The Foundation Review

Improving Care and Service Coordination for Vulnerable Populations Through Collaboratives: One Funder's Approach, Impact, and Implications for the Field

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RESULTS

Improving Care and Service Coordination for Vulnerable Populations Through Collaboratives: One Funder's Approach, Impact, and Implications for the Field

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Key Points

· Improvement collaboratives are short-term learning systems that bring together teams from multiple organizations to seek improvement on a focused topic within the organizations. Most commonly applied in clinical settings, improvement collaboratives are less frequently applied in social-service settings or across agencies to support coordination of care and services for vulnerable populations.

· This article describes findings from four collaboratives conceived and funded by the Health Foundation for Western & Central New York. It examines the foundation's collaborative structure (a modified Breakthrough Series model in which health and social-service organizations work together in multi-agency teams to implement best practices and improve coordination of services for vulnerable populations), along with the impact of each collaborative on learning, communication, participating organizations, and target populations.

· Reports from 91 participating organizations, representing 50 teams, in four collaboratives revealed strong team achievement, learning and communication, and sustained improvements. Impacts on target populations and spread of best practices were also reported. A key influence on achievement was the use of multi-agency teams representing two or more organizations working together to implement new processes and improvements to support patient handoffs across health and social service settings.

· Findings suggest that the foundation's collaborative model – an adaptation of the intra-organizational Breakthrough Series model for use in a multi-organizational setting – can be effective in fostering improvement within organizations and promote coordination across agencies to improve health and social services for vulnerable populations. Collaborative structure and process recommendations for funders interested in this model are highlighted.

Introduction

An improvement collaborative is a six- to 18-month learning system that brings together teams from organizations across a region to seek improvement in a focused topic area (Institute for Healthcare Improvement, 2003). Developed in 1995 by the Institute for Healthcare Improvement (IHI), the collaborative method is best exemplified by the IHI Breakthrough Series. Grounded in principles of organizational and adult learning theory, the collaborative method brings subject-matter experts together with practitioners from participating organizations in a facilitated learning environment with the goal of organizations realizing breakthrough improvements and closing the gap between best and current practice in a short period of time. This is accomplished through a collaborative structure in which organizations learn from each other and from experts in topics where they want to improve (Wilson, Berwick, & Cleary, 2003).

The model for improvement, developed by Associates in Process Improvement, is the science

of improvement applied in improvement collaboratives (Lindenauer, 2008). Teams apply the model by setting measurable targets, testing changes on a small scale, and collecting data to measure improvement. In most collaboratives, an evidence-based best practice intervention is used. Collaborative activities help teams implement best practices. The adaptive potential of the collaborative approach, together with the model's emphasis on continuous small tests of change toward larger improvement aims, has resulted in a rich tapestry of applications. The collaborative method has become one of the leading approaches to quality improvement (QI) in practice worldwide largely on the strength of its face validity – the idea that improvement teams are likely to be more effective when working together rather than in isolation (Wilson et al., 2003).

Since 1995, many health care provider organizations and funders have supported improvement collaboratives as a strategy to improve delivery of care and health outcomes in communities they serve. The model has been applied to dozens of clinical- and process-improvement topics, predominantly in health care organizations.

Review of the Literature on Collaboratives
The literature on collaborative impact and effectiveness consists largely of health-delivery-system applications. One leading study is a systematic review of the literature on collaborative effectiveness in improving quality of care (Schouten, Hulscher, Van Everdingen, Huijsman, & Grol, 2008). This review of 72 published studies from 1996 to 2006 showed moderate positive results. The authors conclude that, since collaboratives play a key role in strategies for accelerating improvement, further knowledge of collaborative component effectiveness and drivers of success are crucial to determining the value and best applications of the method. Another systematic review identified 43 published studies evaluating the efficacy of the collaborative method in driving change (Newton, Davidson, Halcomb, Dennis, & Westgarth, 2006). Newton and colleagues conclude that the collaborative method has significant potential to reduce treatment gaps and improve outcomes. Other studies demonstrate the impact of

Grounded in principles of organizational and adult learning theory, the collaborative method brings subject-matter experts together with practitioners from participating organizations in a facilitated learning environment.

collaboratives in a range of health care topics and settings (IHI, July 2011; Pronovost, Berenholtz, & Needham, 2008; Koll et al., 2008; Gould et al., 2007; Halpin et al., 2012).

The literature also includes examples of the collaborative model improving care and services for vulnerable populations, including frail elders, children with special health care needs, and indigent populations (Farquhar, Stryer, & Slutsky, 2002; Schiff & Ricketts, 2006). One example of the model applied in the social services with vulnerable populations was supported by Casey Family Programs (2011). In 2001, Casey introduced this improvement methodology to child welfare agencies and has since supported collaboratives on topics such as recruitment and retention of resource families (2005), kinship care and differential response (2007), and disproportionality (2009).

