratives are designed to produce improvements in the delivery of health care, the systems for both staff and patients, and ultimately, health outcomes.⁸

There is evidence that the Learning Collaborative model can be effective in introducing new knowledge, improving performance, and, ultimately, improving health care delivery.⁹ However, research and anecdotal feedback from Collaborative sponsors and participants indicates that Collaboratives do not always produce long-term sustainability and spread of improvements.¹⁰

Due to this, PCDC conducted a qualitative research study to examine what participants perceived as contributing to sustainability and spread of improvements following a Learning Collaborative. The goal of the study was to generate findings that can be used to enhance Collaboratives and other improvement initiatives in a way that will more likely facilitate sustainability and spread of improvements.

Based on previous study findings,¹¹ the Primary Care Development Corporation (PCDC) identified six factors thought to be critical to sustaining and spreading improvements following Collaboratives:

- Team/staff
- Leadership
- Models/processes
- Organizational Systems/culture
- Data Measurement/reporting
- Education/coaching

Using these factors as a framework, PCDC conducted semi-structured interviews with improvement experts as well as past participants of Learning Collaboratives that had sustained and/or spread improvements. Based on the interview responses, PCDC developed the following core set of principles for promoting sustainability and spread. The PCDC Principles of Sustainability and SpreadTM are:

- Provide direct and visible leadership
- Deploy teams to make changes
- Test changes with the PDSA process
- Use the Care Model as a framework for change

- Coach to support change
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METHODOLOGY

Sustainability and Spread Defined

For the purposes of this report, PCDC defined sustainability and spread as follows:

- **Sustainability:** the maintenance of an improvement effort’s results for a minimum of six months after initially implementing the improvement
- **Spread:** the dissemination and adoption of the implemented improvement from the original team, clinical site, or condition to a different team, clinical site, or condition

Six Critical Factors

Based on PCDC’s performance improvement, technical assistance, and Collaborative experience as well as a review of the literature, PCDC identified six factors in a previous study thought to be critical to sustaining and spreading improvements as they specifically relate to Collaboratives. They are:

Factor	Description
Team and Staff	Team refers to the group of staff who worked on an improvement effort either during or after a Learning Collaborative. Team members can be of various ranks, classifications, shifts, or work areas. Staff refers to employees of a primary care organization that participated in a Learning Collaborative program.
Leadership	Leadership is defined as employees of a primary care organization who have decision-making authority, are able to influence others to accomplish an objective, and provide direction to an organization in a way that makes it more cohesive and coherent. Leaders often include chief executive officers, medical directors, and/or board members.
Models and Processes	Models are an approach to improvement efforts that provide structure or serve as a framework for accomplishing the goals set forth. The models most frequently referred to regarding Learning Collaboratives include the Care Model and the Model for Improvement. Processes are work sequences, that is, a series of related tasks or a combination of techniques. Within the Model for Improvement is the Plan-Do-Study-Act (PDSA) process.

Factor	Description
Organizational Systems and Culture	Systems refer to the primary care organization's patient care and administrative internal processes, forms, policies, and protocols. Culture refers to an organization's shared structure, standards, expectations, habits, attitudes, and beliefs, which are often unspoken. It applies to the different aspects of an organization, including how employees relate to one another, how they communicate, and how efforts are coordinated among them.
Data Measurement and Reporting	This factor refers to all aspects of data management, including the actual system or database in which to deposit and organize data, the process for collecting data, the methods of selecting and measuring performance indicators, and the synthesis and dissemination of data.
Education and Coaching	Education and coaching refers to how knowledge is generated, shared, and used and how implementation assistance and support is provided. Education includes seminars, staff development, learning sessions, and presentations. Coaching includes in-person, email, and/or telephone contact provided to teams by an external or internal staff person who has a thorough understanding of the content and process and provides feedback and guidance as necessary. Coaching also includes internal mentoring and assistance that occurs after the Collaborative.

