Expanding the Quality Improvement Collaborative Approach to Improving Quality of Care and Services for Frail Elders and Children Living in Communities of Poverty in Western and Central New York

Submitted to Community Health Foundation of Western and Central New York

By

Lisa Payne Simon, MPH

April 2009

Acknowledgments: Special thanks to 50 key informant interviewees whose expert knowledge and insights contributed greatly to this paper, and to Marsha Nelson, RN, MBA and Heather Sula of the California Institute for Health Systems Performance for assistance in preparing this report.

EXECUTIVE SUMMARY

Part I. Introduction

Community Health Foundation of Western and Central New York (CHFWCNY) is exploring alternatives for expanding its programs in the area of Quality Improvement (QI), including the use of a Quality Improvement Collaborative approach as an ongoing tool and strategy to achieve improvements in the quality of care and systems serving frail elders and children living in communities of poverty. A Quality Improvement Collaborative (QIC) is a short-term (six to 18 month) learning system that brings together a number of teams from multiple sites across a region or country to seek improvement in a focused topic area.[1] To develop a sound basis for understanding and considering options for expanding QI programs and the QIC approach, CHFWCNY commissioned a literature review, key informant interviews and a paper. Presented in five parts, this paper synthesizes findings from the literature and from fifty key informant interviews.

Selection of programs presented in this paper is guided by CHFWCNY's philosophy (Figure 1) and a set of criteria used to define the scope of QI programs included. Included for analysis are demonstrated, evidence-based QIC and QI best practices that if implemented could accomplish the following:

- Break down system silos - increase coordination of care and services for CHFWCNY target populations
- Promote peer learning, shared learning
- Expand the QI skills and capacity of systems and staff that serve target populations
- Foster leadership at the governing and senior executive levels to support QI in western and central New York.

Part II. The QIC Approach

To guide this research, CHFWCNY posed a series of questions about the QIC approach. Key questions included: what issues relevant to frail elders and children living in communities of poverty can be successfully impacted using the QIC approach?; what has been learned by other foundations or organizations that use a QIC approach?; what trends impact the QIC approach?; and what trade-offs should be considered in thinking about using a QIC approach as an ongoing tool or strategy for achieving CHFWCNY's goals? Responses to these and other questions are discussed in Part II and summarized below.

The adaptive potential of the QIC approach (together with the model's emphasis on continuous, small tests of change toward larger improvement aims) results in a rich and diverse tapestry of improvement efforts worldwide. This adaptive potential is also what makes highly rigorous, scientific evaluation of the effectiveness of the QIC approach challenging. Important QIC contributions and studies often do not meet the requirements of a controlled study design that are necessary for scientific proof of impact. As a result, the peer-reviewed literature provides positive but limited evidence in support of the QIC approach. Many QICs (published or described on the World Wide Web) offer compelling insights into the lessons learned, innovation and benefits of the QIC approach.

<u>QIC Topics Relevant to Frail Elders</u>

A summary of QICs addressing frail elder care identified from the literature, web-based research and expert interviews is presented in Part II. In addition, experts suggest QIC topics for CHFWCNY to consider for improving the care of frail elders. Leading topics are presented

below by strength of expert interviewee endorsement. Topics with an asterisk (*) are also discussed in Part V as recommended QIC topics for CHFWCNY to consider.

- Transitions of care*
- Palliative care*
- Readmissions* (could focus on readmission or incorporate a readmissions emphasis in a broader QIC on transitions)
- Family caregiving*
- Medication management/polypharmacy/medication reconciliation*
- Chronic disease care*
- Medical home: including improved elder case management and referral, coordination of complex care, caregiver engagement, access to care
- Nursing home QI* - topics include pressure ulcer prevention, pain management, reducing use of patient restraints
- Nursing home culture change for QI (Wellspring model most frequently cited)
- Advance directives (could be included in a transitions or palliative care QIC, other lower intensity spread mechanisms could be used)
- Elder appropriate care in the Emergency Department (emerging topic)*

QIC Topics Relevant to Children Living in Communities of Poverty

QICs addressing issues relevant to children living in communities of poverty are also summarized from the literature, web-based research and expert interviews. Experts suggest QIC topics for CHFWCNY to consider for improving the care of children living in communities of poverty. Topics are presented below by strength of expert interviewee endorsement. Topics with an asterisk (*) are also discussed in Part V as recommended QIC topics for CHFWCNY to consider over the next three to five years.

- Medical home*
- Developmental and behavioral screening and surveillance*
- Obesity
- Ambulatory care process improvement
- Asthma*
- Diabetes*
- Attention Deficit Hyperactivity Disorder (ADHD)

QIC Trade-offs

Experts identified trade-offs to consider in thinking about using a QIC approach as an ongoing tool or strategy for achieving CHFWCNY's goals. When asked about trade-offs of using the QIC approach, leading experts provided views about the "positives" of the QIC approach for achieving CHFWCNY improvement goals, and some advice on execution (summarized below).

- QICs are good mechanisms for engaging people.
- QICs function best when the topic is focused, proven, evidence-based, and measureable, with a change package that is simple and clear.
- QICs offer a relatively efficient use of experts to facilitate and guide multiple provider teams to internalize best practice and translate the opportunity to their own setting.
- QICs are good for innovation - for the research and development test of an improvement strategy - they provide focus and depth.

- QICs promote systems thinking skills. Systems thinking is often a new skill for clinicians - a new lens through which they can view their practice.
- QICs will effectively reach "vanguard practices - innovators that self-select to participate in a QIC".
- Coaching calls and site visits will reinforce QIC activities and promote QIC efforts within participating organizations.
- "The QIC approach is powerful, especially when leadership actively supports it."
- The QIC approach is effective at impacting the health of targeted populations. It may be a less effective vehicle (by itself) for impacting population health.

Interviewees also provided other key considerations on the use of a QIC approach:

- "It is hard to create rapid or lasting change using the QIC approach one cycle at a time."
- The QIC approach requires investment of time and resources in order to be successful. "QICs are relatively expensive and labor intensive vehicles for change."
- QIC participants often need QI training, technical assistance and coaching in order to execute change and QIC participation effectively.
- Successful QICs require discipline around the QI process. "A strong Improvement Advisor is needed to ride teams - providing support and guidance."
- QIC data collection requirements are considered substantial and can be hard to enforce.
- QICs require momentum and a sense of time urgency in order to succeed.
- Physician and leadership engagement are critical to QIC success and can be difficult to achieve.
- Without leadership support, motivated clinicians, a business case, policy or regulatory support, sustained QIC impact may not be lasting.
- Are there approaches (QIC or other) that are less costly, that can be self-sustaining and have lasting impact?

A key trade-off associated with use of a QIC is "...the trade-off between going deep versus going broad". Experts agree that the QIC approach is a good mechanism for achieving an in-depth focus on intervention - teaching how to improve. Many proponents of the QIC approach ask: How can learnings from QICs be harvested and spread more rapidly, efficiently and effectively? Can the QIC approach be modified or supplemented to extend QIC learning beyond the collaborative itself? Also, how do you extend QIC activity and lessons learned beyond vanguard practices to improve population health? In response to the depth vs. breadth trade-off, experts at IHI and elsewhere are moving away from condition-specific QIC approaches and instead developing whole-system QIC approaches (such as Transforming Care at the Bedside, Triple Aim, and emerging work on reducing readmissions), and other strategies for population health improvement. Others are exploring lower intensity QIC models ("QIC-lite" approaches) to foster spread of innovation.

More trade-offs to consider involve whether and when to use a QIC approach. One expert advised, "Given that the QIC approach is time consuming and resource intensive, be clear about what you are trying to do and assess whether the QIC approach is the right way to do it." Experts suggest that the QIC approach is recommended when you have a high degree of confidence that the QIC intervention will work and be replicable across a range of participating organizations. If the intervention is not fully demonstrated, then the QIC approach may be risky given the amount of investment required to carry it out and the potential for lack of success. On the other hand, if the intervention is demonstrated and implementation is relatively straightforward, then a lower intensity rollout (such as web-based learning community or "QIC-

lite" virtual collaborative) may be sufficient to accomplish the goal of implementation. Another factor to consider when deciding whether to implement the QIC approach is to assess whether potential QIC participants/staff are likely to have the QI capacity, leadership and other supports needed for a successful QIC effort. Some deficits (like QI training) can be formally addressed using the QIC approach.

Part III. Other QI Approaches

Selection of other QI approaches for CHFWCNY to consider is guided by the same set of criteria used to determine the scope of QIC programs in Part II (above). Other QI strategies presented in this paper are complementary to CHFWCNY's QIC approach and, in some cases, could be combined with a QIC approach for greater impact. While there is a range of QI approaches that could be considered, we focus in on a few examples best aligned with CHFWCNY's grantmaking philosophy and most synergistic with a QI strategy that highlights a QIC approach. Part III presents examples of learning collaboratives, community-based provider education strategies, shared resource models, shared infrastructure models, place-based QI approaches, and models for improving complex care and coordination.

Part IV. Building QI Capacity through Training and Leadership Development

The QIC approach is based on the science of QI. The goal of a QIC is to implement an evidence-based intervention using QI methodologies. QIC teams/participants often do not come to the QIC process with knowledge or experience in QI methods or the collaborative approach. Experts agree that QICs will be less effective in reaching improvement goals unless participants are sufficiently trained and oriented in the QIC process, Model for Improvement, and other QI methods. Any regional effort to expand QI and QIC activity should begin with a targeted approach to training in the practical science of improvement. Innovative approaches to QI training that could be demonstrated in western and central New York include the following:

- Building QI training into the QIC curriculum
- Sponsoring a QIC with QI/QIC skills training as the intervention for improvement, and
- Regional approaches to QI training, such as Improving Quality Improvement in Western New York (WNY).

Leadership responsibilities in health care are changing. Responsibility for quality and safety now rests with the senior leadership team. Governing boards are increasingly viewed as having ultimate responsibility for quality oversight in health care organizations. Key informant interviews highlighted these and other important themes regarding leadership for QI. Experts agree that leadership support and engagement are essential to the success of any QIC or QI program. They stress that QI programs will not reach their full potential if leadership attention and an organizational strategy supportive of QI are lacking. They also note that senior leaders often have limited experience with QI. Experts conclude that CEOs and other senior leaders must approach QI as a strategic priority, and that governing boards must steer this activity and play an active role in strategic execution. Experts agree that the question is not whether but *how* can CEOs, governing boards and other senior leaders execute a strategy for continuous quality improvement. Experts identify three areas of development needed to accomplish this aim: senior executive development; board development; and development of capacity to execute a QI strategy. Best practices in each of these three areas are summarized in Part IV.

Part V. Conclusions and Recommendations

Part V addresses global conclusions and recommendations for CHFWCNY targeting frail elders and children living in communities of poverty. Global conclusions are summarized below (key points are highlighted in bold):

1. **QICs are a valuable tool for targeted, team-focused QI and shared learning.**

2. **CHFWCNY should "stay the course" with the QIC approach.** Experts suggest CHFWCNY remain focused and allow the communities serving frail elders and children in communities of poverty to reap the benefits of the QIC approach. In addition, there is more good QIC work that CHFWCNY can do (see Part V. Recommendations).

3. **The cross-sector approach to QICs involving multi-sector or multi-agency teams (an approach pioneered by CHFWCNY) is emerging** to address cross-sector QI challenges such as care transitions, health and mental health issues of youth in Child Welfare, poverty, and other QI challenges involving multiple systems of care.

4. **QICs are powerful, but they should not be CHFWCNY's only QI approach.**

5. **Strategies for spread and sustainability of QIC gains must also be addressed.** Other QI methods may be more beneficial than the QIC approach for fostering spread and sustainability. Other methods may be more cost effective for some topics.

6. **Other QI approaches complementary to the QIC approach can be used to strengthen QIC impact.** Examples include community-based provider coaching and education strategies, shared resource models, shared infrastructure models, place-based QI approaches, and models for improving complex care and coordination.

7. **QI skills training for successful QI and QIC execution are needed. Develop QI skills training into the QIC context and/or as independent activities** in support of broader QI capacity building for the region**.**

8. **Leadership for QI is another development opportunity.** Three areas of development are needed to support QI transformation and leadership: **senior executive development; board development; and development of capacity to execute a QI strategy. Build these programs into the QIC context and/or as independent activities** through the use of peer learning collaboratives and the CHFWCNY Fellows Action Network.

9. Efforts to address social determinants of health, and comprehensive place-based approaches to QI and population health (like Aligning Forces for Quality in Western New York) are emerging trends among funders.

10. **There can be a role for the QIC approach in population health focused, place-based initiatives, especially to address more challenging care coordination issues** faced by frail elders and children in communities of poverty. This is a leading-edge area of QI and QIC development - CHFWCNY could help demonstrate this approach in Western New York.

11. It will be important to **evaluate CHFWCNY's cross-sector QIC approach** in order to inform future grantmaking and to inform the field.

12. **Western New York in particular would benefit in the near future from a regional strategic planning process to include key stakeholders from the community** involved in Aligning Forces for Quality, the Western New York Community Health

Planning Initiative, the Improving Quality Improvement leadership advisory group, and others who are working on regional QI initiatives over the next three to five years. With coordinated planning and a goal of creating sustainable QI infrastructure and capacity, Western New York is poised (through a powerful and timely alignment of initiatives and resources) to become a model for the nation in QI innovation and health improvement.

Specific QIC recommendations for CHFWCNY to consider for improving the health and health care of frail elders and children in communities of poverty over the next three to five years are asterisked above (Part II, pages 2-3) and discussed in Part V. Recommendations.

PART I. Introduction

Statement of Purpose

Community Health Foundation of Western and Central New York (CHFWCNY) is exploring alternatives for expanding its programs in the area of Quality Improvement (QI), including the use of a Quality Improvement Collaborative approach as an ongoing tool and strategy to achieve improvements in the quality of care and systems serving frail elders and children living in communities of poverty. A Quality Improvement Collaborative (QIC) is a short-term (six to 18 month) learning system that brings together a number of teams from multiple sites across a region or country to seek improvement in a focused topic area.[1] Developed and popularized by the Boston-based Institute for Healthcare Improvement (IHI) and best exemplified by the IHI's Breakthrough Series collaborative program, the QIC method has been adopted on a large scale in the United States and abroad. It is one of the leading approaches to QI in practice worldwide.

To develop a sound basis for understanding and considering options for expanding QI programs and the QIC approach, CHFWCNY commissioned a literature review, key informant interviews and a paper addressing key questions about the QIC approach and other QI best practices. The purpose of this research is to assist Foundation staff, the Foundation Board and advisors to address key questions related to expanding QI programs and the use of a QIC approach as CHFWCNY considers strategies and options for how to approach its work over the next three to five years. This paper summarizes key findings and conclusions, and provides a set of potential recommendations for CHFWCNY's QI/QIC approach.

Statement of Scope

The scope of this research includes an environmental scan and national literature review of QIC and QI best practices that are relevant to CHFWCNY target populations. Review of the published literature was supplemented by web-based research to identify experts, organizations and foundations engaged in QICs and other successful strategies for QI with CHFWCNY target populations. The environmental scan and literature review were guided by key questions provided by CHFWCNY, and by interviews with Foundation staff, key consultants and field experts. Methodologies derived from manufacturing, the science of process improvement, the Deming System of Profound Knowledge, and other disciplines make QI a rich and diverse science. This research focuses primarily on QI methodologies derived from Deming, Associates in Process Improvement, IHI and others focused on healthcare applications of the science of process improvement.

An important component of this research, fifty key informant interviews were conducted with national QIC leaders and other QI experts working with CHFWCNY's target populations. Interviews included leading QI and QIC organizations such as the IHI and the National Initiative for Children's Healthcare Quality, leaders from over a dozen different foundations engaged in cutting-edge work on QI, QIC's and evaluation (including the Robert Wood Johnson Foundation, Commonwealth Fund, John A. Hartford Foundation, California Healthcare Foundation, and others), and organizations working effectively with CHFWCNY's target populations on strategies for QI and QICs. Using a semi-structured interview guide, interview content addressed QIC best practices, challenges, when to use the QIC approach, recommended QIC topics for CHFWCNY to consider, alternative best practices and approaches to QI involving shared learning, and feedback on training and leadership development for advancing QI. Refer to Appendix A for key informant interviewee names and affiliations.