Factors influencing organizational change through collaboratives have been reported. One study identified five factors upon which collaborative participants' success frequently depends: a team's ability to work as a team; its ability to learn and apply QI methods; the strategic importance of its work to its home organization; the culture of its home organization (Does it support the work? Does it value QI?); and the type and degree of support from senior management (Ovretveit et al., 2002). Mills and Weeks (2004) found that high-performing collaborative teams perceived their work to be part of their organization's stra-

Another major distinction between improvement collaboratives and these other collaboration models is that improvement collaboratives aim to improve performance within organizations, by bringing evidence-based models into practice.

tegic goals, had more front-line staff involvement and support, had strong team leadership, and teams that stayed together longer were also more successful in effecting change. Schouten, Grol, and Hulscher (2010) identified three components highly correlated with team success: sufficient expert and faculty support, effective teamwork, and structured opportunities for learning and peer exchange.

The literature suggests collaboratives have been effective in engaging high-performing health care provider organizations in QI, and for harvesting what can be learned so that broader dissemination through collaborative or other means can facilitate spread of best practice. The model has most often been applied within, rather than across, organizations, and less frequently applied in social-service settings or to topics requiring cross-agency or cross-sector coordination.

Other Collaboration Strategies

Other models of collaboration have been implemented by funders to address systems change and the complex needs of vulnerable populations in communities. Compared to the Breakthrough Series model, these methods generally involve more complex structures that are either place-based, health-systems focused, or of longer duration in order to address health and social determinants of change that impact vulnerable communities.

Another major distinction between improvement collaboratives and these other collaboration models is that improvement collaboratives aim to improve performance within organizations, by bringing evidence-based models into practice, improving implementation of these models, and introducing QI practices; whereas other collaborative methods seek to improve multi-organization systems, either by improving interagency coordination or through development of a collective strategy such as the collective-impact model that all participants carry out. Collective impact begins with the premise that large-scale social change comes from better cross-sector coordination rather than from the isolated efforts of individual organizations (Kania & Kramer, 2011). Interagency collaborations typically apply cross-sector approaches to address health systems and the health and social determinants of poverty and risk. A few examples of interagency collaboration are summarized below.

To address high-risk populations with complex socioeconomic, health, and behavioral needs, the Annie E. Casey Foundation has applied a social-determinants framework and a regionally focused approach involving interagency collaboration to plan and coordinate strategies for improving the lives and health outcomes for high-risk youth. In a three-year national collaborative operated by the Center for Health Care Strategies, the foundation used the model to focus on systems change within communities to address determinants of improvement in health and mental health for youth in child welfare (Allen, Pires, & Mahadevan, 2012).

Another example is Partnerships for Health, in which The Colorado Trust funded 13 interagency health partnerships over four years. The goal was to improve coordination of health services at the community level by partnering hospitals, local health departments, community-based organizations, government agencies, and community members in 29 counties. Teams developed and implemented coordinated plans to build, strengthen, and sustain the infrastructure of Colorado communities by proactively addressing public health issues (Colorado Trust, 2012).

Strategies for evaluating the relationship between interagency collaboration, attributes of collaboration, and effects on large-scale community-health initiatives have been reported. Larson and Hicks developed a Process Quality Rating Scale (a 15-item questionnaire), and the Working Together Index (measuring motivation and interagency collaboration). Examining the influence of collaboration on program outcomes from the Colorado Nurse Family Partnership, Hicks found a strong relationship between perceived quality of the collaborative process (in particular, the authenticity of the collaborative process) and effective program implementation. Hicks also found a strong relationship between quality of the collaborative process (authentic participant involvement, interaction and shared decision making) and outcomes of collaboration (success of community health programs) (Hicks, Larson, Nelson, Olds, & Johnston, 2008). In Partnerships for Health, Bartsch, Keller, Chung, and Armijo (2012) applied Larson and Hicks' instruments to measure attributes of collaboration with the greatest influence on program success. What emerged as critical to strengthening and sustaining inter-agency collaboration were participation of key community leaders, participant buy-in to the process and the outcomes of collaboration, staff collaboration with a project coordinator, use of data to support implementation, and external technical assistance to support collaboration, including neutral party facilitation.

Adaptation of the Improvement Collaborative Model to a Multi-Organizational Setting

The Health Foundation for Western & Central New York provides grants and programming in 16 New York counties to improve the health and well-being of frail elders and children through age 5 in impoverished communities. These target populations face a range of health challenges that often require support from multiple health and social-service providers. Many organizations serving these populations in the region lack quality-improvement infrastructure and struggle to exist. In this setting, the foundation conducted seven collaboratives from 2005 to the present.