Research Questions

The purpose of the study was to capture what participants and experts perceived as contributing to sustainability and spread of improvements achieved through a Learning Collaborative. The six factors serve as the framework with which PCDC evaluated the following research questions:

- What factors do Collaborative participants and experts report as critical to sustaining an improvement effort(s)?
- What factors do Collaborative participants and experts report as critical to spreading an improvement effort(s)?
- What characteristics of health care organizations do Collaborative participants and experts report as critical to sustaining quality improvement efforts?
- What characteristics of health care organizations do Collaborative participants and experts report as critical to spreading quality improvement ideas?

Data Sources

Site Participant Interviews

PCDC employed a qualitative research methodology to capture what participants perceived as contributing to sustainability and spread of improvements following Learning Collaboratives in select primary care settings in New York City. To acquire sites for participant interviews, PCDC selected three Learning Collaborative sponsors from New York City. PCDC established study inclusion criteria and, based on the criteria, invited 14 sites to participate in the study. Two sites did not respond, and one site chose not to participate. PCDC enrolled the 11 remaining sites into the study.

PCDC's field team developed an interviewer guide and interviewer protocol then held an interviewers' training. Interviews were then conducted with two to three site participants from each of the 11 New York City primary care sites, typically with a site leader, a team leader, and an improvement team member. A total of 27 semi-structured, audiotaped interviews were conducted in total. Each interview lasted approximately 45 minutes. Site participants were asked to discuss the factors they considered to be essential for sustaining and spreading improvements following a Learning Collaborative.

PCDC then developed a code book, calculated inter-coder reliability (82% for Collaborative site participants), coded all transcripts, and entered the coded transcripts into the Atlas.ti qualitative analysis software system. The field team then analyzed similarly coded statements using output from Atlas.ti to identify common themes and unique insights that were reported as factors contributing to sustainability and spread. For the purposes of this report, interviewees who were part of this study are referred to as "site participants."

Expert Interviews

PCDC conducted five 45-minute interviews with experts on the Learning Collaborative and Care models to solicit their views and insight as to how organizations successfully sustain and spread gains made through Learning Collaborative improvement efforts. In collaboration with project consultants, PCDC selected experts based on their contribution to the existing field of knowledge. Using the same code book developed for the participant interviews, PCDC calculated inter-coder reliability (94% for expert interviews), coded all transcripts, and entered the coded transcripts into the Atlas.ti qualitative analysis software system. The field team then analyzed similarly coded statements using output from Atlas.ti to identify common themes and unique insights that were reported as factors contributing to sustainability and spread. For the purposes of this report, expert interviewees who were part of this study will be referred to as "experts."

FINDINGS

The following findings are organized under a set of core principles derived from the study. These headings form a set of core principles based on the research findings. These nine principles are meant to be used to enhance Learning Collaboratives and other improvement efforts to better facilitate sustainability and spread of improvements. The PCDC Principles of Sustainability and Spread™ are:

- Provide direct and visible leadership
- Deploy teams to make changes
- Test changes with the PDSA process
- Use the Care Model as a framework for change
- Coach to support change
- Make the new way unavoidable
- Allocate actual resources
- Monitor what you want to sustain and spread
- Create a culture of improvement

Note: The order in which the findings are presented in the following section does not in any way indicate a ranking of the findings.

PRINCIPLE: Provide direct and visible leadership

Site participants indicated that leaders who helped sustain improvements regularly discussed the ongoing improvement efforts at meetings, monitored performance results, provided consistent feedback to improvement teams, and responded to staff requests for resources. Further, leadership's involvement was described as being "visible" to providers and other staff, which they said facilitated the organization's efforts to sustain improvements. One site participant described the direct involvement by leaders as, "whenever we need something ... she's [the CEO] always available and willing to help out and come up, actually with certain examples of things we can do." One of the site leaders interviewed described her own activities, "I'll step into the team every few weeks and sort of trouble shoot what they're working through if I can figure it out." Another site leader interviewed stated, "I let

PROVIDE DIRECT AND VISIBLE LEADERSHIP

Leaders promoted sustainability by *regularly*:

- Discussing the ongoing improvement efforts at meetings
- Monitoring performance results
- Providing consistent feedback to improvement teams
- Responding to staff requests for resources
- Directly and visibly supporting and working with teams

Leaders supported spread by:

- Creating organizational responsibility for spread
- Providing clear direction, support, and guidance to teams
- Communicating support and promoting spread

them know that I support the Collaborative, so the staff sees that ... they see that we believe in the concept and we support the concept.”