Presented in five parts, this paper synthesizes findings from the literature and from fifty key informant interviews to provide a basis for CHFWCNY to consider for expanding QIC and QI programs to improve the care of frail elders and children living in communities of poverty in western and central New York.

- Part I. Introduction
- Part II. The QIC Approach
- Part III. Other QI Approaches
- Part IV. Building QI Capacity through Training and Leadership Development
- Part V. Conclusions and Recommendations

Selection of programs presented here was guided by CHFWCNY's philosophy (Figure 1) and a set of criteria used to define the scope of QI programs included for analysis. Included for analysis are demonstrated, evidence-based QIC and QI best practices that if implemented could accomplish the following:

- Break down system silos - increase coordination of care and services for CHFWCNY target populations
- Promote peer learning, shared learning
- Expand the QI skills and capacity of systems and staff that serve CHFWCNY target populations
- Foster leadership at the governing board and senior executive level - programs designed to support local leaders in setting the bar and creating an organizational culture for QI in western and central New York.

"Demonstrated" refers to models that have been shown to work effectively. We include models and approaches supported by peer-reviewed evidence from the literature. We also include models that have been shown to work for some period of time (2 years minimum) and have a high likelihood of successful replication.

Figure 1. CHFWCNY Grantmaking Philosophy

CHFWCNY's grantmaking philosophy is multi-faceted and guided by several principles:

- We are person centered and advocate for the most vulnerable in our communities—the frail elderly and children living in communities of poverty.
- We believe change comes about most effectively though meaningful collaborative efforts among organizations.
- We value quality improvement and sustainability of effort. In other words, we focus more on improving the performance of the system on behalf of its beneficiaries and less on creating new programs that might not be sustainable over time.
- We stress outcomes. We want to invest in activities that actually improve the lives of people we're concerned about, and place a high importance on best practice and evidence-based interventions.
- We look at all of our activities as part of a body of work that ties efforts together and advances one idea through another. Our initiatives may look separate at first, but we see them as synergistic and leading toward anticipated outcomes.
- We use all the tools at philanthropy's disposal. Grants are the most obvious, but we also intend to use other valid, less traditional means — convening, publications, independent evaluation, advocacy, public education and more — to advance our goals.

CHFWCNY: Building a Strong Foundation in Quality Improvement, 2004-2009

Over the past four years, CHFWCNY has successfully invested in a range of strategies to improve the quality of life and health status of its primary target populations: frail elders and children living in communities of poverty. CHFWCNY's goal for Children Living in Communities of Poverty is to improve children's overall health status. To help achieve this goal, CHFWCNY invests in:

- Supports that allow children to reach their full physical, emotional and academic potential
- Health care that is timely, accessible and centered on children and families
- Quality of care unparalleled in improving health and reducing health disparities.

Key Foundation initiatives to date in this area include Nuts and Bolts - Improving the Fundamentals of Care for Children in Communities of Poverty. A $2.2 million, three year initiative, Nuts and Bolts is designed to improve outcomes in physical, mental and oral health for children in selected communities of poverty in western and central New York through strategic investments in organizations committed to and capable of increased accountability for outcomes, including school-based health centers, community health centers, social service agencies, faith-based and community agencies working to provide physical, mental and dental health services, counseling, case management support, cultural competency training, and other supports to children living in communities of poverty. Another CHFWCNY program - This Community Cares - focuses on reducing barriers to children's developmental, social-emotional, and behavioral health in Erie and Niagara Counties. The Early Childhood Connections Pilot Program utilizes a common screening tool in six pediatric practices to identify early developmental/behavioral problems and provides access to a coordinator that links the

pediatric provider and the child/family to appropriate services. Most recently, the CHFWCNY Board approved a new QIC initiative, The Right Start: A QI Collaborative to Improve the Social, Emotional and Behavioral Well-being of Children ages 0-5. This QIC and evaluation aims to improve transitions of care and hand-offs as children and their families move between and among providers and systems.

CHFWCNY's goal for Frail Elders is to improve overall quality of life. To achieve this goal, CHFWCNY supports community involvement and engagement, provider education, and system improvement efforts to improve the coordination and delivery of elder care and services. CHFWCNY promotes:

- Coordinated care that respects elders' preferences and meets their healthcare needs in the least restrictive setting with the best possible health results
- Providers who are skilled with geriatric concerns and make possible care for the whole person
- Families and communities supportive of options for care and of informed decision-making by elders, their caregivers and the community.

CHFWCNY has invested in four QICs to improve care for frail elders and the systems serving them:

- Quality Improvement Collaborative to Benefit Frail Elders, 10/05 - 5/07, this collaborative was designed for teams of two organizations to work together on improving palliative care or transitions of care for frail elders.
- Improving Transitions of Care, 4/07 - 9/08, based on Eric Coleman, MD's Care Transitions Program, this collaborative was designed to stimulate change in practice and care delivery systems to improve transitions for frail elders as they move from one care setting to another.
- Falls Prevention Collaborative, 3/09 - 5/10, this collaborative will develop and evaluate common approaches for falls prevention for older adults, caregivers and health professionals.
- Improving Transitions of Care through Effective Family Caregiver Partnerships, 3/09 - 5/10, this collaborative aims to improve provider understanding of the family caregiver's role in care transitions, to improve caregiver ability to manage and coordinate care, and to change practice and systems of care to increase caregiver involvement.

All CHFWCNY QICs involved a competitive Request for Proposals, team selection, a collaborative learning experience lasting 18 months, and a summary conference. All are modeled after the Institute for Healthcare Improvement's (IHI) Breakthrough Series Collaborative. This model and CHFWCNY's QIC results to date are addressed in Part II.

Two additional areas of CHFWCNY QI activity include:

- Improving Quality Improvement in Western New York (WNY) - a recent initiative developed in partnership with the P^2 Collaborative of Western New York, Improving Quality Improvement aims to build regional capacity for QI through training, workshops, collaborative planning and programs aimed at expanding WNY providers' capacity to deliver high quality care.

- The CHFWCNY Leadership Fellows Program - Through coursework and convenings focused on collaborative leadership development, the Leadership Fellows Program aims to develop leaders from western and central New York that will be proficient in five key areas recommended by the Institute of Medicine in its 2003 report, Health Professions Education - a Bridge to Quality: delivering patient-centered care; working as part of interdisciplinary teams; practicing evidence-based medicine; focusing on quality improvement; and using information technology.[2] Since 2004, three classes of Fellows have completed the program. The goal of this Program is to develop a regional health care culture that values learning, collaboration, best practice and continuous quality improvement.

Together these programs build a solid foundation of activity upon which CHFWCNY can build over the next three to five years. This paper aims to support CHFWCNY's QIC development and QI planning process.

Part II. The Quality Improvement Collaborative (QIC) Approach

Largely developed and popularized by the Boston-based Institute for Healthcare Improvement (IHI) and best exemplified by the IHI's Breakthrough Series collaborative program, the QIC method has been adopted on a large scale in the United States and abroad, including by the U.S. Health Resources and Services Administration (HRSA), the Veterans Health Administration, and the United Kingdom's National Health Service. "The QIC is arguably the health care delivery system's most important response to quality and safety gaps; it represents substantial investments of time, effort, and funding."[3] A Breakthrough Series QIC is a short-term (six to eighteen months) learning system that brings together teams from multiple sites across a region or country to seek improvement in a focused topic area.[4] The vision behind the Breakthrough Series is that sound science exists on the basis of which the costs and outcomes of current healthcare practices can be greatly improved, but much of this science is unused in daily work. The Breakthrough Series is designed to help organizations make "breakthrough" improvements to close this gap by creating a structure in which interested organizations can easily learn from each other and from recognized experts in topics where they want to make improvements.[5]

A QIC is an organized, multifaceted approach to QI that involves five features:

- A specified topic for which there is wide variation in performance or gaps between best and current practice;
- Clinical experts and experts in QI provide ideas and support for improvement - they identify, consolidate, clarify, and share scientific knowledge and best practice as well as knowledge in QI;
- A critical mass of interdisciplinary teams from multiple sites is willing to improve and share care;
- A model for improvement focuses on setting clear and measurable targets, collecting data, and testing changes on a small scale to advance reinvention and learning by doing; and
- A collaborative process involving a series of structured activities (typically three, two-day Learning Session meetings, Action Periods to test and implement changes and collect data, conference calls and an active email list) in a given time frame to advance improvement, exchange ideas and share experiences among participating teams.[6]

The Breakthrough Series QIC model has been applied to dozens of clinical topics and areas of process improvement, including: asthma, diabetes, heart failure, depression and other chronic disease care applications (using QIC methods to implement the Chronic Care Model and patient self management support), reducing medication error and adverse drug events, patient safety, falls prevention, cancer care, cardiac surgery, intensive care, end of life care, hospital-acquired infection in the ICU, depression, perinatal care, c-section, HIV/AIDS, reducing waits and delays, access to primary and specialty health care, medical home, improving flow of care, transitions of care, patient-centered care, and other applications. For each of these topics, a prioritized, evidence-based Change Package is developed and disseminated, and the Model for Improvement is applied (in which change is implemented according to a Plan, Do, Study, Act formula) in a QIC process involving structured Learning Sessions and monthly data reporting by participating organizations. IHI has sponsored hundreds of Collaborative projects addressing these and other topics involving thousands of teams from participating health care organizations. IHI Collaboratives range in size from 12 to 160 teams. Each team typically sends three of its members to attend Learning Sessions, with additional members working on improvements in the local organization. IHI Collaborative teams have achieved dramatic results

on a host of topics, including reducing waiting times by 50 percent, reducing worker absenteeism by 25 percent, reducing ICU costs by 25 percent, and reducing hospitalizations for patients with congestive heart failure by 50 percent.

In order to spread QIC breakthroughs, IHI has trained many experts in the Breakthrough Series methodology, thus spawning hundreds of QIC initiatives throughout the world, sponsored by organizations other than IHI. Foundations, health care systems, hospitals and clinics worldwide have adopted this method for improving quality of care and service. Breakthrough Series QICs have been successfully applied in many different ways in a broad range of healthcare settings and organizations. According to Lindenauer, the QIC model has taken hold largely on its face validity - the idea that improvement teams are likely to be more effective when working together rather than in isolation.[7] Experts agree that QICs are particularly good for engaging higher performing provider organizations and for harvesting what can be learned so that broader dissemination through QIC or other shared learning approaches can facilitate spread of best practices.

Evidence of QIC Effectiveness from the Literature

The adaptive potential of the QIC approach (together with the model's emphasis on continuous, small tests of change toward larger improvement aims) results in a rich and diverse tapestry of improvement efforts worldwide. This adaptive potential is also what makes highly rigorous, scientific evaluation of the effectiveness of the QIC approach challenging.

In a 2008 article, Schouten et. al. evaluates the effectiveness of QICs in improving quality of care.[8] In a review and synthesis of studies on QICs published in peer-reviewed journals and online library sources from January 1996 through June 2006, Schouten et. al. reviewed identified 72 relevant articles on QICs. Of these, 60 used an uncontrolled study design (therefore the effectiveness of the QIC could not be proven). The remaining 12 articles described nine studies (two randomized controlled trails and seven before-and-after studies) using a controlled study design to measure the effects of the QIC intervention on processes or outcomes of care. Seven of these studies were based on the IHI Breakthrough Series model. Four were Chronic Care Breakthrough Series Collaboratives that combine the Breakthrough Series with elements of the Chronic Care Model developed by Ed Wagner, MD of the MacColl Institute for Healthcare Innovation/Group Health Center for Health Studies. Two studies were based on the Vermont Oxford Network which is a data driven, voluntary collaboration of more than 400 neonatal ICUs across the country that facilitates a coordinated program of research, education and QI through a database of infants with very low birth weight at member hospitals.

Schouten et. al.'s systematic review of the effectiveness of the QIC approach showed moderate positive results. All but two studies reported an effect in one or more of the selected outcome measures. Refer to Appendix B Table 1 for a summary of Schouten et. al.'s findings. The authors conclude that the evidence underlying QICs is positive but limited, and the effects cannot be predicted with great certainty. The authors further conclude that, since QICs play a key role in current strategies focused on accelerating improvement, but may have modest effects on outcomes, further knowledge of QIC component effectiveness, cost effectiveness, and success drivers is crucial to determining the value and best applications of the QIC approach.

Another systematic review of the literature published in 2006 by Newton et.al. involved a key word search of electronic publication databases, reference lists of published materials, policy documents and the Internet (key words included "breakthrough series", "collaborative

methodology" "quality improvement" and others).[9] No limitations regarding controlled study design were applied to this search. The search identified 43 relevant articles - published studies evaluating the efficacy of the collaborative methodology in driving change. Newton et. al. note that, while most of the evidence comes from observational studies (due to the fact that prospective, randomized, controlled studies of the QIC methodology are few), Newton concludes that "... this method of organizational engagement, promotion of leadership and implementation of the plan-do-study-act cycle confers clinical improvement". According to Newton, key themes emerging from the literature include: (1) The collaborative methodology has a significant potential to reduce treatment gaps and improve outcomes of patients. (2) Leadership is an important characteristic of the collaborative method, and (3) The collaborative methodology facilitates sustainability of the QI process. Adapted from Newton et. al., Appendix B. Table 2 - Conceptual Approach of the Collaborative Methodology - summarizes key literature discussing the conceptual elements of the QIC methodology and the barriers and facilitators to implementation (such as the importance of clinician-led change and leadership support).

The published evidence-base in support of the QIC approach continues to grow. Important research includes a series of articles resulting from a four-year evaluation conducted by RAND Corporation and University of California, Berkeley (funded by Robert Wood Johnson Foundation, RWJF) of the national Chronic Care Breakthrough Series Collaboratives on diabetes, asthma, heart failure and depression.[10] These QICs focused on chronic care model implementation were conducted by IHI in collaboration with Improving Chronic Illness Care (ICIC - a program of the MacColl Institute at the Group Health Center for Health Studies). In addition, evaluation of the national Health Disparities Collaboratives sponsored by the Bureau of Primary Health Care/HRSA targeting community health centers demonstrated positive findings in both outcomes and processes of care for asthma, diabetes, depression, heart disease and other chronic diseases using the QIC approach in the ambulatory care setting.[11] Together these evaluations demonstrate the powerful impact of combining the Chronic Care Model with the Breakthrough Series QIC approach. Pronovost et. al. and Koll et. al. demonstrate the success of the QIC methodology in controlled studies aimed at reducing catheter-related blood stream infections in the ICU setting.[12,13] Gould et. al. summarize the positive impact of the New York City Palliative Care Quality Improvement Collaborative (PC-QuIC) on developing capacity for improving end of life care.[14] Gould reports substantial improvements in most team projects addressing advance care planning, pain management, family support and care coordination, as well as substantial gains in familiarity with continuous quality improvement techniques and in building palliative care programs and networks. Published evidence continues to demonstrate the potential impact of the QIC approach.

Many important QIC contributions and studies will not meet the requirements of a controlled study design that are necessary for scientific proof of impact. However, as illustrated above by Newton and others, many QIC studies (published or described on the World Wide Web) offer compelling insights into the lessons learned, innovation and benefits of the QIC approach.

The QIC Approach - Key Questions

CHFWCNY identified key questions related to expanding the use of a QIC approach for the Foundation Board, staff and advisors to address as CHFWCNY considers strategies and options for how to approach its QIC work over the next three to five years.

Question 1. Are there issues relevant to frail elders that can be successfully impacted through the use of a QIC approach?

Since 2005, CHFWCNY has invested in four QICs (summarized in Part I above) to improve care for frail elders and the systems serving them. Building on the success and learning from challenges of past QIC efforts allows each new CHFWCNY QIC the opportunity to achieve stronger outcomes than previous efforts. These investments have achieved important and significant outcomes benefiting frail elders along with the organizations and people serving them including:

- Increased collaboration through the use of cross-organizational teams that break down silos of care.

- Measurable improvements in processes and outcomes of care. For example, in CHFWCNY's first QIC (QIC to Benefit Frail Elders), the team from St. Joseph's Hospital and Home Care agency increased the number of patients who received discharge instructions from 11% to close to 80%. Every team implementing the Care Transitions Program transition coach model reported very low readmissions for patients who receive this support, including Chautauqua County's team which compares a 5% readmission for study patients to 30% readmission rates for other congestive heart patients.