The collaborative model applied by the founda-

This model aimed to improve services at a systems level (to create a health system that connects health care providers with home health, hospice, aging, and community-based services) by bringing organizations in the system together to improve care and service coordination.

tion adapts the Breakthrough Series' intra-organization focus to a multi-organizational setting. The model focused primarily on improving the performance of participating organizations, with payoffs in systems improvement anticipated through interagency coordination. This model aimed to improve services at a systems level (to create a health system that connects health care providers with home health, hospice, aging, and community-based services) by bringing organizations in the system together to improve care and service coordination. For most participants, the initial impetus for involvement in the collaborative was benefit to their own organizations and, in the process of learning and working together, more ambitious interagency coordination was achieved. The foundation's collaborative model thus had a dual purpose: intra-organization improvement and interagency coordination to improve care and services for vulnerable populations in the region.

The foundation's collaborative model combined the Breakthrough Series model with a key component of systems-change initiatives: use of multi-agency teams. In the foundation collaboratives, participants formed teams representing different provider organizations or agencies that came together to improve care transitions and other hand-off processes for vulnerable populations. This article describes the results of the foundation's

The model trains participants to develop specific goals, conduct small tests of change and apply the Plan-Do-Study-Act method to implement best practice improvement goals, and measure performance to goals at regular intervals.

adaptation and use of the Breakthrough Collaborative method with health and social-service agencies working in multi-agency teams across organizations to improve service coordination and the needs of vulnerable populations.

The Breakthrough Series Collaborative Approach and Theory of Change

The Breakthrough Series collaborative approach and model for improvement define the predominant theoretical framework and strategy for improvement applied in the foundation collaboratives. According to this model, collaborative participants work in teams over 18 months to accomplish improvement aims they establish at the outset of the collaborative. Teams receive training in how to implement the best practice and apply the model to monitor and achieve implementation. The model trains participants to develop specific goals, conduct small tests of change and apply the Plan-Do-Study-Act method to implement best practice improvement goals, and measure performance to goals at regular intervals. Teams complete activities common to Breakthrough Series collaboratives (included in foundation collaboratives):

- Pre-work – Before the collaborative begins, participants get acquainted with the collaborative approach, form teams, and identify their study population.
- Learning sessions – Participants attend four two-day learning sessions, one every six months

during the collaborative. They feature training, team activities, and opportunities for peer exchange.
- Work periods – The months in between each learning session are known as "work periods," when teams test, monitor, refine, and implement improvements toward goals and meet bimonthly with faculty.
- Faculty support – Teams receive training and coaching from faculty with expertise in the applied best practice and QI. In the foundation's care-transition collaboratives, Dr. Eric Coleman (2007) provided training in the Care Transitions Intervention and Carol Levine trained teams in Next Step in Care (United Hospital Fund, 2008). In all four collaboratives, improvement advisors Chris Klotz, Amanda Norton, Jane Taylor, and/or Meghan Guinnee provided QI coaching and technical support.
- Collaborative learning – Participants work in teams (multi-agency teams in foundation collaboratives). Peer learning and collaboration are structured to help teams achieve collaborative goals.
- Data collection and progress reporting – These tasks are performed every other month.
- Summary conference – Learning session 4 is a regional conference where teams share results and work toward improvement continues.

The Foundation's Reinforcements to the Breakthrough Series Approach

Competencies reinforced in foundation collaboratives reflect its funding and organizational goals. Identified by the Institute of Medicine (IOM) in *Health Professions Education: A Bridge to Quality*, these competencies include working in interdisciplinary teams, collaboration across organizations, employing evidence-based practice, applying QI tools and measurement to guide decision-making and improvement, and a patient- and family-centered focus (IOM, 2003). These competencies help participants address the complex, multifaceted needs of the foundation's target populations:

- Foundation collaboratives focus on improving coordination of care and services for vulnerable populations by use of multi-agency teams. To facilitate better patient hand-offs across care and

service providers, collaborative teams represent several organizations or departments within organizations working together to improve care coordination.

- A high degree of collaborative structure, training, and technical assistance facilitated by the foundation helps teams achieve goals and learn transferrable skills in improvement science.
- Chief executive officers are actively engaged in collaborative activities.
- Collaboratives train and engage parents, caregivers, and patients in care management and coordination so they may assume a more active role in their own care or that of loved ones.

The foundation's role as funder and developer of the four collaboratives significantly reinforced each effort. It created a collaborative model with both intra- and interagency benefits to participating organizations and to health and social-service systems in the region. The foundation actively promoted this model and required funded teams to adhere to it. It both defined the intervention – the model – and was part of the intervention as funder and reinforcer. The foundation's involvement was identified by collaborative participants as a driver and determinant of team success.