For sustainability, experts identified the importance of defining what leadership can do to demonstrate buy-in, such as verbal support, setting expectations, providing the “will” to change, setting a vision and mission around improvement work, encouraging staff growth and training, and creating culture that supports ongoing improvement.

For spread, experts referenced the need to create organizational responsibility for spread and, in doing so, the ability to remove the “burden” of spread from the improvement team. The experts explained in detail that team members may not have the lines of authority, the relationship with other staff, or the ability to transfer knowledge from one organizational unit to another as required in order to spread innovative changes. Therefore, leadership must provide direction and support. Experts stated that leaders must provide clear direction and guidance in selecting the organizational units to which improvements will be spread. They also identified leadership activities that contributed to spread, including offering training and professional development opportunities for staff to learn the basics of improvement work (e.g., the Care Model, the Model for Improvement, and the PDSA process), supporting the culture for continuous quality improvement, taking an active role in the progress of spread (e.g., asking specific questions about the pace of spread), and regularly monitoring performance indicators as helping to support the spread effort.

Additionally, site participants and experts referenced the importance of communication and promotion. Some site participants did not report a direct involvement by leaders; however, they did report that leaders provided clear communications to staff about their support of the spread activities. One participant described how “the senior leaders in this organization speak about the efforts of the team.” Another participant referred to how the Chief Medical Officer said to other leaders in regards to a diabetes initiative, “...we should be doing this across the institution,” and that this increased their ability to spread. Another participant described his own role as a leader in communicating to others about the success occurring with an improvement effort and his support for others taking it on.

PRINCIPLE: Deploy teams to make changes

Site participants cited the overall positive work experience of the Collaborative as helping to support sustainability. Site participants reported team members having very positive experiences working on the teams. The teams were described as being “very energized” by the work they were accomplishing. One participant attributed the positive experience to having the opportunity to learn new skills and contribute ideas in a group setting. She stated, “It’s out of the routine, and it’s creative and dynamic.” The result, she reported, was that she would hear staff that were not on a team talk about wanting to be on one. Another participant described this impact as “invigorating other staff because the team itself was invigorated.” Another participant said, “...it’s like were all working as one unit even though we’re in separate departments.”

DEPLOY TEAMS TO MAKE CHANGES

The use of teams promoted sustainability and spread by:

- Producing positive experiences for team members
- Promoting the acquisition and use of new skills
- Breaking the routine way of operating and fostering creativity
- Creating opportunities for members to act in new roles
- Allowing members to work across departments and sites
- Enabling new teams to test changes before they spread them

For spread, site participants and experts stated the importance of using spread teams. Site participants reported that having a spread team to educate the other staff at their site or other settings was important to spread. One participant stated that not only did they develop the curriculum, but “it’s actually been the team members who have done the educational sessions for all of the staff, and I think that has helped tremendously.” Another participant referred to how the spread team took the concepts behind the improvement initiative to other health care centers, introduced it, and worked at motivating the new teams at those sites. Another participant described how their team now visits different sites and “in-services the staff.” One site participant stated that teams were used as places to test improvement activities before they are spread. Another site participant reported that they would start with their team and “test it and ... work out the kinks.” Another participant described how they “use the spread team itself as a way to kind of test ideas first on the other people on the team, and, if we get them to be successful, then we think about how do we bring it to the people who are not on the team.” Experts addressed the value in the “linking pin” concept wherein spread teams include members from sites that did not participate in the Collaborative so all sites have membership in the improvement spread process.

PRINCIPLE: Test changes with the PDSA process

Site participants and experts noted the benefits of the Plan-Do-Study-Act (PDSA) process. Site participants indicated that the PDSA process was a factor in their ability to sustain improvements. Site participants stated that the Model for Improvement and the PDSA methodology provided real-time results on tests of change that did not require a formal approach to testing. Site participants said that they were able to determine quickly if a test of change was effective and that the outcomes-driven focus of the PDSA methodology was a motivational factor in sustaining changes.