- Sustainable change and spread of improvements. Many of the participating organizations have been able to spread and sustain QIC improvements. For example, in Utica, the team successfully expanded their protocols developed as part of the QIC work that reduce unnecessary trips to the Emergency Department (ED). They have subsequently expanded this to all of their residential facilities further reducing ED visits.

Review of the literature identified a range of other topics for which the QIC approach has been successfully applied to improve processes and outcomes of care for frail elders. Figure 2 below identifies QIC topics impacting frail elders and the systems that serve them. Some studies included here are not specific to a frail elder population, but address acute care issues and topics of relevance to frail elders as frequent users of inpatient and chronic disease care.

Figure 2. Demonstrated QIC topics/approaches for improving the care of frail elders - Findings from the literature and key sources

QIC Topic	Setting	Key References
Chronic Disease	primary care	ICIC web site[15] (ICIC); Daniel et.al.[16]
Diabetes	primary care	ICIC; Benedetti et al.[17]; Sperl-Hillen et.al.[18];O'Connor et.al.[19];Glasgow et.al.[20]
Asthma	primary care	Schonlau et.al.[21]; ICIC
Depression	primary care	Meredith et.al.[22]; ICIC
Congestive heart failure	primary care	Asch et.al.[23]; Baker et.al.[24]; Newton et.al.[25];Glasgow et.al.[26]; ICIC
Cardiac surgery	hospital	Doran et.al.[27]; Lain et.al.[28]
Acute myocardial infarction	hospital	Montoye et.al.[29]
Stroke	hospital	Stoeckle-Roberts et. al.[30]
Hospital acquired infection	hospital	Association for Professionals in Infection Control web site (site information not specific to the QIC approach)[31]

Blood stream infection	hospital ICU	IHI/Campaign web site[32]; Pronovost et.al.[33], Koll et.al.[34]; Bonello et. al.[35]
MRSA	hospital	IHI/Campaign
Surgical site infection	hospital	IHI/Campaign
Ventilator-associated pneumonia	hospital	IHI/Campaign; Bonello et. al.[36]
Adverse drug events	hospital	Leape et.al.[37]; Weeks et. al.[38]; Farbstein et.al.[39]; Meisel et.al.[40]; Womer et.al.[41]
Cancer care	cancer networks	Kerr et.al.[42]
Pressure ulcer	nursing home, hospital	Baier et. al.[43]; National Nursing Home Improvement Collaborative[44]
Pain management	nursing home, end of life	Baier et. al.[45]; Cleeland et.al.[46] Gould et. al.[47]
Palliative care/end of life	multiple	Lynn et. al.[48,49]; Gould et. al.[50]
Rapid response teams	hospital	IHI/Campaign
Pursuing Perfection (transforming patient-centered care)	hospital/system	IHI web site; RWJF web site[51]
Transforming Care at the Bedside	hospital	IHI web site; RWJF web site
Expecting Success (improving cardiovascular care, reducing disparities)	hospital/system	IHI web site; RWJF web site

In addition to topic areas identified in the literature (Figure 2), there are many noteworthy emerging, ongoing or recent QICs not addressed or demonstrated in the literature that are improving care for frail elders. Examples of noteworthy QICs in the frail elders area include:

- CHFWCNY and the California Healthcare Foundation (CHCF) sponsored successful QICs on transitions of care for frail elders based on the Care Transitions Program. Demonstrated in a randomized control trial, the Care Transitions intervention was implemented using a QIC approach to foster its adoption in western and central New York by CHFWCNY, and in California by CHCF.
- Extending its transitions QIC to focus on support for family caregivers of frail elders, CHFWCNY adopted Next Step in Care - a campaign created by the United Hospital Fund to change healthcare practice by recognizing, training and supporting family caregivers through smooth transitions to/from hospitals, nursing homes and home care.
- United Hospital Fund is also supporting QIC and other dissemination activity based on Next Step in Care. Reaching family caregivers and providers, the campaign aims to educate and support family caregivers through transitions of care.
- I-PRO recently launched a New York statewide QIC for nursing homes and hospitals focused on reducing incidence of pressure ulcer through improved processes of care.

- United Hospital Fund (in collaboration with Greater New York Hospital Association) is running an Infection Prevention QIC (building on its high impact, published QIC work on central line blood stream infection noted above). This new QIC also includes an intervention aimed at reduction of Clostridium Difficile infection. While not unique to frail elders, hospital-acquired infection is a topic of particular relevance to frail elders in the acute and long term care settings.
- Greater New York Hospital Association (in collaboration with I-PRO) is running a New York statewide QIC focused on MRSA prevention (MRSA is a highly resistant hospital-acquired infection that is increasing in incidence nationwide). Seventy New York state hospitals are now participating in a MRSA QIC.
- Other hospital-acquired infection QICs are emerging across the nation, such as the California Hospital-Acquired Infection Prevention Initiative (CHAIPI) - a statewide QIC working to implement evidence-based practices for infection prevention among 51 hospitals.
- Chronic disease QICs (including the California Improvement Network, Health Disparities Collaboratives, New York Health and Hospital Corporation, and others) focus on implementing the Chronic Care Model, emphasizing care management systems redesign, coordination of care and patient engagement. Frail elders often suffer from chronic conditions (frequently, multiple conditions). The Chronic Care Model has been shown to improve processes and outcomes of care for elders and other patient populations with multiple chronic conditions.[52, 53]
- Many clinical topics included in the IHI Campaign are of relevance to frail elder acute care patient populations. Providers (mainly hospitals) across the nation are engaged in IHI Campaign-based QIC activity on congestive heart failure, acute myocardial infarction care, infection prevention, pressure ulcer prevention, and medication reconciliation. The IHI web site is an excellent resource for these and other QIC best practices, including QI intervention "change packages", tools for implementation and peer networking resources.

Key informant interviews also highlight important, timely issues for CHFWCNY to consider for expanding its use of the QIC approach. Figure 3 below lists clinical topics and issues relevant to frail elders that were identified by experts/key informants as good QIC topics for CHFWCNY to consider. Topics are listed in order by strength of endorsement from key informants.

Figure 3. Expert recommended QIC topics for improving the care of frail elders

<u>Topics identified by experts and ranked by strength of endorsement:</u>

- Transitions of care (strongest endorsement)
- Palliative care
- Readmissions (could focus on readmission or incorporate a readmissions emphasis in a broader QIC on transitions)
- Family caregiving
- QI training, capacity building (i.e., a QIC focused on QI training)*
- Leadership development for QI (build into the QIC approach)*
- Medication management/polypharmacy/medication reconciliation
- Chronic disease care
- Medical home: including improved elder case management and referral, coordination of complex care, caregiver engagement, access to care
- Nursing home QI - topics include pressure ulcer prevention, pain management, reducing use of patient restraints

- Nursing home culture change for QI (Wellspring model most frequently cited)
- Advance directives (could be included in a transitions or palliative care QIC, other lower intensity spread mechanisms could be used)
- Dementia
- Depression
- Health literacy (could be combined with other QIC topics such as transitions)
- Hospital acquired infection
- Elder appropriate care in the Emergency Department (emerging topic)

* These two topics were highly recommended for all CHFWCNY QIC activities including frail elders and children living in communities of poverty.

A synthesis of recommendations for CHFWCNY to consider for expanding the use of a QIC approach to improve the quality of care and systems serving frail elders is included in Part V.

Question 2. What issues relevant to children living in communities of poverty can be successfully impacted through the use of a QIC approach?

Review of the literature identified a number of topics for which the QIC approach has been shown to improve processes and outcomes of care for children living in communities of poverty (see Figure 4 below).

Figure 4. Demonstrated QIC topics/approaches for improving the care of children living in communities of poverty - Findings from the literature and key sources

QIC Topic	Setting	Key References
Chronic Disease	primary care	ICIC web site[54] (ICIC); NICHQ web site[55] (NICHQ)
Asthma	primary care	Mangione-Smith et.al.[56]; NICHQ
Diabetes	primary care	ICIC
Attention Deficit Hyper-activity Disorder (ADHD)	primary care	NICHQ (with the North Carolina Center for Child Health Improvement and the American Academy of Pediatrics)
Children with special health care needs		
Medical home	primary care	Medical Home Learning Collaborative[57]; MN Medical Home Learning Collaborative[58]
Improving access, efficiency in practice		NICHQ
Preventive/developmental screening and surveillance		
Prenatal	hospital	Improving Prenatal Care in Vermont[59];
Birth to 5 years	hospital, primary care	Lannon et.al.,[60] Young et.al.[61]; Healthy Development Collaborative[62]; NICHQ (newborn screening QIC)
Office system improvements		Lannon et.al.[63]
Subspecialty care access	hospital	NICHQ

Infant mortality	community	Pierce-Bulger et.al.[64]
Pre-term infant care	neonatal ICU	Horbar et.al.[65]; Horbar et.al.[66]; Rogowski et.al.[67]; Vermont Oxford Network[68]
Blood stream infection	pediatric ICU	National Association of Children's Hospitals and Related Institutions (NACHRI)[69]
Adverse drug events	hospital	Sharek et.al.[70]
Racial Disproportionality	Child Welfare	Clark et. al.[71]

In addition to the topic areas identified in Figure 4, there are many noteworthy, emerging, ongoing or recent QIC programs that are not addressed or demonstrated in the literature that address issues relevant to children in communities of poverty. Examples of noteworthy QICs include:

- The Center for Health Care Strategies' (CHCS) Best Clinical and Administrative Practices (BCAP) QIC series (supported by the Annie E. Casey Foundation, RWJF, and others). Through BCAP, CHCS has run QICs for 134 Medicaid health plans and their provider networks. Successful QIC topics included asthma, developmental screening, serious behavioral health disorders in adolescents, adult chronic illness, birth outcomes, and disparities of care (strategies for examining and eliminating race/ethnic disparities in asthma and diabetes care, immunization rates and prenatal care). A Framework for QI/QICs in Medicaid managed care, QIC implementation and best practice Toolkits (one for each topic CHCS has addressed to date), and other related resources are available at www.chcs.org.

- A new QIC launched by the Center for Health Care Strategies (funded by the Annie E. Casey Foundation) is a cross-agency QIC (working with cross-agency teams) in nine states to improve outcomes for children in the Child Welfare system. In this "community" collaborative, teams from Medicaid health plans, Child Welfare agencies and community organizations are collaborating using a QIC approach to improve physical and behavioral outcomes for children in Child Welfare by improving coordination of care, appropriate medication use (applying behavioral pharmacy management techniques), and implementing medical home for these children. Regular data collection and data sharing across teams (and in many instances, for the first time across systems and agencies that serve these children) are leading to improved patient data systems for this population.

- The National Initiative for Children's Health Care Quality (NICHQ) operates/supports several QICs addressing obesity prevention in primary care (programs in Massachusetts, Maine and Washington state). According to NICHQ, a similar QIC is now emerging in Rochester, New York, through support from the Rochester Foundation. A QIC focused on obesity prevention is also underway in Ohio through a collaboration of Cincinnati Children's Hospital Medical Center, IHI and Cardinal Health. The Community Health Care Association of New York State (CHCANYS) supports a QIC focused on childhood obesity prevention among community health centers in New York City.

- The Community Health Care Association of New York State (CHCANYS) supports a number of QIC activities among community health centers in New York associated with the Bureau of Primary Health Care's Health Disparities Collaborative and other QIC efforts focused on chronic disease management among community health centers.

- QICs involving improvement of developmental screening and surveillance processes are emerging. Examples of best practices include:

    - Using a QIC approach, the Bright Futures Training Intervention Project seeks to test and implement strategies for improving preventive and developmental services for children up to age five. Fifteen pediatric practices from nine states participate in the QIC. Each participating practice team chooses the interventions it wants to test and implement during the nine month QIC from the following: preventive services prompting systems, structured developmental assessments, recall/reminder systems, community linkages, identification of children with special health care needs, and assessment of parents' strengths and needs.

    - Another QIC focused on Bright Futures adolescent preventive screening guideline implementation targets 20 pediatric practices in Vermont. Improvements in preventive screening, physician communication skills, and coordination of referrals are the aims of this QIC. A highly innovative approach, physicians in this QIC receive training in a strength-based approach to risk identification and counseling known as Circle of Courage. An effective approach to communicating with adolescents, Circle of Courage promotes health behaviors through the concepts of belonging, competence, independent decision making and empathy.

    - The Healthy Development Learning Collaborative (a joint project of the Vermont Child Health Improvement Program and The Center for Children's Healthcare Improvement in North Carolina) seeks to improve preventive and developmental care for children age 0-5 by bringing parents, child health professionals and community resources together to ensure a healthy development trajectory and readiness for school for all children. In this QIC, 18 physician practices from Vermont and North Carolina work to implement American Academy of Pediatrics (AAP) screening guidelines for children up to age five, increase parental engagement in care, and develop effective referral mechanisms from the practice to other community professionals and resources.

    - The New York State Department of Health Division of Family Health together with the AAP and other physician organizations sponsored a pilot QIC in Western New York (WNY). This pilot engaged five pediatric practices in a QIC to improve child developmental surveillance and screening practices by implementing a standardized AAP screening tool and process for surveillance. A 15 month learning collaborative based on the NICHQ QIC approach, this program involved physicians, nurse practitioners and parents from participating practices working together to implement early intervention screening and referral processes at each participating practice. Working with the AAP chapter in WNY, the Department of Health is developing a spread strategy and a how-to manual to facilitate broader adoption of the QIC intervention.

- The New York State Department of Health Medicaid Division is working with NICHQ to develop and launch a multi-state QIC aimed at reducing pre-term birth, and morbidity and mortality associated with pregnancy, birth and early childhood. This QIC will focus on a range of QI interventions, including transitions of care, involvement of community partners (WIC programs and social services), and involvement of family partners in care and as coaches supporting other parents and families.

- QICs addressing mental health screening, services, processes and outcomes of care illustrate the benefit of this approach for improving mental health care:

    - Project Impact of the New York City Department of Health and Mental Hygiene sponsored a QIC aimed at improving child mental health services by involving families/caregivers in the mental health care and in determining treatment goals and progress.

    - A New York State Department of Health QIC is working to improve behavioral and mental health screening (identification of anxiety disorders) in partnership with the AAP and NICHQ.

    - Another QIC conducted by NICHQ (in collaboration with the AAP) is working to improve screening, referral and follow-up for children with Attention Deficit Hyperactivity Disorder (ADHD). NICHQ and the AAP developed a toolkit for ADHD screening QI available at www.nichq.org.

- The New York State Department of Health Division of Family Health recently launched and trained eleven coalitions statewide (including one in WNY) using a QIC approach to improve providers' capacity to treat pediatric asthma in the primary care setting. This QIC included QI capacity building, support and training provided by NICHQ. QI capacity building (for Division staff and other QIC participants) included a QI Jumpstart course (similar to the Fundamentals of QI Workshop recently sponsored in WNY by CHFWCNY and the P^2 Collaborative of WNY). The Department of Health also expanded its asthma QIC activities to school-based health centers in New York City.

- The Neonatal Outcomes Improvement Project- a partnership of CMS, NICHQ and the New York State Department of Health - is working to improve care for high risk NICU patients. This QIC aims to reduce preterm delivery rates and improve morbidity and mortality outcomes among high risk newborns.

- The Perinatal Safety Collaborative - a program of United Hospital Fund and the Greater New York Hospital Association - is working with participating hospitals in a QIC to improve the quality of obstetrical and perinatal care processes, and to reduce adverse events and the incidence of perinatal and maternal injuries using a structured, standardized approach to patient care. Perinatal Safety Collaborative tools and resources are available at www.gnyha.org.

- The New Jersey Improving Preventive Services Project (a collaborative of the New Jersey AAP chapter, NJ Department of Health and Senior Services, regional maternal and child health consortia, and NICHQ) engaged nine primary care practices in a QIC to understand how an immunization registry can support QI and office-based changes that

can be made by providers using an immunization registry to provide immunization services.

- NICHQ recently developed and tested a new QIC approach - Improving Cultural Competency in Children's Health Care. NICHQ developed a QIC Change Package - a set of interventions for improving the cultural competency of care that can be incorporated into the NICHQ Care Model for Child Health.

- An innovative QIC that is included as a component of RWJF's Aligning Forces for Quality addresses "Language QI" in hospitals and health centers. This QIC involves a process and systems change approach leading to better identification of patients with limited English-speaking ability, linking patients with interpretation services, developing a care plan for each patient that includes interpretation and support services, and communicating the care plan with staff. [Note: Language QI is not specific to the pediatric population per se - it could be applicable to any non-English-speaking patient population.]