There are other assumptions inherent in foundation collaboratives:

- Given the track record of the Breakthrough Series and model for improvement for improving process in clinical settings, the foundation hypothesized these approaches will support effective learning and improvements among its target populations in both clinical and social-service settings.
- The foundation's reinforcements to the collaborative approach increase the likelihood of success for participants in these settings and increase capacity for improvement.
- With increased capacity, collaborative improvements will more likely be sustained and spread.

The Foundation's Four Collaboratives

In each foundation collaborative, the collaborative process was essentially a tool or strategy for adoption of a best practice. Collaborative impacts

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reflect the combined effect of adopting and implementing specific best practices and the process of participation in the collaborative.

- *Collaborative No. 1: Improving Frail Elder Care (September 2005-October 2006).* Eight teams representing 16 health care and hospice organizations focused on improving information transfer between organizations. Six teams focused on improving care transitions and two teams focused on coordinating palliative care for frail elders.
- *Collaborative No. 2: Improving Care Transitions (April 2007-October 2008).* Thirteen teams representing 25 health care and hospice organizations focused on improving care transitions for frail elders as they move from one care setting to another. Teams included representatives from the sending and receiving care provider in the target transition. Teams implemented Care Transitions Intervention (CTI), a demonstrated best practice for improving care transitions. Through CTI, patients with complex care needs and family caregivers receive specific tools and work with a transition coach to learn skills that will ensure their needs are met during care transitions. The intervention encourages a more active role for patients and caregivers during

The foundation played an active role in reinforcing collaborative members' participation, accountability, reporting, and results.

transitions through a focus on the "four pillars": medication self-management, use of a personal health record, timely primary and specialty care follow-up, and knowledge of red flags that indicate a worsening condition and how to respond. Collaborative goals were to implement CTI, inform and engage patients, improve continuity of care, and reduce medication errors and hospital readmissions.

- *Collaborative No. 3: Engaging Family Caregivers in Care Transitions (April 2009-October 2010).* Fourteen teams representing 19 health and human service organizations focused on improving frail elder care transitions through Family Caregiver Partnerships (FCP). Findings from the foundation's first two collaboratives suggested expanding the knowledge and role of family caregivers would help improve frail elder care transitions. The partnerships aimed to improve caregiver knowledge and resources and create effective partnerships between health care providers and caregivers. Teams implemented best practices (CTI and Next Step In Care). Goals were to expand caregivers' knowledge and confidence, improve continuity of care, and reduce medication errors and hospital readmissions.
- *Collaborative No. 4: The Right Start (October 2009-March 2011).* Fifteen teams representing 31 health and human service organizations focused on implementing best practices in early childhood curriculum emphasizing social, emotional, and behavioral skills; behavioral assessment; and parenting skills. Right Start's primary goal was to improve the social and emotional well-being, behavior, and social skills of children through age 5 in the classroom and home. Other goals were to improve service coordination and expand participants' QI knowledge and capacity.

In each collaborative, the funder focused on topic identification; initiation (the foundation released a Request for Participation, reviewed applications, conducted site visits, and selected teams for participation); funding (teams received grant funds, typically $10,000 per organization, to support participation); retention of faculty to implement training and technical assistance; and meeting support. The foundation also played an active role in reinforcing collaborative members' participation, accountability, reporting, and results.
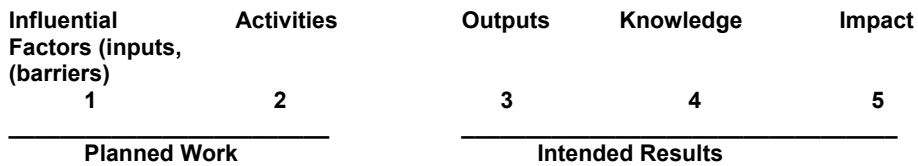
Methods

The foundation commissioned an evaluation to examine four collaboratives. In each collaborative, health and social-service agency managers representing different organizations worked in teams to adopt evidence-based practices and improve care and service coordination across agencies and settings. The evaluation examined whether a modified collaborative model using multi-agency teams resulted in improved learning, communication, coordination of services across participating organizations, and implementation of best practice.

A formative, mixed methods evaluation of the four collaboratives was conducted over a three-year period. A logic model derived from the W.K. Kellogg Foundation (2004) framework describes the theory of change applied. The evaluation examined collaborative activities, inputs, influential factors (enabling and risk factors influencing team achievement), and short- and long-term results expressed as Outputs, Knowledge and Impacts. (See Figure 1.) The evaluation shed light on the impact of foundation collaboratives on participating organizations and target populations, on their role in sustaining best practice and spread of best practice to new areas or other organizations, on the components of collaborative structure and process with the greatest perceived impact on team achievement, and on how findings might inform other funders and the field.