TEST CHANGES WITH THE PDSA PROCESS

Using the Plan-Do-Study-Act (PDSA) process contributed to sustainability and spread because it:

- Enables participants to obtain quick, real-time results to determine if a change was effective
- Is outcome-driven
- Is widely applicable and useful across settings and interventions

Site participants described the PDSA process as being helpful in spreading quality improvement initiatives. Site participants referred to a number of ways the PDSA process supported spread, most notably its focus on outcome-based evidence, getting real-time results, and its widespread usefulness. Site participants also reported that the PDSA process was helpful in spreading improvement efforts by providing evidence of its usefulness. One participant reported how providers liked it because, by using the rapid-cycle test process, they were able to see if it worked and give feedback on it. The participant contrasted this with them usually being “directed to do something and they were off and running.” Another participant described how she did a PDSA on a very complex medical form. Other staff did not believe she could get the necessary input to determine its usefulness. However, she quickly got the input from those who tested it, revised the form, and put it back in circulation. She reported that the form not only “works beautifully” but that, “everybody knew what a PDSA cycle was after that!”

Site participants also referred to how quickly the PDSA process provided results in spreading quality improvement efforts. One participant described how their providers used the PDSA process to test a medical information card with their patients. They then provided feedback on how well it worked and tested it again. The participant reported that, “by the second try we’re like: this is it.” Another participant referred to doing a PDSA cycle on a diabetes form in one day instead of the usual “10 years.” In regards to testing so quickly, she reported, “I can’t believe I did that...but it worked...it worked.”

Site participants further stated that the PDSA process was helpful in spreading improvement efforts because it was useful in so many parts of their organization and was not limited specifically to interventions with patients during an office visit. Site participants stated that PDSA’s could be used “on everything from the receptionist to the front desk, not just disease processes.” One participant said in reference to the PDSA process, “You can just use it universally.”

PRINCIPLE: Use the Care Model as a framework for change

Site participants indicated that they valued the Care Model as a comprehensive framework for providing quality care, one that equated the role of the provider team with that of the community and patient. Site participants stated that the Care Model itself provided a helpful framework for identifying potential barriers to care and areas for improvement. Additionally, they said that the Care Model component of patient self-management provided a helpful framework for teams to explore improvements for creating partnerships between patients, their families, and providers.

Site participants also reported that the comprehensive nature of the Care Model was useful in helping spread quality improvement efforts. One participant described how it helped those involved in spread activities understand what they were going to be doing and provided an “organized conceptual way” to think about it. He stated that being able to see the different elements of the model helped “concretize the change.” Another participant referred to this same benefit in using the Care Model during spread by stating that it helped “direct where and how things went.” She indicated that she thought that this was especially useful in the small community-based organizations that did not always have access to continuing education or other venues that would provide these models of care. Another participant stated, “...the Care Model is very important in spreading to the other providers because conceptually it really is a good way to understand the components of change for disease process.” Another participant referred to the use of the Care Model during program development and stated that they used the Care Model as “a way of thinking of how to roll out the program and develop it.”

Experts discussed the importance of integrating the Care Model as an organization-wide system for approaching improvement work and as a determinant of successful spread.

USE THE CARE MODEL AS A FRAMEWORK FOR CHANGE

Using the Care Model supported sustainability by:

- Providing a helpful framework for:
 - Identifying potential barriers and improvement areas
 - Exploring improvements in creating partnerships among patients, their families, and providers
- Proving applicable and useful across settings and interventions

And supported spread by:

- Helping participants understand and direct the improvement process

PRINCIPLE: Coach to support change

Site participants stated the importance of coaching in sustaining improvements. Site participants described coaching interactions through various modalities, including face-to-face meetings, conference calls, web casts, Internet-based bulletin boards, and other forums. Site participants discussed a number of benefits to coaching as a means of sustaining improvement work. They referred to coaches as experts who provided assistance with the challenges that arose during improvement efforts. One participant described a coach as being very helpful in guiding the team through the PDSA process and in using the Care Model. She reported that the coaching was

“...essential...one person who really knew what they were doing.” Another participant referred to how the expert coaching kept the team “on the right track.” Site participants reported that consistent and regular contact with the coach helped with sustaining improvements. They also referred to “constant coaching” and “coaching on an ongoing basis.” When asked if coaching helped maintain improvements, one participant exclaimed, “of course!”