Key informant interviews also highlight important, timely issues for CHFWCNY to consider for expanding its use of the QIC approach. Figure 5 below lists clinical topics and issues relevant to improving care and services for children in communities of poverty that were identified by experts/key informants as good QIC topics for CHFWCNY to consider. Topics are listed in order by strength of endorsement from key informants.

Figure 5. Expert recommended QIC topics for improving the care of children living in communities of poverty

Topics identified by experts and ranked by strength of endorsement

- Medical home
- Developmental and behavioral screening and surveillance
- QI training, capacity building (i.e., a QIC focused on QI training)*
- Leadership development for QI (build into the QIC approach)*
- Obesity
- Ambulatory care process improvement
- Asthma
- Diabetes
- ADHD

* These two topics were highly recommended for all CHFWCNY QIC activities including frail elders and children living in communities of poverty.

A synthesis of recommendations for CHFWCNY to consider for expanding the use of a QIC approach to improve the quality of care and systems serving children living in communities of poverty is included in Part V.

Question 3. What options might we consider for evaluating the long-term impact on frail elders/children living in communities of poverty and the people, organizations and systems that serve them using a QIC approach?

Rigorous, independent evaluation of the QIC approach is needed to help demonstrate and differentiate QIC best practices, approaches and topic areas that can be effectively addressed using this model. One of the best examples of independent QIC evaluation (previously noted) is the RAND/UC Berkeley evaluation of the Chronic Care Breakthrough Series Collaboratives. In a four-year evaluation, RAND conducted in-depth assessments across 51 participating clinic sites in four QICs involving 4,000 patients with diabetes, congestive heart failure, asthma and depression. More than 15 papers were published detailing what was learned (summarized on the RAND web site).[72] Another best practice in evaluation was performed by Marshall Chin, MD (University of Chicago) in an examination of chronic care model applications for diabetes care among 70 community health centers in the Midwest.[73] The Improving Chronic Illness Care web site (www.improvingchroniccare.org) section on QI Evaluation is an excellent resource for QIC evaluation related to QIC interventions based on the Chronic Care Model. Evaluation of Transforming Care at the Bedside (a major QIC initiative of IHI, funded by RWJF) is being performed by a UC Los Angeles team led by Jack Needleman, Ph.D. A team led by Helen Halpin, Ph.D. from UC Berkeley is examining the impact of the California Healthcare-Associated Infection Prevention Initiative. Significant time and resources are required to support comprehensive evaluations like these, however, rigorous studies are needed for definitive evidence that the QIC model works.

Less intensive approaches to evaluation can also shed light on evidence of QIC impact and effective processes. Key informant interviews provided strong feedback on the value and importance of QIC program evaluation (and general agreement on how infrequently independent QIC evaluation is actually performed). Interviewees urged CHFWCNY to include evaluation in its QIC efforts, particularly to shed light on the impact and lessons learned from CHFWCNY's cross-sector QIC approach. Evaluation of this approach was deemed important as it is an important, recent innovation in the field. Suggestions for incorporating evaluation into the QIC approach were as follows:

- Frameworks for evaluation. For well developed QIC topics such the Chronic Care Breakthrough Series Collaboratives, there are toolkits and resources publicly available to help inform measurement of impact and for planning evaluation. For example, the CHCS Best Clinical and Administrative Practices (BCAP) Toolkit series includes planning and how-to resources for all BCAP QICs. Other resources include the Improving Chronic Illness Care web site (which offers best practice content, QIC implementation support, and other resources) and the IHI web site (providing implementation guides, QIC tools, articles, reports and content for QIC programs). Experts noted that, while QIC implementation and measurement resources are publicly available (examples outlined above), there is not a lot of published information on QIC evaluation guidelines. One resource for evaluation planning is the SQUIRE Guidelines (Standards for Quality Improvement Reporting Excellence).[74] These guidelines provide a framework for reporting formal studies designed to assess the nature and effectiveness of interventions to improve the quality and safety of care. The SQUIRE Guidelines section on Methods of Evaluation describes the key components that any article on QI/QIC effectiveness must include in order to be considered for publication in a peer-reviewed journal. These Guidelines can also help inform evaluation planning.

- QIC Data reporting. A key component of the QIC approach is a good measurement strategy to guide the collection of monthly or routinely reported data from participant teams used to monitor change and improvement. A carefully crafted measurement and reporting strategy can also support evaluation. For evaluation purposes, a common set of metrics should be reported at baseline (before the QIC work begins) and routinely

throughout the QIC at specified intervals. Experts advise that reporting requirements be kept to a minimum because too much data collection burden can adversely affect QIC participation. Also, the importance of data reporting may need to be emphasized and reinforced. Data dashboards used to convey QIC impact and to engage organizational leadership can double as a data source for evaluation.

- Qualitative input from participants. Participant evaluations, feedback on QIC operations and process, and identification of lessons learned and challenges are important to evaluating the QIC approach. Ways to gather qualitative information on QICs include online approaches (such as Survey Monkey and Option Finder), foundation grantee progress reports, and pre and post surveys of QIC participants.

- Evaluate every QIC team, every month. Experts highlighted the importance of QIC staff reaching out to participant teams periodically to touch base on progress, examine change in performance, discuss challenges, and give feedback and advice to teams. The more improvement feedback and coaching provided, the stronger the QIC participant engagement; the stronger the engagement, the more likely a QIC will succeed.

- Longer term evaluation. Long term evaluation of QIC impact (after the QIC is done) is rarely performed but greatly needed. Experts suggest extending by up to two years data reporting and qualitative feedback strategies performed during the QIC in order to understand whether QIC interventions are sustained over time by participating organizations, whether impact is sustained, whether the QIC intervention spreads within an organization, and what longer term impacts the QIC has on participating organizations' and the care provided to patients. One approach used by the United Hospital Fund is to assess its Palliative Care QIC using telephone follow-up with successful sites at one year post-QIC to assess the sustainability and impact of the intervention. Experts recommended that CHFWCNY go back and evaluate completed QIC programs at this time, to assess what impact participation in the QIC had on participating organizations. How did the QIC experience change participants' practice, culture, methods? What was their experience?

- External data. Depending on the QIC topic, state survey data or publicly reported measures can be used to monitor the impact of QIC interventions over time in a region. Attribution to the QIC may be difficult to assess, but external data can serve as a proxy or marker of QIC impact.

- Evaluation of spread. Experts suggest that the real test of QIC impact lies in evaluation of spread. Experts commented that, while it's important to evaluate the direct effect of the intervention on the target area of focus, an equally important consideration is: Did the intervention spread to other areas within the organization or to other organizations? Experts question whether the QIC model (designed to engage a finite number of teams) is an effective mechanism for dissemination and spread of best practice, and, what other supplemental strategies could be applied to facilitate spread.

- Use of foundation leverage to promote QIC success, sustainability and evaluation. Several experts commented that foundations like CHFWCNY can take steps to support QIC success and evaluation through request for proposal and/or grant agreement requirements addressing key areas. For example, as a condition of QIC participation

and a proposal requirement, prospective participants might be required to write a business case for sustaining QIC effort and outcomes over time. "In order to receive funding, organizations should demonstrate their commitment to stay with it after the QIC ends." One expert suggested that one way to accomplish this is to target grant funds to support QIC activity other than implementation of the intervention to be sustained over time. Another potential strategy is to tie foundation grant payments to data reporting requirements or other milestones critical to QIC success and evaluation.

In addition to evaluation at the individual QIC level, CHFWCNY program level assessment of the QIC approach could be performed every three to five years as a component of strategic planning and evaluation. Interviews with selected grantees, community stakeholders, national experts, and other foundations engaged in QIC work and evaluation could shed light on the larger, cumulative impact of CHFWCNY's work and the viability of the QIC approach to improving care for CHFWCNY target populations. Opportunities for strengthening QIC programs could also be identified through program level assessment or evaluation.

Question 4. Are there other innovations or new approaches to QIC work that can be implemented to impact our target populations?

Variations on the IHI Breakthrough Series QIC model have been developed since 1995 to address specific needs, topics or populations, to address challenges encountered with the QIC approach, to incorporate new elements or methods into the approach, or to facilitate more rapid spread of innovation. Variations have also emerged to adapt to local needs and circumstances. Experts agree that one of the reasons the QIC approach is powerful is that it's flexible and adaptable.

Chronic Care Breakthrough Series

One well known QIC variation was designed and demonstrated to support adoption of best practices in chronic disease care. This model combines the MacColl Institute's Chronic Care Model with the Breakthrough Series QIC approach. The national Chronic Care Breakthrough Series Collaboratives and Health Disparities Collaboratives (referenced above) illustrate how this combined model can promote rapid improvements in chronic disease care based on the Chronic Care Model. This QIC approach involves structural and process improvements in six areas: patient self management, delivery system redesign, decision support, information support, community linkages, and health system support.[75] Evaluations of this QIC approach (previously noted) have demonstrated its impact. Chronic Care Breakthrough Series participants often see strong results - for example: Christus Schumpert Health System in Shreveport, Louisiana, decreased hospital admissions for patients with congestive heart failure (CHF) by 50 percent and increased to 90 percent the rate of patients self-monitoring their weight, diet, medications, and activities.[76] Effectively applied in frail elder populations, this QIC approach could be implemented in western and central New York (see Part V. Recommendations).

Distributed Learning Networks

Another variation of the QIC approach was developed by IHI to promote "distributed learning networks". The distributed learning networks concept was designed to foster dissemination and spread of evidence-based interventions previously shown to save lives through Breakthrough Series QIC efforts such as the IHI/RWJF Pursuing Perfection initiative. Harvesting what was learned from prior efforts, IHI modified the Breakthrough Series approach for a selected group of evidence-based topics and conditions in order to facilitate more rapid dissemination and

adoption of high impact recommendations. These recommendations (together with practical information on how to implement them) are featured in the IHI 100,000 Lives Campaign (2004) and Five Million Lives Campaign (2006).

The IHI Campaigns aimed at furthering adoption of best practices among hospitals worldwide in reducing infection rates, deploying rapid response teams, improving care of congestive heart failure and acute myocardial infarction, preventing adverse drug events through medication reconciliation, preventing ventilator associated pneumonia, surgical complications, pressure ulcer, and Getting Boards on Board with the Campaign. The IHI Campaign helped popularize the QIC approach by providing QIC tools and infrastructure, while at the same time allowing for local variation in leadership, organization and implementation through distributed learning networks of QICs supported by "nodes". Campaign nodes are organizations functioning as local Campaign extenders, including Medicare QIOs, hospital associations, and others. Facilitated and supported by a distributed learning network of local nodes throughout the country, over 4,000 U.S. hospitals joined the IHI Campaign. Measuring the impact of the Campaign in number of lives saved, IHI reported a mid-Campaign milestone of over 128,000 lives saved.[77]

The IHI Campaign introduced two important innovations to the QIC approach. The first innovation involved widespread proliferation of nodes. Through fostering local nodes and providing technical support, IHI was able to rapidly spread best practices through shared learning in a Campaign format. Extending IHI's reach at the local level, nodes typically ran QICs, providing convening support and assistance to hospitals participating in the IHI Campaign. The second innovation was the emergence of "QIC-lite" learning collaboratives. Learning collaboratives involve lower intensity applications of the QIC model. Two main forms have emerged:

- QI Campaigns. Designed to foster rapid adoption and spread of QI innovation, QI campaigns can be used when a lower level of "breakthrough" support is required. Examples of frail elder-focused learning collaboratives include CHCF's support of 17 California multi-stakeholder community coalitions working to promote the adoption and use of advance directives, and the Commonwealth Fund supported Advancing Excellence in America's Nursing Homes. In pediatrics, this strategy has been used to foster adoption of guideline-based developmental screening and surveillance strategies and tools.

- QIC-Lite approaches. Less structured, less intensive approaches to the Breakthrough Series model involve shorter QIC duration (less than 18 months), fewer meetings, (potentially) fewer data reporting requirements, and virtual collaborative methods such as use of internet communities and resources. For example, RWJF's Transforming Care at the Bedside initiative moved from an intensive, traditional QIC staffed by IHI with a community of ten participating hospitals, to a "QIC-lite" initiative staffed by the Association of Nurse Executives (with expert support from IHI) in a collaborative involving 68 hospitals nationwide. One expert noted, "QIC-lite can facilitate taking change to scale once initial QIC proof of concept has been demonstrated." Supporting this adaptation is research showing that virtual collaboratives (collaboratives taking place by Internet and telephone using web-based collaboration software and audio-conferencing in lieu of face-to-face meetings and at substantially lower cost) can be as effective as traditional Breakthrough Series approaches for improving access and efficiency in primary care.[78]

Less resource intensive than traditional QIC approaches, QIC-lite variations appear promising in their ability to effectively and efficiently foster QI learning and spread of innovation (once initial QIC proof of concept has been demonstrated).

Expert Coaching

Increasingly, QICs rely on support organizations ("nodes" and technical assistance (TA) providers) to help strengthen providers' ability to successfully implement change through a QIC. Expert coaching (on-site or by telephone, as a form of QI support and technical assistance) is increasingly used to assist providers in applying interventions and changing systems of practice. CHFWCNY's transitions of care QIC applied both of these approaches. I-PRO (New York State's Medicare Quality Improvement Organization) served as a local extender. In this role, I-PRO helped QIC participants implement the Care Transitions intervention through site visits and coaching. Expert training was also provided by Eric Coleman, MD, creator of the Care Transitions Program. Another example of the coaching innovation is Greater New York Hospital Association's expert-on-call program. "Pods" or groups of hospitals working together in a QIC are assigned an expert on call - a go-to resource for QIC implementation, troubleshooting and technical assistance. Experts agree that the hands-on role of TA providers and coaches can help facilitate learning and systems redesign for providers working on improvement. Expert TA and coaching strategies are an important and growing trend among QI programs aimed at speeding up adoption and spread of innovation and improvement.

Care Model for Child Health

An QIC innovation developed by the National Institute for Children's Healthcare Quality (NICHQ) supplements Breakthrough Series basics with important components for running a successful QIC in a pediatric ambulatory care setting. Based on NICHQ's Care Model for Child Health, NICHQ's QIC approach includes (in contrast to the Breakthrough Series approach):

- Greater involvement of family and community agencies (including a QIC steering role for family and community leaders);
- Greater emphasis on building a local infrastructure (such as a local AAP chapter) trained to support QIC activities among participating providers and to extend and carry on improvement activity after the QIC is done.
- Greater emphasis on participant training, assistance and coaching in the QIC intervention and QI methods; and
- Greater focus on QI intervention spread and sustainability early on.

NICHQ describes this approach and the Care Model for Child Health, *Spread of the Medical Home Concept*, a report summarizing the methods and impact of a multi-state QIC aimed at improving the quality of health services received by children with special health care needs through implementation and diffusion of the Medical Home model. [79]

QICs for QI Capacity Building

Another recent innovation is use of the QIC approach explicitly for QI training (applied to a common QIC topic or to a range of team topics). Pioneered by the Minnesota Department of Public Health (DPH), the Minnesota Public Health Collaborative for Quality Improvement illustrates this approach. The goal of this 18 month QIC was to apply Model for Improvement methodology to improve DPH sponsored QI projects statewide. The QIC provided eight participating DPH and provider teams with tools to recognize opportunities for improvement, identify changes, test changes, analyze what was learned, and incorporate lessons learned into DPH programs and activities at the county health department level. A second phase of QIC

activity for the Minnesota DPH is now focused on county-level coalition development and consumer engagement strategies. This QIC will pave the way for a third QIC (beginning in 2009) in which coalition-driven public health interventions will address obesity and tobacco prevention at the county level. Minnesota's approach to building state and local DPH QI capacity makes excellent use of the QIC model to develop local experts and trainers.

Lean Methods

Others have applied the QIC approach but, instead of basing improvement activity on the Model for Improvement, these QICs have promoted change through lean Six Sigma methodologies or other theoretical bases for QI. For example, the Pittsburgh Regional Health Initiative (PHRI) ran a successful QIC involving 40 hospitals in the region working to reduce blood stream infection in the ICU. These hospitals improved patient outcomes and reduced blood stream infection rates by 68 percent using PHRI's Perfecting Patient Care (PPC) curriculum - quality engineering principles adapted for healthcare from the Toyota Production System. QIC participants completed training workshops through PPC University. A "Pittsburgh export", the PPC curriculum brings engineering disciplines to bear on clinical practice. A potential local resource for lean curriculum development is the Center for Industrial Effectiveness at the University of Buffalo.