Data Sources

Evaluation data sources include participant and faculty reports through semi-structured interviews conducted at specified intervals during and after each collaborative, faculty assessment of

FIGURE 1 Theory of Change Framework

Influential Factors (inputs, (barriers)	Activities		Outputs	Knowledge	Impact
1	2		3	4	5
Planned Work			Intended Results		

team achievement using the IHI Assessment Scale for collaboratives (2004), and participant-reported data on project outcome. Data sources varied, including administrative data on hospital utilization, pre- and post-CTI measures, patient and family surveys, and other sources tailored to measure team's specific goals.

Semi-structured telephone interviews were conducted with participating organization CEOs and team representatives at the beginning of each collaborative where possible, halfway through each collaborative, at the end of each collaborative, and one year following. Interviews with faculty were conducted every four months. All interviews were structured around the evaluation logic model and areas of inquiry summarized above. Qualitative analysis of interview data was performed. Data were coded and analyzed for patterns and trends within and across collaboratives.

Faculty assessed team achievement using the IHI Assessment Scale for collaboratives (2004), a five-point scale that measures achievement of significant, sustainable improvement through implementation of evidence-based practice. (See Table 1.) The same faculty (trained improvement advisors) rated teams in all four collaboratives.

When possible, longitudinal analysis examined the impact of collaboratives on organizations over time. A longitudinal approach also allowed real-time collaborative process improvement, addressing a topic of interest to the foundation and a limitation in the literature – limited evidence on long-term collaborative impact.

Results

In each collaborative, each team determined its own specific improvement aims and outcome measures within the general collaborative topic. (See Table 2.) As a result, a wide range of impact measures were reported.

Faculty, using the IHI scale, assessed final achievement on improvement goals defined by each team. (See Table 3.) On average, 94 percent of teams achieved at least "modest improvement" (see Table 1) and 62 percent achieved "significant improvement" or greater. Teams reaching "significant improvement" (a score of 4.0) have been more likely to sustain and spread improvement gains after a collaborative ends than teams with lower improvement scores (J. Taylor, personal communication, 2009). Variation observed in team achievement across collaboratives resulted in part due to variation in the complexity of aims and best practices.

In this evaluation, results observed in the areas of learning, communication, impact on participating organizations, and sustainability of organizational impact can be attributed to changes within organizations resulting from participation in foundation collaboratives. Impact on the target populations and spread of organizational improvements also likely are linked to organizational changes achieved in these collaboratives.

Advances in Learning and Communication
Learning best practice. After one year, evidence of learning best practices was strong in all four collaboratives. In Collaborative No. 1, all eight teams reported and demonstrated through implementa-

TABLE 1 The IHI Assessment Scale for Collaboratives

Scale	Descriptive Assessment of Collaborative Team Achievement
0.5	**Intent to participate**
	Organization has identified interest in project,
	but the aim or charter has not been completed or the team has not been formed.
1	**Forming team**
	An aim statement or charter has been completed and reviewed.
	Individuals or teams have been assigned, but no work has been accomplished.
1.5	**Planning for the project has begun**
	An initial plan to begin work on the aim is in place.
	Measures have been identified and work to collect baseline data started.
2	**Activity, but no changes**
	Team learning has begun
	(planning for testing, measurement, data collection, study of processes, surveys, etc.).
2.5	**Changes tested, but no improvement**
	Initial cycles for testing changes have begun.
3	**Modest improvement**
	Successful tests of changes have been completed from toolkit related to the team's aim.
	Some small-scale implementation has been done.
	Anecdotal evidence of improvement exists.
3.5	**Improvement**
	Some improvement in project goals is seen based on run chart data.
4	**Significant improvement**
	All appropriate components of the toolkit in testing or implementation.
	Project goals are more than 50% complete.
5	**Outstanding sustainable results**
	Implementation cycles have been completed and all project goals and expected results have been accomplished.
	Organizational changes have been made to accommodate improvements and to make the project changes permanent as standard work.