For spread, site participants discussed a number of benefits that coaching provided in spreading improvement efforts. Site participants specifically mentioned the consistent communication and contact with their coach as helpful in spreading improvements. One participant described the importance of the coach in guiding the team through the PDSA process and the Care Model.

COACH TO SUPPORT CHANGE

The use of coaches supported sustainability by:

- Providing expertise
- Assisting with challenges
- Guiding sites to use the PDSA process and Care Model
- Keeping the improvement teams on track

And supported spread by:

- Providing constant and consistent coaching and communication

PRINCIPLE: Make the new way unavoidable

Site participants indicated how creating clinical processes that were systematically embedded within the practice helped to improve patient care and lead to sustained improvements. According to site participants, these systematic approaches to patient care processes helped reduce human error by streamlining and/or simplifying processes. One participant gave the example of flagging charts to ensure that patients see a social worker and/or nutritionist at each visit. In another example, a participant said that new forms were created and evaluated to be more efficient and less likely to have errors.

Site participants and experts indicated the importance of creating policies and procedures as a means to support sustainability. Site participants gave examples of policies and procedures such as mandatory staff education and training and use of standardized forms for particular clinical processes. One participant described an instance when new forms on depression and asthma were developed. The participant said that all old forms were discarded, and the new form became the institutional standard by way of policy. Site participants and experts also reported that policies and procedures such as job descriptions and performance evaluations were used to formalize improvements. Site participants reported that annual performance evaluations included ratings on improvement-related activities. One participant described how there were “real changes in people’s job descriptions” that supported the improvement efforts and sustainability. Experts additionally noted that system changes make it difficult for an organization to reject an innovation.

Site participants and experts stated the importance of an infrastructure to support improvement work as contributing to sustainability. By infrastructure, site participants referred to the organization’s formal programs that supported and defined quality patient care as well as ongoing educational and training opportunities to support staff in pursuing improvement programs and delivering patient care. One participant described how they developed a center for learning and professional development within their organization to sustain improvement efforts. The participant reported that building this infrastructure was “an outgrowth of the Collaborative work in many ways.” Another participant referred to his organization developing a health education department and a division of data management to support sustainability and serve the needs of improvement teams. Yet another participant stated the importance of having an asthma center of excellence as “we consider it to be very important to be proactive and to make sure everyone is training with the latest guidelines.” Experts also noted that innovations such as

MAKE THE NEW WAY UNAVOIDABLE

Embed/institutionalize the change, including in:

- Patient care processes and forms
- Policies and procedures
- Staff education, training, orientation, and professional development
- Job descriptions and performance evaluations
- New departments and other infrastructures
- Provider incentives
- Existing and new committees and departments
- Orientations and staff development
- Strategic plans, including vision, mission, and strategic direction
- Measurements and reports

orientations, staff development, patient care processes, and provider incentives must be built into the daily operations.

Site participants and experts stated the importance of organization-wide education on improvement goals and practices for sustainability. Site participants said that education that was inclusive of all staff and providers in the organization was critical because everyone would then understand the goals and practices of the improvement effort. Site participants referenced various forms of staff education, including presentations at staff meetings by leaders and members of the original pilot improvement team, coaching, attending learning sessions, emails and memorandum with updates on improvement progress, conference calls, web casts, and Internet-based bulletin boards and discussion groups.

Experts reported that, in order to sustain innovations, changes must be aligned with the organizational environment, which includes the organization's mission, vision, and strategic direction. Experts also suggested that leaders who encouraged the institutionalization of processes and systems related to change, such as updating job descriptions and performance review criteria to capture expectations regarding ongoing quality improvement, revising patient care protocols to reflect the clinical improvements that had been implemented, and providing ongoing support for data measurement and dissemination, encouraged the institutionalization of these new processes into the organization as a whole, which in turn contributed to sustainability.