Translating Evidence into Practice

A QIC approach developed by Peter Pronovost, MD and others at the Johns Hopkins Quality and Safety Research Group aims to translate evidence into practice. An integrated approach to improving care reliability, Pronovost's model achieved substantial and sustained reductions in bloodstream infections associated with central lines.[80] "Resource intensive and intended for large scale collaboratives"... this approach has five key components: a focus on systems (how we organize work) rather than care of individual patients; engagement of local interdisciplinary teams to assume ownership of the project; creation of centralized support for the technical work (provided by the Johns Hopkins Quality and Safety Research Group); local adaptation of the intervention; and creating a collaborative culture within the local unit and larger system.[81] Pronovost et. al. emphasize: (1) culture change through a comprehensive patient safety program including methods to improve teamwork, communication and culture for safety; and (2) a reliability intervention involving "six E's": engage, educate, execute, evaluate (using a single or very few metrics), endure (sustain) and extend (spread) the gains. According to Pronovost, this model is generalizable and can be applied to inpatient and outpatient settings. Current applications include a safe surgery model in Michigan, pilot programs in an emergency room setting, and ambulatory diabetes care.

Cross-Sector Approaches

An innovative QIC approach pioneered by CHFWCNY, cross-sector QICs are particularly suited to address QI challenges that are influenced by many providers/agencies - none of which are ultimately responsible or accountable for issue resolution. Examples include care transitions, care coordination, and referral processes involving a range of providers (primary care, specialty care, behavioral health, social services and others) in a community. Another powerful application of this approach is the Center for Health Care Strategies' collaborative working to improve health and mental health outcomes for at-risk youth in Child Welfare system. This QIC approach has been shown by CHFWCNY and others to break down system silos that present barriers to seamless, comprehensive, patient-centered care. This approach can help foster understanding across systems and agencies, and can forge new ground, serving as a practical bridge to collaboration and data sharing. According to one expert, "The cross-sector QIC approach can best be applied when there is the potential for mutual benefit and shared responsibility across sectors/agencies serving at-risk populations." It is not surprising that this

approach has been beneficial for CHFWCNY in its efforts to improve the health and health care of frail elders and children living in communities of poverty.

Whole Systems Initiatives - Pursuing Perfection and Triple Aim

IHI has led the field in developing whole-systems approaches to QI that can be implemented using a QIC approach as a tool for shared learning. Whole systems initiatives are designed to achieve profound organization-wide breakthroughs in QI and QI systems, and to foster improved population health (in an appropriately defined population for each participant organization). RWJF's major investment in the Pursuing Perfection initiative sought to enable hospital and physician organizations to achieve dramatic improvements in patient outcomes through pursuing perfection in all of their major processes of care. A major purpose of the initiative was to raise the bar for performance of health care providers. IHI served as RWJF's National Program Office for Pursuing Perfection. IHI's most recent effort in this area, Triple Aim, helps systems achieve three aims: Improving the health of a defined population; enhancing the patient care experience (including quality, access and reliability), and reduce, or at least control, the per capita cost of care. In 2007, IHI launched initiatives to translate the Triple Aim concept into specific actions for change. The result was a model and a set of design concepts to fulfill the Triple Aim in practice, including a focus on individuals and families; redesign of primary care services and structures; population health management; a cost-control platform; and system integration and execution. A first group of Triple Aim initiative participants has paved the way for future applications of this framework and its component parts.

Question 5. What has been learned by other foundations or organizations that use a QIC approach that will inform our thinking?

Importance of Team Building and Peer Learning

The QIC approach has proven effective in improving care for a range of conditions. The model has a high degree of appeal and face validity (based on the idea that improvement teams are likely to be more effective when working together rather than in isolation). Intense in focus and depth, QICs offer participants "a safe place to focus". One of the most powerful aspects of the QIC approach is that peer-to-peer learning accelerates adoption. Most experts and most collaboratives describe utilizing peer experience as a major tool to promote rapid deployment of the QIC intervention and improvement. One expert noted, " Peer to peer learning is how you take change and improvement to scale using a collaborative model." Another commented, "QIC or not, what's most valuable to improvement is team building and collaborative learning."

Strategies for success when using a QIC approach

Key components of the QIC model must be in place in order for a QIC to reach its goals. When these components are not in place, they can represent barriers to participants' success (which in turn limits the success of the QIC). Noteworthy examples of barriers include: insufficient or absent leadership support, lack of QI expertise, teamwork shortcomings/challenges, and organizational cultures not conducive to sustain QI effort. Ovretveit et. al. in *Quality collaboratives: lessons from research* identifies five key factors upon which QIC participants' success frequently depends: a team's ability to work as a team; their ability to learn and apply QI methods; the strategic importance of their work to their home organization; the culture of their home organization (does it support the work? does it value QI?); and the type and degree of support from senior management.[82] According to Ovretveit, a QIC can be a temporary and powerful learning organization which motivates; provides knowledge, skills and support; and develops its own culture. This can equip and empower teams to address quality problems. Ovretveit concludes, however, if the home organization has the wrong culture and there is little

senior leadership support, the achievements of a team will be limited. Strategies to foster strategic execution of QI by organizational leaders are discussed in Part IV, Building QI Capacity through Training and Leadership Development.

Experts recommended guidelines to use before, during and after a QIC to increase the chances of a successful QIC. [83]

1. QIC preparation
   - Choose the right subject. A good QIC topic will be supported by evidence of effective interventions and of gaps between best and current practice; will have real examples of how improvements have been made in practice; is strategically important to organizations; and participants care about the topic - they can exchange ideas and suggestions about the topic, stimulate ideas and motivation to change.
   - Participants must assess their organization's capacity to benefit from the collaborative and define objectives for taking part in the QIC.
   - Define roles and make clear what is expected.
   - Ensure team building and preparation by teams (do the necessary pre-work).

2. QIC operations
   - Emphasize mutual learning rather than teaching.
   - Pay attention to motivating and empowering teams.
   - Ensure teams have measureable and achievable targets.
   - Equip and support teams to deal with data and change challenges.

3. Post-collaborative transition:
   - Plan for sustaining improvements, involving managers/leadership in this work. One strategy is for a community of practice network to continue after the QIC ends.
   - Plan for spread. Foster organizational commitment and a plan to spread what the team has learned. This may involve the QIC team training others within their organization.

Experts note that creating interdisciplinary QIC teams - involving front line staff, non-clinical staff, patients and other newcomers to the QIC approach - can help foster new thinking and build organizational QI culture and capacity by empowering staff typically not engaged in QI to become change agents and proponents of QI . Expanding on this idea, Mills et. al. found that high-performing QIC teams perceived their work to be part of their organization's key strategic goals, had more front-line staff involvement and support, had strong team leadership, and teams that stayed together were more successful in effecting change.[84] The IHI website offers useful tools for QIC sponsors to help prepare, organize and assess QIC teams, including IHI's Assessment Scale for Collaboratives.[85]

Experts have observed that QIC participants often lack QI skills and require training to know how to improve, how to study and implement change. One expert noted, "Collaboratives should build QI capacity, but without QI training, they don't." Strategies for QI training can be built into a QIC curriculum. Coaching and Improvement Advisor support are also beneficial. Part IV addresses this and other strategies for QI training and capacity building.

Experts agree that without senior leadership engagement, QICs will not reach potential. QICs must develop structured opportunities and requirements for senior manager involvement and review of QIC milestones and challenges. Senior manager attention will elevate the importance of QIC efforts and support alignment of QIC goals with the strategic goals of the organization.

Senior leadership support will increase the likelihood of sustainability of QIC gains. Board level engagement and support are equally important determinants of QIC success and strategic emphasis on QI.

Observations on Spread and Sustainability

While many experts and foundations value the QIC approach for getting improvement results and fostering community, experts also recognize that other collaborative strategies may accelerate spread and sustain QIC gains. One sustainability strategy is to foster communities of practice (shared learning opportunities) among QIC participants after a QIC ends. Other innovations (previously discussed) including QIC-lite, coaching and technical assistance strategies (used in combination with the QIC approach or independently) are used to jumpstart adoption and accelerate spread. Hybrid approaches - QIC-lite plus coaching - are also emerging. In addition, strategies not focused on the QIC as a vehicle for change are also emerging, including shared infrastructure for care management and coordination, and place-based approaches for improved population health. Alternative strategies are addressed in Part III, Other QI Strategies.)

Sustainability and spread of QIC gains are among the biggest challenges with the QIC approach. A qualitative research study conducted by the Primary Care Development Corporation (PCDC) identified what contributes to the sustainability and spread of improvements following a QIC.[86] PCDC identifies the following set of principles for organizations to apply to promote sustainability and spread of QIC gains:

- Provide direct and visible leadership for QIC activities
- Deploy teams to make changes
- Test changes with the PDSA process
- Use a QI framework for change (PCDC identifies the Chronic Care Model; can also apply the Model for Improvement or other frameworks)
- Coach for change
- Make the new way unavoidable
- Allocate actual resources
- Monitor what you want to sustain and spread
- Create a culture of improvement

Experts also identify the following criteria as important determinants of QIC success:

- QICs need clinical champions and leadership support for lasting impact.
- The QIC leader must be strong, charismatic; avoid change in QIC leadership.
- Coaching calls and site visits will reinforce QIC activities and promote QIC efforts within participating organizations.
- Keep QIC participant engagement level high. Be responsive to questions and feedback.
- Create opportunities for team building and for creating a learning community. "QIC or not, find a way to build these components into QI programs."

QIC sponsors must consider how these criteria can be achieved (or effectively fostered) using the QIC approach. For example, if leadership support is lacking, then one strategy is to engage leadership in the QIC process to get their attention and to increase the value of the QIC effort (and of QI in general) as an organizational priority.

One final strategy to consider for reinforcing QIC effectiveness involves use of foundation leverage to motivate change. Financial and contract incentives can be used by foundations to motivate QIC participants (grantees) to improve. One expert observed, "Grant payments earned through improvement will be more effective in promoting change than scheduled payment regardless of achievement." There may be other grant management mechanisms for CHFWCNY to explore that would reinforce QIC success and sustainability.

Social Determinants of Health

Several experts commented on the use of a QIC approach at the community level to address cross-sector QI challenges (CHFWCNY's approach). One expert observed, "QICs addressing frail elders and children living in communities of poverty need community involvement - including senior centers, Area Agency on Aging, medical providers and social services in a community-wide participation." Other experts commented, "The challenge is, how do you effectively apply and spread the QIC approach to a community setting?" This is an area where CHFWCNY is pioneering the way for QIC field development. One expert concluded: "It is not clear that a QIC approach will work here, but the QIC approach has packaging for use and a track record of success. It is likely the best approach to use in a cross-community QI effort."

Other experts noted that more complex collaborative structures may be needed to address health and social determinants of change that impact the lives of frail elders and children in communities of poverty. For example, to address high risk populations with complex socioeconomic, health and behavioral issues (such as youth in Child Welfare), the Annie E. Casey Foundation (AECF) applies a social determinants framework and a community organizing improvement approach (rather than a QIC approach). AECF collaboratives involve multiple agencies that touch the lives of at-risk children, including providers, health plans, county Child Welfare, Juvenile Justice, Medicaid and community support agencies in collaborative efforts to better plan and coordinate strategies for improving the lives and health outcomes for high-risk youth. One AECF collaborative operated by the Center for Health Care Strategies in nine states aims to address health and mental health needs of youth in Child Welfare. In this collaborative, providers, health plans and county Child Welfare agencies work together to implement improved systems for mental health assessment (early assessment, improved referral and case management systems), medication management (monitoring under and over-use of medication), and medical home. This collaborative combines a community involvement approach together with a systems change approach to address health and the social determinants of health improvement.

Question 6. Is there a point when the QIC approach no longer makes a significant impact? If so, what indicators should we look for?

QICs must have a set of aims and a measurement strategy that together serve as a roadmap for monitoring change and evaluating results. Without aims and a measurement strategy, it would not be possible to know whether a QIC has had impact. Deciding whether/when a QIC approach is no longer making a significant impact will depend on the QIC topic and measures used. Experts identified the following signals that a QIC may no longer be having an impact, signaling that it might be time to add a new approach (such as training or engaging senior leadership to push and motivate change), or that it might be time to retire the QIC approach for a particular topic. Examples of signals to watch for include the following:

- Flat-lining of results
- QIC meeting attendance falls off; turnover increases

- Lack of participation, engagement, enthusiasm on calls and in meetings
- Lack of QI skills stalls progress (QI training can be used to jumpstart efforts)
- Senior leadership attention absent or diminished
- Decline in number of proposals received in response to QIC requests for proposals
- Fewer repeat returns (grantees moving off a topic, exiting a QIC program)
- Post-QIC follow-up survey of participants indicates change in priorities or interest level
- QIC interventions spread rapidly to other organizations *without* the use of a QIC approach.

Important questions for QIC sponsors to ask to help assess whether the QIC approach is having an impact include: Can QIC improvements grow or be sustained? Can QIC aims go deeper - i.e., can organizations do more within a topic? Can QIC aims go broader (can the intervention be spread)? If progress appears stalled, has senior leadership been engaged to push and motivate for QIC success?

Expert viewpoints differ on when to quit using the QIC approach as a strategy for improvement. Some experts believe that due to the high cost and intensity of the QIC approach, QICs should be used for initial "R&D and demonstration purposes" only. "Once the change has been demonstrated, organizations can move to other strategies (such as QI campaign and other spread strategies) methods that require less intensity that make use of a change package and implementation lessons learned. Experts acknowledge, however, that the success of these alternative strategies is dependent upon organizational improvement capability and leadership support. "These two supports must be in place in order for an organization to successfully implement using the lower intensity roadmap approach." In other words, if the QI skills, culture and leadership are in place to support spread, then QIC level of intensity may not be needed to spread and achieve breakthroughs.

Other experts recognize the positive, cumulative effect of QICs on an organization. According to one expert, the QIC approach is important for training and orienting participants in continuous QI methodology. "As an organization gets better at the QIC approach and process, QICs become more useful and efficient over time." According to this view, subsequent QICs are just as important as the first QIC in an organization - they are needed to support spread of QI interventions and CQI orientation.

Key informant interviewees stressed the importance of funders and participants staying with a topic long enough to achieve meaningful improvement. They also stressed the value of focusing on a few topics - going deeper (pursuing perfection) and broader (pursuing spread within/ across organizations) in a critical few areas.

Question 7. What trade-offs should be considered in thinking about using a QIC approach as an ongoing significant tool or strategy for achieving CHFWCNY's goals and aspirations?

Expert interviews shed light on trade-offs to consider in thinking about using a QIC approach as a significant tool or strategy for achieving CHFWCNY's goals. When asked about trade-offs of using the QIC approach, interviewees (including leading architects of the IHI Breakthrough Series, content experts and foundations) provided views about the "positives" of the QIC approach for achieving CHFWCNY improvement goals, and some advice on execution.

QIC Positives

- QICs are good mechanisms for engaging people.
- QICs function best when the topic is focused, proven, evidence-based, and measureable, with a change package that is simple and clear.
- QICs offer a relatively efficient use of experts to facilitate and guide multiple provider teams to internalize best practice and translate the opportunity to their own setting.
- QICs are good for innovation - for the research and development test of an improvement strategy - they provide focus and depth.
- QICs promote systems thinking skills. Systems thinking is often a new skill for clinicians - a new lens through which they can view their practice.
- QICs will effectively reach "vanguard practices - innovators that self-select to participate in a QIC".
- Coaching calls and site visits will reinforce QIC activities and promote QIC efforts within participating organizations.
- "The QIC approach is powerful, especially when leadership actively supports it."
- The QIC approach is effective at impacting the health of targeted populations. It may be a less effective vehicle (by itself) for impacting population health.