TABLE 2 Four Foundation Collaboratives: Overview of Results

Collaborative	Results Summary
1	All but one team accomplished the goal of improving information transfer between sites of care to support care transitions and palliative care.
2	All 13 teams achieved CTI process improvements, and 10 fully implemented transition coaching. Many also reported reduced rates of hospital readmissions and emergency department visits, improved medication management, and patient self-management.
3	14 teams implemented best practices (CTI and NSIC) focused on improving the knowledge, role, and engagement of family caregivers so that effective partnership between caregivers and care providers will support better transitions. Outcomes included evidence of expanded caregiver roles, knowledge, confidence and satisfaction, and lower hospital readmission rates.
4	15 teams implemented best practices in social, emotional, and behavioral curricula; behavioral assessment; and parenting programs that reached more than 3,500 staff, parents, and young children. Outcomes included evidence of new knowledge and improved behavior and social skills in the classroom and home.

tion that they had learned best practices involving care transitions and palliative care. In Collaborative No. 2, all teams reported and demonstrated learning CTI, the transition-coach model, and the four pillars. In Collaborative No. 3, all teams learned and implemented best practices in family-caregiver partnership to support care transitions, including CTI and Next Step in Care (NSIC). In Right Start, all teams learned and implemented new early childhood programs and curricula or parenting programs designed to foster the social, emotional, and behavioral well-being of young children in preschool and at home.

Learning quality improvement. In the first three collaboratives, all teams reported and demonstrated increased QI knowledge and most applied QI successfully to test and implement best practices. Most participants reported the QI training they received was highly effective. In Collaborative No. 3, half reported the QI training was effective and half – particularly participants from earlier collaboratives – suggested differentiating QI training based on participant's prior knowledge or experience. Right Start participants also reported significant QI learning, highlighting the model for improvement as "a new way of thinking about improvement."

Communication. Participants viewed collaboratives as powerful mechanisms for improving com-

munication and breaking down silos within and across organizations working on care and service coordination for vulnerable populations. Many noted that collaborative topics require multi-agency collaboration to achieve goals. In the first collaborative, participants identified the role of multi-agency teams in improving communication about care transitions as the collaborative's most effective attribute. In Collaborative No. 2, 10 teams reported that communication across participating organizations greatly improved as a result of the collaborative; six teams identified better communication as the primary outcome. In the second and third collaboratives, more than half the teams expanded care transition partnerships one year later beyond the collaborative to other providers, community-based organizations, counties, and insurers. In Right Start, all teams reported improved communication between and among young children, teachers, parents, teams, and organizations serving children in impoverished communities. The success of the foundation collaboratives in developing informal professional networks and relationships across care settings was highlighted.

Impact of Foundation Collaboratives on Participating Organizations
In Collaborative No. 1, all but one team reported achieving its collaborative improvement goals. As a result, new transition or palliative care processes

TABLE 3 Faculty Assessment of Improvement in Foundation Collaboratives

Assessment score	Description of achievement	Number of teams reaching this score or higher	Percentage of teams reaching this score or higher	Range of teams reaching this score across collaboratives
3.0	Modest improvement	47	94%	86% to 100%
3.5	Improvement	41	82%	77% to 100%
4.0 or higher	Significant improvement	31	62%	46% to 88%

were implemented in all but a few participating organizations. In Collaborative No. 2, implementation of CTI led to new transition-coaching and medication-reconciliation procedures at admission and discharge in participating organizations; new procedures for transferring patient information across sites of care; and new processes to support patients and family caregivers in self-management. In Collaborative No. 3, all teams reported new organizational capacity to improve care transitions and support family caregivers that they achieved through staff training in CTI and NSIC, caregiver training, and referral networks. Right Start teams also reported new organizational capacity and new or improved services for young children and their families. For example, hundreds of teachers and staff in participating organizations received training in early childhood-behavior management and curriculum best practices. Participants reported improvements in their ability to engage teachers, staff, and parents in new curricula and behaviors and conduct effective follow-up and referrals. Participants also reported that these strategies increased their role and effectiveness in working with children and families.

In all four collaboratives, organizations partnered in new ways and more effectively with other agencies as a result of the collaborative. Many also reported continued use of the model for improvement one year later.

Impact on Target Populations
In the first collaborative, six of eight teams achieved interventions with a positive impact on

frail elders; two teams reported minimal target-population impact. Impacts measured included increased patient and caregiver knowledge about transitions, medication management, and palliative care; better communication among patients, families, and providers during care transitions; and, in a few cases, reductions in transfer-related error rates and time delays.

In Collaborative No. 2, all teams reported positive impact on the target population. Applying Care Transition Measures (CTM), teams observed increases in patient activation, satisfaction with care providers, and patient and family knowledge about care transitions, hospitalization triggers, and medication management. Lower rates of hospital readmission and emergency visits among patients post-transition were also reported.

In Collaborative No. 3, 862 older adults and 710 caregivers received transition coaching. Care Transition Measures results demonstrated better understanding by caregivers of their role in care transitions and coached patients feeling more prepared for care transitions – overall, a 56 percent increase in patient knowledge about care transitions and a 25 percent increase in patient activation. About half of the teams also reported lower hospital readmission rates among coached patients and patients whose caregivers were coached.