For spread, site participants stated the importance of policies and procedures as a way to embed improvements within the organization. One participant stated that, if staff were going to be functioning in new ways that were consistent with improvement efforts, this should be formalized. She stated, "We have policy and procedures. So why not have your policy and procedures follow something that's productive?" Another participant described how they made it a policy to put teams at every site in order to facilitate the spread of improvement to those sites. Another participant referred to an example of how policies and guidelines helped in spreading a depression initiative because having standards and procedures to which they could refer helped providers feel more comfortable in prescribing antidepressants.

PRINCIPLE: Allocate actual resources

Site participants cited designated and protected time as the most frequent resource requested to leaders, specifically time set aside for the improvement team to meet, review data, plan tests of change, attend learning sessions, and discuss the logistics of new processes and systems. As one participant noted, “We have protected time to meet and to do these things.” Another participant referred to time as the “most important” resource in the context of sustaining improvements. Site participants also said that they requested financial support and appropriate and adequate staffing for improvement initiatives. Site participants noted that the costs of improvement work were budgeted annually and that support staff were deployed to assist with data management. The literature review reiterated that leadership must provide support and resources for the project.

For spread, experts cited the importance of providing resources to support the training of staff at sites/departments in which new improvements will be spread.

ALLOCATE ACTUAL RESOURCES

Resources that contributed to sustainability were:

- Protected time, specifically time set aside for the improvement team to:
 - Meet
 - Review data
 - Plan tests of change
 - Attend learning sessions
 - Discuss the logistics of the new processes
- Financial support
 - Budgeted annually
- Staffing and staffing support

Resources for spread were:

- Training spread site staff

PRINCIPLE: Monitor what you want to sustain and spread

Site participants and experts both stated that a data management system is integral to sustainability of improvement efforts. Site participants stated that using patient records that are linked to the facilities data management system “improves overall access to patient records.” In addition, site participants specifically cited the importance of using a data system that has the capability “to produce reports on measures used in monitoring the progress of improvement efforts.” This finding was noted in further detail in the expert interviews, which stated that not only was it a necessity to have a measurement system, but it also is critical to remember that the “ease or complexity of data management can encourage or inhibit sustainability.”

MONITOR WHAT YOU WANT TO SUSTAIN AND SPREAD

Monitoring that supported sustainability included:

- Having a data management system
- Disseminating outcome-focused, easy-to-understand data across all levels of the organization
- Using patient registries
- Ongoing team meetings

For spread:

- Sharing data to create buy-in
- Using visually compelling formats such as storyboards

Site participants indicated the importance of disseminating data and providing feedback. The site participants reported the benefits of having transparent data and using data appropriately. One participant said that it is important to have “...data that all staff is not only aware of but also understand what’s being measured” and that is also “outcome driven.” One participant explained that consistent and “critical reviews of the data” allowed for the data to be analyzed, which would “assist them with the improvement strategies.” Site participants and experts stated that the dissemination and availability of data across all levels of an organization supports a culture of improvement.

Site participants also frequently indicated the usefulness of patient registries because it allowed improvement teams to analyze data to identify the root causes of any barriers to improvement. One participant said, “By drilling down into data in the registry, teams were able to pinpoint barriers to care that were affecting outcome measures.” According to site participants, the patient registry allowed them to make corrections in a test of change or new protocol for care, which also helped to sustain improvements.

Site participants reported that ongoing monitoring of improvements was important to sustainability. Specifically, site participants interviewed cited how holding ongoing team meetings, reviewing patient records, and reviewing performance helped facilitate sustainability. Site participants reported that teams continuing to meet regularly is “how they’ve kept everything in place.” The meetings allowed one prenatal team to review patient charts and determine if patients had been receiving appropriate services. One participant described how her asthma team had completed their work years ago but continued to meet to review the performance of the program. She stated that they wanted to “make sure that it’s still on par with where it was when the improvements were initially made.”