Interviewees also provided views about trade-offs to consider in thinking about the use of a QIC approach as an ongoing strategy or tool for achieving CHFWCNY's goals:

QIC Trade-offs and Key Considerations

- "It is hard to create rapid or lasting change using the QIC approach one cycle at a time."
- The QIC approach requires investment of time and resources in order to be successful. Comments included: "QICs are relatively expensive and labor intensive vehicles for change." "You have to keep at it - a deeper and longer term investment of time and attention to the topic is needed for lasting change."
- QIC participants often need QI training, technical assistance and coaching in order to execute change and QIC participation effectively.
- Successful QICs require discipline around the QI process. "A strong Improvement Advisor is needed to ride teams - providing support and guidance."
- QIC data collection requirements are considered substantial and can be hard to enforce. One expert commented, "Keep data requirements simple and automate where possible - but don't give on collection because participant data is how improvement gets measured."
- QICs require momentum and a sense of time urgency in order to succeed.
- Staff turnover and/or leadership changes can limit QIC effectiveness.
- Physician and leadership engagement are critical to QIC success and can be difficult to achieve.
- QIC's are a means to an end - the QIC approach is not an end in itself.
- Without leadership support, motivated clinicians, a business case, policy or regulatory support, sustained QIC impact may not be lasting.
- Are there approaches (QIC or other) that are less costly, that can be self-sustaining over time, and have lasting impact? This is the holy grail.
- "QIC-lite approaches may foster spread, but they are risky in that they may not result in deep learning." Deep learning (as shown in IHI's Pursuing Perfection QIC) is what's needed for lasting and continuous improvement.

Depth versus Breadth

Experts identified a key trade-off associated with use of a QIC is "...the trade-off between going deep versus going broad". Experts agree that the QIC approach is a good mechanism for achieving an in-depth focus on intervention - teaching how to improve. One expert commented that QICs can promote deep learning, and deep learning leads to lasting change - change that can influence organizational culture. Another expert summarized: QICs are powerful but slow, only reaching a few." Many proponents of the QIC approach are asking: How can learnings from QICs be harvested and disseminated more rapidly, efficiently and effectively? Can the QIC approach be modified or supplemented to extend QIC learning beyond the collaborative itself? For example, how might QIC participants extend/apply what they learn in a diabetes QIC to improve systems for managing all chronic disease in their practice? Also, how do you extend QIC activity and lessons learned beyond vanguard practices to improve population health?

In response to the depth vs. breadth trade-off associated with the QIC approach, experts at IHI and elsewhere are moving away from condition-specific QIC approaches and instead developing whole-system QIC approaches such as Transforming Care at the Bedside. Triple Aim, and emerging work on reducing readmissions. Others are exploring QIC-lite approaches to foster spread. With QIC-lite approaches, however, experts caution that "information alone may not be enough to foster change". This will vary by topic, but in order for QIC-lite approaches to succeed, experts caution that some emphasis on practice testing (implementing PDSA), some measurement follow-up, some teamwork and momentum created through a learning community (could be a campaign or a virtual learning community), and some coaching will most likely be necessary for interventions to "stick" and for improvements to be made.

Another response to the depth vs. breadth trade-off is regional coalitions. Regional coalitions such as those now emerging in 14 U.S. communities (including WNY) supported by RWJF's Aligning Forces for Quality (AF4Q) have the goal of fostering population health improvement through sustainable mechanisms for change. Experts suggest that QICs can be important tools for use within broader approaches to improvement like the regional coalition. For example, AF4Q includes participation in three QICs - Transforming Care at the Bedside, Expecting Success, and Language QI - as a strategy for improving acute and ambulatory care quality and equality in 14 targeted regions.

<u>When to use a QIC Approach</u>

Another set of trade-offs to consider involves whether and when to use a QIC approach. One expert advised, "Given that the QIC approach is time consuming and resource intensive, be clear about what you are trying to do and assess whether the QIC approach is the right way to do it." IHI suggests that the QIC approach is recommended when you have a high degree of confidence that the QIC intervention will work and be replicable across a range of participating organizations. If the intervention is not fully demonstrated, then the QIC approach may be risky given the amount of investment required to carry it out and the potential for lack of success. On the other hand, if the intervention is demonstrated and implementation is relatively straightforward, then a lower intensity rollout (such as web-based learning community or a virtual collaborative) may be sufficient to accomplish the goal of implementation. Another factor to consider when deciding whether to implement the QIC approach is to assess whether potential QIC participants/staff are likely to have the QI capacity, leadership and other supports needed for a successful QIC effort. Some deficits (like QI training) can be formally addressed using the QIC approach. One expert observed, "QICs can help staff work better, smarter over time." - making it worth the effort and investment.

Another trade-off to consider is the potential of the QIC approach to achieve lasting change. This will vary by QIC topic and with environmental factors, but the idea is to assess the

likelihood of whether improvement based on clinician behavior change (the basis of the QIC approach) can be achieved and sustained independent of policy, regulatory or financial incentives. Some foundations have decided that the QIC approach by itself - without also addressing some of the larger policy or reimbursement challenges - is not likely to produce lasting change. Others believe that the QIC is a good and powerful instrument for change so long as there is a strong likelihood that an improvement focused on clinician behavior change (leading to delivery system change) can be sustained. One interviewee advised: "Keep the QIC team focused on day-to-day practice improvement. Engage the QIC sponsors and participating organizational leaders to think about sustainability from day one of the QIC effort."

Several experts commented on the use of a QIC at the community level involving a cross-sector QI approach (CHFWCNY's approach). The trade-off inherent in this approach is its relative newness. Experts encouraged CHFWCNY to evaluate this approach in order to inform the field of the impact and viability of this QIC approach - also when and when not to use it. One expert noted that there may be systems barriers (regulatory, reimbursement related, or other) that might limit the success or impact of a cross-sector approach for some topics. For CHFWCNY, this suggests that careful topic selection may be particularly important with this approach so that potential real-world barriers to innovation are fully grasped. If these barriers appear insurmountable in a regional effort for a given QIC topic, it may be advisable to forgo using a cross-sector QIC approach for that topic. One expert summarized: "QICs are the best developed, accepted, feasible approach to making QI change (cross-sector and otherwise) - they are a good approach. At the community level, the challenge is, how do you effectively apply and spread the QIC approach to a community setting?" He concluded: It is not clear that a QIC approach will work here, but the QIC approach has packaging for use and a track record of success. It is likely the best approach to use in a cross-community QI effort." Others noted that different collaborative structures may be needed to address QI challenges associated with health plus complex social determinants that impact the lives of frail elders and children in communities of poverty.

Question 8. What national, state and local trends, issues and opportunities might influence the use of a QIC approach as an ongoing tool or strategy?

CHFWCNY will want to consider national, state and local trends, issues and opportunities that might influence the use of a QIC approach as an ongoing tool or strategy for improving the health and healthcare of frail elders and children in communities of poverty.

National trends, issues and opportunities - setting the stage

National trends and issues of relevance to the QIC approach and to CHFWCNY's work take several forms. National calls for action and prioritization strategies from the Institute of Medicine (IOM), National Quality Forum (NQF), Centers for Medicare and Medicaid Services (CMS), and others set the stage for action, leadership and funding opportunities nationwide to address priority areas. For example, the IOM's 2001 report, *Crossing the Quality Chasm*, called for a U.S. health care delivery system that is safe, effective, patient-centered, efficient and equitable.[87] *Crossing the Quality Chasm* set an agenda and a call for action, spurring important national efforts and field emphasis focused on reducing harm, improving patient-centered care, promoting evidence-based medicine, improving quality, eliminating healthcare disparities, and removing waste from the system.

Building on the IOM themes, the NQF's 2008 National Priorities Partnership sets priorities and goals to achieve healthcare reform in the next five years. NQF priorities include: patient and family engagement, population health, safety, care coordination, palliative care, and overuse. Lastly, the Commonwealth Commission on a High Performing Health System released in February 2009 its Strategic Vision involving five essential strategies for comprehensive reform by 2020.[88] Important priorities highlighted in this report (and of relevance to CHFWCNY's goals and population targets) include fostering applications of medical home (a patient-centered personal source of care that meets standards of accessibility, quality and coordination) and population health strategies aimed at lowering rates of preventable illness and improving health outcomes for chronic conditions. National prioritization efforts such as these from leading agencies provide focus for improvement. They create momentum and opportunities for technical support and funding.

Market and regulatory mechanisms reinforce national goals, trends and priorities. The nation's largest health care purchaser, CMS, uses regulatory and purchaser muscle to reinforce key priorities. For example, in 2008 CMS introduced lower reimbursement levels for patient safety Never Events and adverse outcomes such as hospital-acquired infections. This year, CMS is expected to introduce reimbursement changes aimed at reducing hospital readmissions. Another trend setter, the National Committee for Quality Assurance (NCQA), uses accreditation and recognition programs to foster best practices - including Patient-Centered Medical Home (part of NCQA's Physician Practice Connection program) and the Diabetes Recognition Program (fostering application of the Chronic Care Model in ambulatory care practice). Both of these NCQA programs give providers a roadmap for best practice implementation and foster commercial reimbursement incentives for providers to adopt best practices. Another example, beginning in 2009, professional medical societies will promote QI activity (based on IHI-model QI Standards) as a requirement for Board re-certification. The American Board of Pediatrics Standards for QI Projects Seeking Maintenance of Certification Approval are soon to be released. Other professional medical boards (such as the American Academy of Family Physicians) are expected to adopt these Standards, too. Based on the IHI Model for Improvement and QI approach, these Standards will help motivate providers to participate in QI and QIC programs to meet re-certification requirements. This development could be beneficial and well-timed for organized, ambulatory QIC activity aiming to address child health in communities of poverty.

Important demographic trends relevant to CHFWCNY's QI work with frail elders include an aging population, longer life span, increasing rates of chronic disease and multiple chronic conditions. Related to these demographic trends, health system challenges will highlight increased need for home and community-based services to address the needs of frail elders, increased demand for trained family caregivers, and need for a health care workforce and leadership better trained and oriented toward QI. To address these challenges, better care and service coordination will be needed to break down silos of care and services for frail elders. All of these issues should influence CHFWCNY's QIC approach.

For children living in communities of poverty, a similar set of trends and challenges exists that will influence CHFWCNY's QIC approach. Need for better early detection of health and behavioral issues, referral and care coordination strategies, better engagement and support of patients and family caregivers, better prevention strategies, better integration of services to break down existing silos of care and social services - these are issues that will drive QIC activity to address the needs of children living in communities of poverty.

National foundation trends and priorities may influence CHFWCNY's approach. Based on current funding priorities of leading national foundations, the following issues are likely to be featured in major philanthropic initiatives: place-based QI programs targeting obesity and chronic disease management for improved population health; strategies for improved complex care coordination; hospital readmissions; and regional improvement initiatives (including systems change initiatives RWJF's AF4Q and social determinants/community initiatives like AECF's). These areas of focus are likely to see a high level of support for improvement over the next few years. Also, CMS reimbursement and performance measurement strategies will generate widespread improvement emphasis on hospital-acquired infection, pressure ulcer, and other preventable conditions impacting Medicare populations in hospitals and nursing homes. Medicare Quality Improvement Organizations (I-PRO), states, hospital and nursing home associations will target these areas for improvement.

Lastly, all QI occurs in the larger context of healthcare business and economic cycles. In 2009, a major economic downturn creates an environment in which health and social service organizations are likely to be experiencing financial and operational limitations. As a result, organizations are focusing in on core mission and, in the words of one expert, "hunkering down". For QIC and QI program sponsors, this translates into a need for programs that are efficient, core mission relevant, that make greater use of virtual collaborative methods, and with lighter data reporting burden - programs with these characteristics are likely to enjoy the highest participant engagement and success.

National trends and developments related to the QIC approach

In addition to demographic, policy and foundation trends and opportunities outlined above, trends related to QI and the QIC approach are also important factors for CHFWCNY to consider. A summary of key trends include:

- Movement away from the condition-by-condition QIC approach, and movement toward QIC approaches involving global or underlying interventions that will impact care delivery more broadly. IHI is leading this charge as a response to the recognized need for developing QIC approaches that can accomplish QI that is both deep and broad in its scope. QIC topics such as transitions of care, readmissions, medical home, transforming inpatient care, reducing disparities of care, and medication management/reconciliation will be emerging themes for the QIC approach.
- Less resource intensive approaches to QICs will proliferate involving more virtual shared learning networks.
- Coaching strategies will be used to jumpstart adoption and learning.
- Training for QIC success will expand. QI skills deficits often hinder the success of the QIC approach. Various approaches and opportunities are emerging to address this challenge:

    - QICs are building into the QIC curriculum skills training in the Model for Improvement, also training in how to organize and implement a team QI project.
    - QICs entirely devoted to QI skills development among participating teams are emerging.
    - Building QIC sponsorship capacity. IHI (for example) offers Breakthrough Series College, Improvement Advisor training, and other QI training opportunities to develop field capacity to design, manage and proliferate QIC programs.

CHFWCNY could consider developing local expertise in order to expand its ability to execute QIC programs.

- State and regional resources for QI training and technical assistance supported by CMS, Commonwealth Fund, and others. Providing a resource to support frail elder QI efforts, CMS is increasingly funding/requiring state Quality Improvement Organizations (including I-PRO) to run QICs, provide QI tools and technical assistance. On the pediatric side, the Commonwealth Fund is fostering state-level hubs of QI expertise and technical support (such as the Vermont Child Health Improvement Project and New York's Empire State Child Health Improvement Partnership). RWJF supports two technical assistance organizations - Improving Chronic Illness Care (ICIC) and Improving Performance in Practice (IPIP) to elevate improvement work in pilot states and in conjunction with AF4Q.

- Recognition of the need to engage and train senior leadership and governing boards in strategic execution for QI. IHI and the American Hospital Association are leaders in this area, offering useful tools, programs and resources on-line.

The NQF priority placed on population health will create new opportunity - a new framework - for the QIC approach. In its Triple Aim initiative, IHI is examining how population health can be furthered using QI approaches (examples of sites working on Triple Aim include CareOregon and the Washington, D.C.-based Primary Care Coalition of Montgomery County). NICHQ and the Harvard University Center on the Developing Child are applying a QI framework for tackling poverty in a ten-year, place-based intervention in Tulsa, OK. Project investigators describe The Tulsa Project as a collaborative, community-based laboratory for designing, testing, and refining innovative strategies for reducing the cycle of intergenerational poverty through new approaches to intervention in the early childhood years. Funded by the George Kaiser Family Foundation, The Tulsa Project is multi-sector regional intervention influencing children and families. The Project will feature improvement projects/QICs addressing early childhood education, mental health, economic development (job training and life skills). and health care systems and service coordination for a medical home for all children in Tulsa. The intervention will apply the IHI Model for Improvement approach to Head Start program teams in Tulsa. Teams will work collaboratively on different areas of focus within the broader intervention (education, health care, mental health, economic development). Teams will receive QI skills training and capacity support from the University of Oklahoma, Tulsa, School of Community Medicine (Tulsa Project collaborators). Head Start teams will play a key role in spreading the intervention to other providers and agencies.

Placed-based approaches to health and social service improvement and integration have similarities with CHFWCNY's approach to improving care and services for frail elders and children in communities of poverty. While this methodology is still emerging at this time, NICHQ and others are working to embed QI methodology and a QIC approach strategically within a place-based framework. This could be a promising direction for CHFWCNY's QIC programs.

Federal Agency opportunities relevant to the QIC approach

In response to the IOM's observation in *Crossing the Quality Chasm* that the lag between discovery of more effective forms of treatment and their incorporation into routine patient care averages 17 years, national agencies such as HRSA, Administration on Aging (AAA), and the Agency for Health Research and Quality (AHRQ) are increasingly emphasizing adoption and dissemination of evidence-based best practice in their grant and technical assistance programs.

For example, the AHRQ Health Care Innovations Exchange is a national resource providing timely, how-to illustration of best practices in QI and care management, including recent case studies and project lead contact information.[89]

Several leading agencies support safety net providers to adopt the Chronic Care Model, health information technology, and other QI approaches. For example, HRSA provides Federally Qualified Health Centers with technical assistance and opportunities to participant in QICs sponsored by HRSA. Hundreds of safety net providers across the nation have taken advantage of HRSA QIC programs and other QI supports. Experts suggest that more QIC program funding for safety net clinics from HRSA is likely. In addition, HRSA recently released an on-line QI Toolbox focused on HIT adoption to support advancement in disease management and effective QI among for safety net providers.[90] Refer to Appendix C for a summary of key federal agencies' programs/resources to support healthcare QI for frail elders and children living in communities of poverty.