In Right Start, all teams reported evidence of target-population impact. Through new curriculum, at least 3,000 children and 500 teachers and parents received training in self-awareness

TABLE 4 Best Practices Sustained One Year Following Collaboratives

Collaborative	Number and Percentage of Teams Reporting Sustained Best Practices
1	7 out of 8 teams (88%)
2	10 out of 13 teams (77%)
3	12 out of 14 teams (86%) sustained some CTI components; 10 teams (71%) sustained all CTI components including transition coaching.
4	15 teams (100%) and all but 3 organizations reported sustained improvement.

skills, behavior management, conflict resolution, empathy, and pro-social skills. In the Syracuse City School District, for example, all pre-K staff was trained to implement Second Step curriculum; 1,500 preschool-age children experienced Second Step in the classroom and 1,500 subsequently each year. Teams also reported improvements in classroom behavior: a decrease in the amount of class time spent discussing classroom behavior and decrease in the number of children displaying behavior that teachers needed to discuss.

Effectiveness of Collaboratives in Sustaining and Spreading Improvement

Whether improvements and best practices achieved in the collaboratives were sustained in participating organizations or spread within their organizations or to other organizations one year later was also assessed. (See Tables 4 and 5.) Across all four collaboratives, 88 percent of teams on average reported sustaining best practices (the range was 77 percent to 100 percent across the collaboratives) and 78 percent reported spread of best practices one year later (the range across collaboratives was 57 percent to 87 percent).

Participants in the three care-transition collaboratives noted that Centers for Medicare and Medicaid (CMS) policies implemented after the collaboratives – new reimbursement incentives or programs aimed at preventing hospital readmissions, and new participation requirements for hospice – helped foster sustainable collaborative achievements. Participants noted that utilization and cost savings resulting from better care transi-

tions also helped sustain these programs. In Right Start, teams institutionalized new curriculum by developing policies and procedures for training and implementation.

The Collaborative Experience

Participants identified strong organizational partnerships formed through multi-agency teams as a significant factor in collaborative achievement. Other factors included strong and consistent team leadership, support from CEOs, and the extent to which payers and regulatory agencies like CMS reinforced best practice or required similar approaches. Identified risks to collaborative achievement included team or organizational instability (e.g., changes in team leadership or membership, reorganizations); demands on staff time or too few staff involved in the collaborative; lack of clarity about team roles; financial instability of the organization or no clear path to sustainable funding of interventions; and interventions not well aligned with organizations' strategic priorities.

Participants rated the effectiveness of the collaboratives in fostering achievement, sustainability, and the spread of best practices. Highest ratings were assigned to collaboratives' effectiveness in fostering team achievement and sustaining best practices; lower ratings were assigned to effectiveness in supporting the spread of best practices. (See Table 6.)

Discussion

This evaluation examined the impact of the Health Foundation for Western & Central New

TABLE 5 Spread of Best Practices One Year Following Collaboratives

Collaborative	Number and Percentage of Teams Reporting Sustained Best Practices
1	7 out of 8 teams (88%)
2	11 out of 13 teams (85%)
3	8 out of 14 teams (57%)
4	13 out of 15 teams (87%)

York's modified collaborative model in achieving improvement within organizations and coordination across organizations to address the complex health and welfare needs of vulnerable populations. Considered in the context of Easterling's developmental model of networks and collaboration (2013), findings from this evaluation suggest that the foundation's collaborative model provided support to a network of organizations that were either at Stage 1 in Easterling's model – organizations with common interests disconnected from one another, or Stage 2 – organizations with common interests are informally networked. Through the collaboratives, participating organizations improved their ability to work together to coordinate care and services for vulnerable populations. Findings suggest that the foundation's model and use of multi-agency teams fostered effective communication by breaking down silos so that transitions and other complex care-coordination needs could be addressed more effectively. Participants highlighted multi-agency teams, learning sessions, and peer and faculty support as the most beneficial collaborative components.

Results indicate that all but a few participating organizations achieved the goal of learning and implementing best practice. Fifty percent to 80 percent also reported an increase in QI knowledge and stronger organizational focus on improvement. Participants in more than one collaborative observed cumulative effects and benefits of repeat participation. The following quote illustrates feedback on the experience:

This changed the whole conversation [in our organization] about care coordination and the continuum of care. Now we focus on helping patients stay out of the hospital and are thinking about care beyond the hospital walls – supporting the continuum of care and role of the family caregiver.

Improving patient- and family-centered care and the role of families in coordinating care for vulnerable populations was another goal and outcome of the collaboratives. Findings suggest family caregivers and parents increased their knowledge, activation, and confidence through collaborative interventions. One organization reported a 36 percent increase in caregiver confidence and a 24 percent reduction in re-hospitalization among patients with caregivers that received transition coaching; other organizations achieved similar results.