For spread, site participants surveyed reported that the data management systems allowed them to analyze data that would assist them in spreading improvement strategies. One participant reported how the team used the data management system to develop comparisons between sites to help increase interest in the activities trying to be spread. Another participant referred to how it helped to be able to “query the database at any given point in time and take a snapshot.” Site participants also gave examples for data reporting, including clinical measures such as patient HbA1c levels (i.e., glucose levels).

Site participants also repeatedly emphasized the importance of making the case to providers and staff about the spread of improvement efforts using data on outcome measures. One participant stated, “you could talk, talk, talk, but once you show doctors [the data] ... that’s when you get more of a buy-in.” Another participant referred to how reporting on their patient outcomes in comparison to national outcomes was, “very motivating for the staff.” Another participant stated that, “sharing data, sharing results, and sharing improvements ... is a motivating factor to show that this really works.” Another participant referred to using the data to give “statistical backing” to the improvement efforts.

Site participants stated the importance of visually compelling formats when using data to help spread improvement efforts, particularly graphs and storyboards. One participant referred to an experience when graphs helped “propel us forward.” He described a presentation on the clinical status of their diabetes patients that “totally caught people’s attention.” He contrasted it with what he saw as the limited impact that is made sitting around as a group and reviewing charts. According to site participants, storyboards also are visually compelling tools that contain goal statements, graphs, pictures, and summaries of outcome measures. Storyboards are used to help other staff understand improvement efforts and to increase their motivation in taking part in those activities. One participant referred to the storyboards as “very positive” in getting staff interested.

Experts interviewed reported that it was important to demonstrate the success of an improvement as a way to help spread the improvement. Experts also indicated that it was beneficial to use a formal tool for reporting data to the organization.

PRINCIPLE: Create a culture of improvement

Site participants frequently stated the importance of having an organization-wide culture supporting ongoing quality improvement. One participant said that the expectation of improvement as not being anything written but part of “...who we are and this is what we do; it’s part of the institutional culture.” Site participants also indicated the importance of having an environment in which staff are “excited” by the improvement work as well as an atmosphere of wanting to work together to create improvement. Experts discussed the importance of creating a culture in the organization that not only supported change, but that encouraged an accelerated process for testing and implementing changes. The experts stated that the ability to sustain and spread improvement requires staff to understand the “language” of improvement and a context for the applicability of such concepts. They also indicated that leaders, especially those who appreciated the patients’ perspective, who were committed to transformational change and were “in tune” with the energy of the organization, contributed to sustainability.

For spread, site participants noted the importance of creating an organizational culture for improvement. Site participants referred to a culture within the organization that was focused on improvement. One participant referred to the receptivity of the staff to the spread of improvement efforts. He stated, “It’s the culture that’s been developed. They know that improvement is part of what we value, so ... they were very forthcoming.” Another participant described how the organization was now ready to spread improvement efforts. She said that one of the first things the staff thinks is “we’re going to do a PDSA to try and improve this.” Another participant described how spreading something new had become easier because improvement efforts were “sort of like second nature now.” She referred to how they were about to spread procedures to a new age group of patients and stated, “So hopefully ... we’ll get great numbers right away.”

For spread, experts highlighted the need for leaders to support a culture for continuous quality improvement by taking an active role in the progress of spread and regularly monitoring performance indicators as helping to support the spread effort. Experts also discussed the importance of leadership’s sensitivity to the energy of the organization, including understanding and appreciating staff reactions to potential change. They also indicated that leaders who demonstrated an appreciation of the patients’ and community’s perspectives in quality care as well as demonstrable commitment to quality patient care helped facilitate spread efforts.

For spread, experts indicated that the responsibility and the “burden” for spread needs to move from the improvement team to leadership and the organization as a whole.