State trends, issues and opportunities

The New York Department of Health (Division of Family Health, Medicaid, and other Divisions) lead and support efforts to build state and local QI capacity. The Empire State-Child Health Improvement Partnership is one example of QI capacity building activities in which the state plays a role. The Department of Health sponsors child health QIC programs and pilots ongoing in preventive screening and surveillance, asthma management, school health, immunizations, ADHD and adolescent health. Emerging state QI/QIC topic areas include autism and obesity. Many of these programs use a QIC approach. For example, the Department of Health's asthma QIC involves 11 coalitions statewide (including a coalition in Western New York). Coalitions include providers, the local AAP chapter, families, hospitals and schools working together to implement a community asthma management program. Coalitions received a 2-day "Jumpstart" training from NICHQ at the outset of the coalition designed to build QIC skills and the capacity of each coalition to implement a successful asthma intervention and QIC. In addition, the Department of Health (together with NICHQ) ran a 15 month asthma management QIC among school based health centers in New York City. This QIC promoted collaboration and linkage with community services and incorporated QI training into the QIC programming. These are just a few examples of Department of Health QI programs relevant to CHFWCNY's target populations.

New York state's Medicare Quality Improvement Organization, I-PRO, is (as part of CMS' Ninth Scope of Work) required to carry out QICs and to provide support and technical assistance to providers serving Medicare patients. I-PRO (in collaboration with the Greater New York Hospital Association, the New York Department of Health, and others) has launched several QICs among New York state providers - some statewide, some regional and in WNY - to address priority quality performance topics of interest to CMS such as MRSA infection and pressure ulcer prevention among targeted hospitals and nursing homes. I-PRO's role in CHFWCNY's QIC on transitions of care is a good example of the partnership, provider support and QI expertise that I-PRO as a state/federal resource can bring to the QIC approach.

A recent statewide campaign funded by the New York State Health Foundation (NYSHF) aims to get the Chronic Care Model into practice in New York state and improve diabetes care provided by New York physician practices. Modeled after the IHI Campaign, NYSHF's initiative will fund regional nodes to engage local providers in QICs or other peer learning QI activity to foster adoption of the Chronic Care Model in practice. For example, the Community Health Care Association of New York (CHCANYS) is a NYSHF node working with 25 community health

centers at this time to implement the Chronic Care Model for advancing diabetes management among community health centers. NYSHF's campaign will also involve community organization outreach to patients to promote primary and secondary diabetes prevention.

The New York State Department of Mental Health is another statewide QI resource. The Department of Mental Health's recent Children's Mental Health Plan includes numerous recommendations for improving this system of care that could be implemented and achieved, at least in part, through a QIC approach.

Local trends, issues and opportunities

Western and central New York are poised for great QI undertakings over the next few years. In addition to local activity related to statewide programs (I-PRO, Department of Public Health, and other) outlined above, Western New York (WNY) in particular is home to several major health care improvement initiatives now underway. A major opportunity for WNY is Aligning Forces for Quality (AF4Q) - a program of RWJF. Through the leadership of the P^2 Collaborative of WNY, WNY was selected by RWJF in 2007 as one of 14 communities in the U.S. to receive a ten year commitment of resources, investment and training with the goal of turning promising QI and evidence-based practices into real results on the ground.[91] Applying a place-based approach for long term impact, AF4Q aims to create a local, sustainable infrastructure for improvement. This will involve a WNY regional multi-stakeholder coalition working together to develop sustainable QI programs leading to improved population health. Primary objectives will include development of QI capacity regionally (with special emphasis on ambulatory care providers), quality performance measurement, development of financial incentives for quality care, consumer engagement in care (particularly chronic disease care), and an overarching emphasis on reducing disparities of care across the region. AF4Q will focus on QI systems improvement and patient/consumer engagement strategies leading to clinical improvement.

AF4Q QI training and improvement objectives will be accomplished through a range of strategies including the QIC approach, learning collaboratives, technical assistance (expert coaching, consulting, technical assistance), and public quality performance data reporting using an electronic/web-based platform. In WNY, local adaptation of these methods are emerging to match regional needs and opportunities. For example, ambulatory care QI programs in WNY will focus initially on diabetes care improvement through the use of Provider Enhancement Associates providing training and systems redesign support to ambulatory care practices. Consumer Engagement Associates (CEAs) will work on consumer engagement in care and chronic disease self care education. In addition, a region-wide emphasis on QI training and capacity building is developing (sponsored by the P^2 Collaborative of WNY in partnership with CHFWCNY) - Improving Quality Improvement (IQI) in WNY.

IQI is a regional QI training and capacity building initiative working to create world-class, patient-centered systems of care and improved health outcomes in the region. IQI began in 2008 with a QI needs assessment involving 40 regional stakeholder, state and national experts to determine QI needs and training priorities for the region. In 2009, Fundamentals of QI 2-day workshops have been offered, and were attended by over 200 WNY providers. In addition, a long term care focused QI training, Improving Care and Caring, is underway with 80 area long term provider staff attending six half-day sessions focused on QI issues of relevance to nursing home, assisted living and home health providers. A population-based approach to QI capacity building, IQI aims to develop the regional knowledge base for future QI activity leading to improvement in clinical care and health outcomes.

Particularly in the area of regional QI capacity building, CHFWCNY's goals and the goals of AF4Q are well aligned as illustrated by the IQI in WNY program and partnership. Since WNY long term care providers will be integral to most programs CHFWCNY might offer in the next three to five years to support improving care of frail elders, IQI's Improving Care and Caring opportunity will create fertile ground for CHFWCNY's frail elder QIC programs to reach their full potential. A place-based approach to QI capacity building, IQI is a good vehicle for expanding the rigor and impact of QIC programs in the region. CHFWCNY's continued IQI leadership will also enhance the potential of CHFWCNY's QIC and other QI programs.

Another regional opportunity is the WNY Community Health Planning Initiative (WCHPI) recently awarded by New York State to the P^2 Collaborative (in partnership with CHFWCNY). Goals of this initiative are to develop a population-based, patient centric community health planning framework, governance, and an organizational and data analytic infrastructure to implement regional health planning and health programs. WCHPI can build upon AF4Q planning infrastructures already in place in WNY. The potential for synergy between WCHPI and AF4Q is enormous and the impact on WNY health care and health outcomes could be profound. Through these and other programs, WNY is positioned to become a national leader in adopting place-based, QI focused, population health initiatives that incorporate a QIC approach for targeted improvement and learning.

Part III. Other QI Approaches to Consider

Selection of other QI approaches for CHFWCNY to consider is guided by the same set of criteria used to determine the scope of QIC programs included in Part II (above). Included here are demonstrated, evidence-based QI strategies and best practices that if implemented could accomplish the following:

- Break down system silos - increase coordination of care and services for CHFWCNY target populations
- Promote peer learning, shared learning
- Expand the QI skills and capacity of systems and staff that serve CHFWCNY target populations.

Strategies presented are complementary to CHFWCNY's QIC approach and, in some cases, could be combined with a QIC approach for greater impact. While there is a range of QI approaches that could be considered, we focus in on a few examples best aligned with CHFWCNY's grantmaking philosophy (see Figure 1) and most synergistic with a QI strategy that highlights a QIC approach. We present here examples of learning collaboratives, community-based provider education strategies, shared resource models, shared infrastructure models, place-based QI approaches, and models for improving complex care and coordination.

Learning Collaboratives

Learning collaboratives are lower intensity applications of the QIC model. Designed to foster rapid adoption and spread of QI innovation, learning collaboratives take the form of QI Campaigns or other QIC-lite approaches involving peer-to-peer learning as an underlying concept. As defined in Part II, QI campaigns can be used when a lower level of "breakthrough" support is required. A good example of a frail elder-focused learning collaborative is CHCF's support of 17 California multi-stakeholder community coalitions working to promote the adoption and use of advance directives. In pediatrics, this strategy has been used to promote adoption of guideline-based developmental screening and surveillance guidelines and tools.

In western and central New York, a learning collaborative approach could be applied to efforts to promote the use of Medical Orders for Life Sustaining Treatment (MOLST) advance directives among providers and patients. Similarly, a learning collaborative approach could be applied to foster adoption of Bright Futures or other preventive screening guidelines among pediatricians in western and central New York. Experts sometimes refer to this approach as "screening QI" - a QIC-lite variation. These are just a few examples of rapid adoption best practices that can be implemented using a learning collaborative approach.

Educating Providers in Community

"Door-to-door" provider coaching, improvement advising and technical assistance based on an academic detailing model is a growing trend in QI, referred to as Educating Providers in Community. Pioneered by the American Academy of Pediatrics (AAP) and supported by the Commonwealth Fund, RWJF, and others, Educating Providers in Community is a model in which QI experts visit provider sites in the community to examine current practices in place for QI topics and targeted areas for improvement. Experts work with providers one-on-one, examining "how do you do this now?" They offer tailored approaches for how to implement new processes and systems at the provider site, including tools for implementation, a roadmap for specific workflow changes or other innovations necessary for improvement. Proponents of this approach suggest that, while expert site visits may be labor intensive, the approach is effective and - ultimately - efficient because, "... with support, providers can execute (instead of

potentially floundering with a change package or other do it yourself approach to QI)." AAP chapters in several states (including Pennsylvania, Illinois, Tennessee and others) have applied this improvement advising approach in pediatric practices to address developmental and adolescent screening guidelines, and other QI topics.

Other organizations engaged in similar practice-based QI support activity include Medicare Quality Improvement Organizations (I-PRO) supporting Medicare providers, and Improving Performance in Practice (IPIP) supporting ambulatory care providers. Funded largely by RWJF, IPIP's goal is to help physicians improve care in the office practice setting. A key feature of IPIP is the use of QI coaches who go into physicians' offices and work closely with the entire practice team on improvement efforts. IPIP coaches focus on five key areas that help practices provide better care for patients with chronic conditions (areas include best applications of chronic disease registries, customized patient flow and care protocols, and patient self-management education strategies). IPIP is now being piloted in five states, and will soon be available to AF4Q communities as a resource for ambulatory care improvement. Other organizations such as the Vermont Child Health Improvement Project and the Empire State Child Health Improvement Partnership are also engaged in educating providers in the community, improvement advising, and other direct technical assistance activities to support QI in their respective states.

Shared Resource/Shared Infrastructure

An important and emerging QI strategy is shared regional infrastructure for care coordination and care management. Shared QI infrastructures are designed to serve multiple practices in a defined region or population. These models typically involve a "linkage navigator" - a person or center that coordinates referrals, care and services for patients and families. Shared resource models are particularly effective at coordinating complex care. One of the best examples of this model is Hartford, Connecticut's *Help Me Grow* (a program of Connecticut Children's Medical Center). *Help Me Grow* is a statewide referral and care coordination system that assists families and providers in identifying developmental concerns in young children, and connects families to appropriate resources. The *Help Me Grow* shared infrastructure is a common community access point: a 1-800 call center for physician offices, parents and social service agencies to access expert advice on care coordination, referrals and case management support. The program offers practical, child-specific care coordination support services and enables follow-up through the use of a cross-sector referral database for patient tracking. In addition, the program actively engages a "living resource directory" - a system of community-based service agency liaisons who keep *Help Me Grow* case coordinators up-to-date about specific local resources, and community based program availability, news and information.

Cutting across sectors, *Help Me Grow* helps patients and their families access and navigate health and social service programs. A regional, shared infrastructure approach, *Help Me Grow* is an efficient care coordination mechanism that can be adopted to support care coordination challenges for a range of patient populations, including frail elders and children in communities of poverty. Through support from the Commonwealth Fund and leadership from the *Help Me Grow* Program Office at Connecticut Children's Medical Center, *Help Me Grow* is now being replicated in multiple states (including South Carolina, California, Iowa, and several new states soon to be identified through a Request for Proposal process now underway).

A similar shared infrastructure model is in place in Massachusetts, where eight regions are each served by a mental health support unit staffed by a child psychiatrist, clinical social worker and a case manager who provide care management support to local physicians treating mental health issues in a primary care setting. Due to the shortage of psychiatric providers across the U.S.

and in Massachusetts, this shared resource is designed to help physicians identify, diagnose, treat and manage mental health disorders in a primary care setting. Psychiatric care units provide case-specific psychiatric support, medication advice, counseling referrals, a range of services through which mental health care coordination and management can be maintained in community by primary care physicians. According to one expert, "This is a just-in-time education program for primary care physicians during a teachable moment - when they are faced with a patient requiring mental health services not likely available in the patient's community". Interestingly, over time the number of physician calls to the mental health support unit has declined as providers gain knowledge and confidence in identifying, diagnosing, treating and managing mental health disorders in a primary care setting. The program has resulted in fewer hospitalizations and Emergency Department visits for psychiatric patients whose care is managed and coordinated through this program. In Illinois, a similar shared resource mental health care program is in place to support obstetricians treating pregnant women with symptoms of depression.

Place Based Approaches

Place based approaches to QI typically involve regional collaboratives or coalitions working across sectors to achieve health care systems change and health improvement goals within a specified region. There are two primary frameworks for place based QI: market based and neighborhood or community based. Market-based approaches typically involve collaboration among payors, providers, plans and patients. A shared data and performance measurement platform (typically involving publicly reported quality performance information) is what drives consumer engagement, alignment of benefits and financing, and improvement of health care delivery. The ultimate goal is a transformed health care delivery system. Early examples of this approach include the California Cooperative Healthcare Reporting Initiative, the Massachusetts Health Quality Partnership, and the Pittsburgh Regional Health Initiative. The more recent regional coalition developed and led by the P^2 Collaborative of WNY is a leader among 14 AF4Q communities working within this framework toward regional quality and health improvement. Regional coalitions typically feature collaborative QI programs that make use of the regional coalition infrastructure for governance, leadership, and quality performance data to drive and monitor improvement.

A second place-based framework is a neighborhood or community framework involving development of neighborhood systems of care and collaborative governance. A good example of this approach is AECF's East End Partnership - a community collaborative based in Richmond, Virginia. The East End Partnership helps low-income residents receive comprehensive, coordinated care and social services from local providers and a Family Resource Center, facilitated through the use of a web-based client tracking system linked to regional providers and agencies.

Place based approaches are frameworks for regional QI activity. QI efforts and programs relevant to frail elders and children in communities of poverty (involving QIC, shared resource, or other QI approaches summarized here) can be a vehicle for improvement within a place-based framework.

Improving Complex Care

Frail elders (in particular) often suffer from multiple co-morbid conditions requiring complex care management and coordination. Intensive levels of medical care and social service support for patients and family caregivers are typically needed from multiple specialties, disciplines and organizations. Often, elder care is not adequately planned or coordinated. Excellent models exist for complex elder care management that CHFWCNY and others could support locally.

These models typically include care coordination or case management services provided a nurse or social worker; comprehensive assessment leading to creation of a formal care plan; and computerized case management to facilitate monitoring, communication and coordination of care among multiple providers.[92] One example, the John A. Hartford Foundation's IMPACT (Improving Mood Promoting Access to Collaborative Treatment) is a demonstrated, evidence-based team model for late-life depression treatment in the primary care setting. IMPACT has shown that practical, cost-effective, targeted management of depression in the primary care setting can improve the quality of life of frail elders.[93] Another demonstrated model involves use of a care manager to coordinate health and social services for elders with dementia, leading to improved outcomes among frail elders.[94] Already supported by CHFWCNY in western and central New York, the PACE program is another example best practice for elder care coordination. Improving complex care is an increasingly important QI priority for frail elders and family caregivers. These and other models for improving complex care could be adopted in western and central New York.

Other QI approaches and strategies presented here are complementary to a QIC approach and, in many cases, could be combined with a QIC approach for greater impact. For example, a complex care coordination model such as the dementia intervention described above could be implemented using a cross-sector QIC approach (with cross-organizational teams). In addition, a shared resource model could be included in which one care manager is shared across providers and agencies participating in a QIC to improve care management for elders with dementia. Another combined example: the Educating Providers in Community ("door to door") approach could add significant value to the QIC approach. Expert site visits to participating QIC provider teams for technical assistance and coaching could jumpstart improvement activity and expedite gains. Due to the complex nature of health and social service needs among frail elders and children in communities of poverty, combined approaches to QI illustrated here may add significant power and impact to the QIC approach.

Part IV. Building QI Capacity through Training and Leadership Development

QI Training Approaches

The Need

The QIC approach is based on the science of QI. The goal of a QIC is to implement an evidence-based intervention (or "change package") using QI methodologies. Most QICs are based on the Model for Improvement, a powerful method involving cycles of Planning, Doing, Studying and Acting (PDSA) toward the goal of improvement. Successful PDSA efforts typically involve planning for change, measuring change over time (using run charts or other tracking methods), and an interdisciplinary team approach. QIC teams/participants often do not come to the QIC process with this knowledge or experience in QI methods and the collaborative approach.