Foundation collaboratives also reinforced CEO engagement in achieving collaborative goals, and active CEO participation was encouraged. Participants and faculty reported CEO engagement in the collaboratives was good overall and, one year later many CEOs were still working to raise the profile and impact of collaborative achievements. Participants identified CEO support as a strong influence over whether collaborative achievements and programs were sustained, and an even greater influence over spread because of the critical role CEOs play in opening doors for collaboration with other organizations.

TABLE 6 Participant Ratings of Collaborative Effectiveness

Collaborative Support For	Range of Ratings (10 = Highly Effective)
Team achievement	8.0-8.9
Sustainability of best practices	8.2-8.9
Spread of best practices	7.8-8.1

The impact of the collaboratives is particularly noteworthy because half the participants were from social-service agencies – not the usual suspects for a Breakthrough Series collaborative. Also, the foundation's target populations are high-risk groups that are difficult to impact.

All but one team reported the collaborative experience was beneficial overall. The team that did not find the experience beneficial participated in the first Care Transitions collaborative. Compared to other teams, this team was less invested or less able to complete collaborative requirements. This team and several others from the first collaborative described collaborative workload requirements as a barrier. This led the foundation to streamline participant data collection and limit reporting to every other month in subsequent collaboratives.

Implications for Funders
In addition to use of multi-agency teams and CEO and patient/family engagement, lessons learned from the foundation collaboratives suggest the benefit of other structures and steps that funders can take to strengthen collaboratives. One lesson for funders relates to the role the foundation played in defining the collaborative model and funding and promoting its implementation. Participants identified its role in the collaboratives as an important determinant of results achieved. Other lessons learned influenced the structure of more recent collaboratives and generated the following recommended guidelines for implementing them:

- Build in planning and pre-work activities to define team roles and responsibilities, learn best practices, and plan implementation.
- Give participants early guidance about what to expect in the collaborative process, including funder expectations.
- Coach and motivate CEOs to reinforce collaborative activities in their organizations.
- Coach teams to present improvement data and align collaborative projects with their organizations' existing programs and strategic priorities.
- Provide practical information for sustainability, including funding opportunities and public policy.

Study Limitations
Limitations of this study include reliance on participant and faculty report as primary data sources. Some data were not independently validated, and some may be influenced by effort-justification bias. However, given the goals of this evaluation – examining the influence of multi-agency teams and collaborative impact on participant learning, collaboration, adoption of best practice, and experience – self-report can be a valid information source. Outcomes reported by participants were supported by administrative data, CTM, and other pre- and post-intervention data collected by teams. This data helped to validate team self-reported outcomes.

Inter-rater reliability among faculty in the collaboratives is enhanced because faculty and measurement strategies remained constant across the collaboratives. Generalizability of findings is also supported by data collection from 91 diverse orga-

Funders interested in improving services at a systems level – for a system that connects health care providers with home health services, aging services, and community-based organizations – could apply this model to bring together organizations in the system. Applying this collaborative approach, participants initially focused on intra-agency improvement can, through working together, achieve interagency coordination and other systems improvements.

nizations, including long-term care facilities, hospitals, hospices, and social-service and Head Start agencies. The number and range of participants helps reinforce the generalizability of findings.

Another potential limitation is the range of outcomes and data sources applied by collaborative teams. While a more unified set of measures and data sources might strengthen evaluation of outcomes, these measures were selected by teams to achieve specific goals and outcomes of interest in the foundation's collaboratives.

Conclusion

This evaluation examined the impact of a modified collaborative model with organizations that were mostly new to the collaborative method. Results indicate the Health Foundation for Western & Central New York's collaboratives fostered strong achievement through a model that focused on improvement within organizations while at the same time using multi-agency teams to foster coordination of care and services across organizations to support vulnerable populations. Other achievements included increased participant knowledge about QI and best practices for care coordination, increased collaboration, enhanced coordination of care and services, and sustainability and spread of best practices. Results suggest that the foundation's collaborative model benefitted participating organizations and also improved coordination and systems of care for vulnerable populations.

The findings are significant because of the prevalence of the collaborative method as a strategy for improvement; the large number of organizations in the U.S. serving frail elders and young children in poverty; the limited improvement resources these organizations typically possess; the importance of coordinating health and social services for vulnerable populations; and the role these types of agencies could play in creating coordinated systems of care. Funders interested in improving services at a systems level – for a system that connects health care providers with home health services, aging services, and community-based organizations – could apply this model to bring together organizations in the system. Applying this collaborative approach, participants initially focused on intra-agency improvement can, through working together, achieve interagency coordination and other systems improvements. Findings can inform funders and the field about the design and use of collaboratives to help organizations work together to improve coordination and systems of care and services for vulnerable populations.

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RESULTS