STUDY LIMITATIONS

The results of this qualitative study provide rich data with which to better understand how sustainability and spread operate in improvement efforts. The findings from this study should not be generalized to reflect the observations of all individuals who take part in improvement efforts. More research of this nature with separate groups in other locations would be necessary to begin to determine how standard these observations are. Additionally, conclusions about causality

CREATE A CULTURE OF IMPROVEMENT

Organization-wide culture changes support sustainability by:

- Embedding improvement into the organizational identity and way of doing things
- Exciting staff
- Creating an atmosphere of wanting to work together to create improvement
- Encouraging an accelerated process for change
- Creating a shared language and process of improvement
- Having leadership committed to transformational change

For spread:

- Giving staff a process, the PDSA, for testing changes
- Easing the spread of new changes
- Having leaders
 - Sensitive to organizational energy and reactions
 - Appreciative of patients’ and community’s perspectives
 - Demonstrate a commitment to quality patient care

should not be made between those factors described in the participants' observations and the degree of sustainability and spread that occurred. For example, while site participants reported that direct involvement of leadership was important for sustainability and spread, further research comparing organizations with and without direct involvement of leadership would need to be conducted to make that determination.

Participants were interviewed who were part of Learning Collaboratives that employed the PDSA process and the Care Model. As such, the authors cannot comment on the relative utility of other improvement processes and models.

Additionally, the study did *not* tell us:

- The relative importance of the contributing factors
- Long-term sustainability (1+ years)
- Factors that contribute to Collaborative results *not* being sustained or spread
- Sustainability and spread with non-Collaborative efforts

IMPLICATIONS AND CONCLUSIONS

It is clear from the study findings that there is no single characteristic exclusively responsible for successful sustainability and/or spread of improvements following a Learning Collaborative. Rather, our findings indicate that all six factors of the research framework generally play a role in sustainability and spread. However, they may contribute in different ways and to various degrees. Further, study results indicate that a finding may have been more relevant to either sustainability or spread but not both.

The authors also recognize that there is no “perfect” organization. Organizations are dynamic entities that evolve and change over time. These report findings are not intended to serve as a call that organizations must meet these “minimum requirements” in order to successfully engage in Learning Collaboratives or other improvement work. Rather, organizations that have participated in or plan to participate in a Collaborative may want to use these findings and the principles to guide them in how to deliberately support sustainability and spread. Further, organizations that conduct Learning Collaboratives and other improvement efforts could use these findings to better develop, plan, and deliver their programs.

ENDNOTES

¹ The Collaborative Learning Model refers to a specific structure and process to support provider organizations with interventions, for example, to improve the quality of clinical care or operational improvements among other numerous applications. The collaborative learning model was developed by the Institute for Healthcare Improvement (IHI) and is often referred to as the Breakthrough Series model, which was originally designed in 1995 (see *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement*, 2003). Also see www.IHI.org, the website for the Institute for Healthcare Improvement.

² Øvretveit J, Bate P, Cleary PD, Cretin S, Gustafson D, McInnes K, McLeod H, Molfenter T, Pleask P, Robert G, Shortell, S. Quality Collaboratives – Lessons from Research. *Quality Safety Health Care*. 2002; 11(1):345-351.

³ Wilson T, Berwick DM, Cleary PD. What do collaborative improvement projects do? Experience from seven countries. *Jt Comm J on Quality and Safety*, 2003; 29 (2): 85-93. Reprinted in 2004 Global Supplement to the *Jt Comm J on Quality and Safety*.

⁴ In a prior study, the Primary Care Development Corporation (PCDC), with funding from The Commonwealth Fund, hypothesized six factors thought to impact the sustainability and spread of improvements following a Learning Collaborative. These six factors serve as the theoretical framework for this qualitative research analysis.

⁵ New York City Department of Health and Mental Hygiene, Primary Care Information Project. “Potential Impact of Health Information Technology (HIT) on Challenges to the Current Health Care System” Website reference: <http://www.nyc.gov/html/doh/html/pcip/pcip-challenge.shtml#top>

⁶ New York City Department of Health and Mental Hygiene, Primary Care Information Project. “Potential Impact of Health Information Technology (HIT) on Challenges to the Current Health Care System” Website reference: <http://www.nyc.gov/html/doh/html/pcip/pcip-challenge.shtml#top>

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⁸ Community Service Society, Issue Brief, “Health Care: An Unmet Need In New York’s Low-Income Neighborhoods” No. 7, May 2000.

⁹ Mittman, Brian S., Ph.D. Creating the Evidence Base For Quality Improvement Collaboratives, 1 June 2004, *Annals of Internal Medicine*, Vol 140, No 11.

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