According to one of the architects of the QIC approach, "Collaboratives should build QI capacity but without training, they don't. Lack of QI skills is a big problem. Managers and staff need training to know how to improve and then how to spread an intervention." QIC participant teams will be much more effective at implementing interventions for improvement if they have this QI knowledge and skill set from the outset. QIC progress and impact will be hindered by lack of knowledge in the fundamentals of QI.

Practical, applied QI training is needed to support and foster more effective QIC and QI programs in western and central New York. CHFWCNY's QI needs assessment (conducted in 2008 with a range of providers in western New York) highlighted the importance of staff and manager training in the fundamentals of QI. Sector-specific training needs were also identified as high priority next steps for enhancing regional QI capacity. In addition to the need to build greater QI skill level for effective execution of QIC and other QI programs, a related observation is the need for a greater culture of QI among health care organizations in the region. Without an understanding or appreciation of the power of the scientific method and Model for Improvement - without having experienced this orientation to QI - provider staff may view QI from a quality assurance frame of reference. In the quality assurance frame of reference, quality monitoring is performed for compliance purposes and without the spirit of inquiry that comes from the science of improvement. The science of improvement is as important for sowing the seeds of an organizational culture of quality as it is for improving QI effectiveness. The science of improvement is the basis for all meaningful and effective QI. Any regional effort to expand QI and QIC activity should begin with a targeted approach to training in the practical science of improvement.

QI Training Approaches

Innovative approaches to QI training that could be demonstrated in western and central New York include the following:

- Building QI training into the QIC curriculum
- Sponsoring a QIC with QI/QIC skills training as the intervention for improvement
- Regional approaches, such as Improving Quality Improvement in Western New York

Experts agree that QICs will be less effective in reaching improvement goals unless participants are sufficiently trained and oriented in the QIC process and the Model for Improvement. In response, many experts are building QI fundamentals training directly into the QIC curriculum. The National Initiative for Children's Healthcare Quality (NICHQ) is a pioneer in this approach

with its QI Jumpstart course built into the early curriculum offerings of many QICs designed and staffed by NICHQ advisors. For example, in both the Maternal and Child Health Bureau's QIC on Medical Home for Children with Special Health Care Needs, and in the New York State Department of Health's QIC on asthma, NICHQ began each QIC with a two-day Jumpstart QI course designed to improve the capacity of QIC leaders, coalitions and teams in "how to do QI, how to run a QIC, and how to participate in a QIC project". Some Jumpstart sessions focus on training QIC leaders and a train-the-trainer approach. Other sessions are more focused on QI skills training for participants. Jumpstart QI training is designed to accomplish what the name implies: to jumpstart QIC programs and team efforts to improve. Jumpstart QI training or other approaches to training in the fundamentals of QI have been shown to be highly beneficial in preparing QIC participants to get the most out of the QIC experience. QIC team leaders can also benefit from training to support their role as team leader and team sponsor or liaison to senior management at each participating organization. Some experts recommend a four-day training in QI and QIC operations for QIC leaders, and a two-day QI training for QIC participants. CHFWCNY could consider building a range of QI training opportunities into its QIC approach. QICs just getting underway in 2009 are well timed to incorporate QI training.

Another innovative approach to building QI capacity is use of the QIC approach explicitly for QI training. In this model, a QI training or intervention is applied to either a common QIC topic or to a range of team topics. Pioneered by the Minnesota Department of Public Health (DPH), the Minnesota Public Health Collaborative for Quality Improvement applied a QI training intervention and a QIC approach to support county Health Department teams working on different improvement projects in each county. The goal of this 18 month QIC was to apply Model for Improvement methodology to improve the caliber and effectiveness of DPH sponsored QI projects statewide. The QIC provided eight participating county DPH and provider teams with tools to recognize opportunities for improvement, identify changes, test changes, analyze what was learned, and incorporate lessons learned into DPH programs and activities at the county level. Staff from the state Department of Health ran this QIC with expert faculty support provided by the University of Minnesota School of Public Health.

Taking the Minnesota Public Health Collaborative for Quality Improvement program a step further, a second phase of QIC activity for the Minnesota DPH now underway is focused on county-level coalition development and consumer engagement strategies. This QIC will pave the way for a third QIC (beginning later in 2009) in which coalition-driven public health interventions will address obesity and tobacco prevention at the county level. Minnesota's innovative approach to building state and local DPH QI capacity applies the QIC model to train and develop local QI experts and trainers at the county level.

Another example of this approach is the Pittsburgh Regional Health Initiative's (PRHI) inclusion of lean QI curriculum in many of its collaborative QI programs. Funded in part by the Jewish Healthcare Foundation, PRHI is a unique community resource, providing clinicians and institutions with the training and tools to dramatically improve patient safety and healthcare quality through reductions in medical errors, use of evidence-based practices and elimination of waste. Participants in PRHI initiatives may enroll in Perfecting Patient Care - an intensive four-day program teaching lean QI principles and applications - known as "PPC University". A regional consortium with an infrastructure for QI training and capacity building, PHRI's approach has expanded QI capacity in the region. CHFWCNY could incorporate lean QI curriculum (in addition to Model for Improvement curriculum) into QIC and QI training programs in western and central New York.

Summarizing these two examples: The Minnesota DPH model applies the QIC approach to achieve targeted QI training and capacity building, whereas the PRHI approach incorporates Perfecting Patient Care/QI curriculum into PRHI programs. Either or both of these approaches could be used by CHFWCNY to build QI capacity directly among providers working to improve care for frail elders and for children living in communities of poverty.

Improving Quality Improvement - A Regional Approach to QI Training

Improving Quality Improvement in Western New York (IQI), is an initiative of the P^2 Collaborative in partnership with CHFWCNY. A component of Aligning Forces for Quality (AF4Q), IQI aims to build sustainable QI capacity in the region. IQI was developed in response to a 2008 regional provider QI needs assessment that highlighted the importance of basic training in the fundamentals of QI for area providers and, in addition, more targeted training for specific sectors of the health care delivery system such as long term care. In response to identified priorities, P^2 Collaborative developed a set of regional QI training proposals for review with Western New York (WNY) QI leaders. QI leaders advised the QI training plan and process, and in February 2009, the first in a series of QI training workshops were held. Two consecutive, two-day workshops on the Fundamentals of QI were offered, attended by over 200 WNY providers. The second in a series of IQI trainings, Improving Care and Caring - a long term care focused QI training - is now underway with 80 area long term care provider staff attending six half-day sessions focused on QI issues of relevance to nursing home, assisted living and home health providers. Future IQI programs will target ambulatory and acute care providers in the region. IQI's goal is to develop the regional knowledge base for future QI activity leading to improvement in clinical care and health outcomes.

As a next step for advancing IQI, a QIC focused on QI capacity building could effectively build upon the QI skills and Model for Improvement foundation provided by the Fundamentals of QI workshops. Participants came to the Fundamentals of QI workshops with a project or a problem from their home organization that they wanted to improve. A QIC approach in which participating teams apply QI methodology to reach improvement on a home project (with support from one or more trained Improvement Advisors as QIC leaders) could advance the Fundamentals of QI Workshop training. The Minnesota DPH model could be used to take Improving Quality Improvement in WNY to the next level as a component of AF4Q.

Building QI Training Capacity

In addition to training QIC participants and provider staff, efforts to build QI training *capacity* are also needed in western and central New York. Building QI training capacity could take several forms:

- Developing a cadre of Improvement Advisors
- Developing shared regional infrastructure for QI
- Promoting targeted training approaches with key CHFWCNY audiences, such as physician quality champions and home health providers serving the needs of frail elders.

Regional QIC and QI training activities require a cadre of experienced Improvement Advisors and other expert faculty to lead and execute these activities. Improvement Advising capacity is also needed to train and coach QIC participants. Improvement Advisor talent can be brought in to western and central New York in the form of consultants or other experts to support local QI activities. Improvement Advisor talent can also be developed locally.

One of the best approaches to building regional QI capacity would be to train, develop and support local QI experts to serve as regional (or QIC-specific) Improvement Advisors. This could include one or a few local QI experts that could be developed into this capacity through

training in the role of the Improvement Advisor and QI coach, training in the collaborative process, and leadership development as needed. An excellent Improvement Advisor training resource for developing one or a few local experts, IHI offers intensive, in-person Improvement Advisor development courses, Breakthrough Series College, seminar opportunities, online courses and other QI training opportunities. In addition, local colleges and universities (including Canisius College and the University of Buffalo) offer courses and services applying the lean Six Sigma approach to QI and other QI curriculum that could be leveraged to build regional QI capacity.

Existing QI technical assistance organizations operating statewide and in western and central New York could also be leveraged to build QI capacity. Examples include I-PRO (New York state's Medicare Quality Improvement Organization providing support to providers serving Medicare patients) and an emerging New York State resource, the Empire State Child Health Improvement Partnership (ES-CHIP). A public/private Improvement Partnership consisting of the New York State Department of Health and physician organizations such as the American Academy of Pediatrics, Association of Family Physicians, and others, the ES-CHIP Improvement Partnership serves as an advisory group to New York State Department of Health and other pediatric QI efforts. ES-CHIP aims to provide QI technical assistance, training and support to strengthen the capacity of providers and local public health departments to engage in successful QI efforts. Seed-funded by the Commonwealth Fund and modeled after the Vermont Child Health Improvement Program (a state and national resource for QI training and capacity building to improve child health and health care), ES-CHIP could potentially be a QI training resource for child health initiatives in western and central New York. The P^2 Collaborative's Practice Enhancement Associates (PEAs) are another QI coaching, training and technical assistance resource in WNY that is building QI and chronic disease management expertise among ambulatory care providers in the region.

Another approach that might serve CHFWCNY's QI/QIC faculty needs and also broader QI needs within the region could be to create a centralized infrastructure/resource for QI. A regional QI support center serving as a go-to resource for providers could be modeled (for example) after the Pittsburgh Regional Health Initiative's QI training and support program, or the Vermont Child Health Improvement Program. A regional QI support center could be designed/developed collaboratively with RWJF/AF4Q, the P^2 Collaborative, and other WNY QI stakeholders who might together develop a strategic plan and a diversified funding stream for a resource center, with the goal of fostering the long-term sustainability of a regional QI resource.

A third strategy for building QI capacity includes support for local participation in clinical fellowship programs. There is a broad range of clinical fellowship programs targeting physicians and nurses - some focus on developing clinical champions for QI, others focus on clinical staff training featuring QI content as a component of the curriculum. The John A. Hartford Foundation supports a number of clinical and geriatric Fellows programs designed to foster clinician leadership and improvement in geriatric service lines. One program in particular - Practice Change Fellows - (a joint effort of the John A. Hartford Foundation and Atlantic Philanthropies) aims to develop physicians, nurses and social workers into leaders and change agents for improved geriatric care. Managed by Eric Coleman, MD, a geriatrician and QI expert, Practice Change Fellows receive training in geriatrics, leadership and QI (including how to identify, implement and measure improvement). In addition, Fellows receive institutional grants of $50,000 to implement geriatric-focused improvement projects at their home organization. Other fellowship programs (such as the RWJF Executive Nurse Fellows Program and the Integrated Nurse Leadership Program) promote clinical QI expertise and leadership development among nursing staff. Lastly, the United Hospital Fund's Physician Quality

Champions program trains physicians (and nurses) to be QI advocates within their organizations. This program could be replicated locally in western and central New York.

Clinical training programs targeting allied health professions are yet another strategy for QI training and capacity building. One program that is of relevance to CHFWCNY's frail elder target population is Curricula for Home Care Advances in Management and Practice (CHAMP). A program designed by the Visiting Nurse Service of New York with support from Atlantic Philanthropies, CHAMP engages home health workers and front line managers in an e-learning peer network collaborative. CHAMP curriculum components include clinical content for managing the care of elders, team building and managing for quality (including QI training based on IHI methodology and the Model for Improvement). Through this course, QI methods are applied together with clinical curriculum toward the goal of improving pain and medication outcomes in the home health setting. Outcomes data is collected (CMS measures and other) to measure for improvement. Demonstrated program results include reduced polypharmacy, reduced patient reported pain, and improvement on seven measures of medication management. CHAMP is being rolled out nationally at this time, and in New York, with partial support from the New York State Health Foundation.

Another frail elder-focused training and capacity building opportunity (funded by the John A. Hartford Foundation in collaboration with AARP) is under development now for roll-out in 2010. A "train the trainer" approach, this program will train Area Agency on Aging staff to provide training and resources to family caregivers. The curriculum will include content for caregivers in the areas of nursing, social work and QI. Similar to CHFWCNY's Family Caregivers QIC approach, this developing program recognizes the growing role and importance of family caregivers and the critical need for caregiver training.

A fourth strategy for building sustainable, regional QI capacity is to build practical QI curriculum into the Graduate Medical Education Program at the University of Buffalo School of Medicine. Local QI leaders identified the need for medical residents to come prepared to practice medicine armed with a better understanding of QI fundamentals and real-world experience in QI practice. A "QI boot camp" for second year residents in the Graduate Medical Education Program at the University of Buffalo School of Medicine could build QI capacity among physicians (a critical audience) and further a regional culture of QI for years to come.

Leadership for QI

The Case for Senior Leader Engagement in QI

Leadership responsibilities in health care are changing. Chief executive officers (CEOs) could once argue that their role was focused on finances and facilities, and that it was the clinician's responsibility to deliver quality care. However, over the past few years, public report cards and other reports such as the Institute of Medicine's *To Err is Human* have created tremendous public pressure on leadership for quality improvement in health care. Clinical quality performance is now a strategic imperative that can no longer be delegated. Responsibility for measured performance in clinical quality and safety now rests with the senior leadership team. Governing boards are increasingly viewed as having ultimate responsibility for quality oversight in health care organizations.

Key informant interviews highlight these and other important themes regarding leadership for QI. Experts repeatedly note that leadership support and engagement are essential to the success of any QIC or QI program. They stress that QI programs will not reach their full

potential if leadership attention and an organizational strategy supportive of QI are lacking. Experts also note that senior leaders often have limited experience with QI. They may have had prior involvement in QI projects, but (according to experts) organizational leadership for QI requires a very different approach and skill set. Methods that work at the QI project level are not adequate to achieve the scale, spread, cultural change, and sustainability required for system-level performance improvement.[95] Experts conclude that CEOs and other members of the senior leadership team must approach QI as a strategic priority. Governing boards must steer this activity and play an active role in strategic execution for improvement. Experts agree that the question is not whether but *how* can CEOs, governing boards and other senior leaders execute a strategy for continuous quality improvement.

Framework for Leadership for Improvement

IHI is a worldwide leader among organizations working to develop health care leadership's ability to execute a strategy for excellence in QI. IHI's Framework for Leadership for Improvement suggests five core leadership activities that are necessary for improvement:[96]

- **Establish the Mission, Vision and Strategy** as a "relentless drumbeat" for communicating the direction of the organization to all stakeholders.
- **Build the Foundation for an effective leadership system** by choosing, developing and aligning a leadership team capable of transformational tasks, and then ensure that, throughout this team, improvement capability is exceptional.
- **Build Will** in the form of visible, constant, unrelenting, and well-explained commitment, starting with the organization's leaders, to make measureable systemic improvement as quickly as possible.
- **Ensure access to ideas** about the clinical best practices and support processes, and insights about how to introduce them, so that the organization has readily available designs and concepts that are superior to the status quo.
- **Attend relentlessly to execution**, integrating improvement deeds and review in the daily work of the organization, and ensuring that better results are effective, sustained, and spread throughout the organization.

According to IHI, "...every organization achieving exceptional QI results appears to have activated senior leaders in each of the five elements of the Leadership Framework: Vision, Foundation, Will, Ideas, and Execution. If any one of these elements is missing, the process of change can easily stall."[97] IHI identifies deficient will as a common limitation. "Leaders who ignore improvement activity, or fail adequately to support it, send a strong implicit message that improving the quality of care is of secondary importance to other considerations (e.g., financial concerns), a message that we have seen destroying energy and driving resources into activities that have far less impact on patient outcomes."[98] IHI suggests that highly engaged leadership teams working with highly engaged boards in a trusting partnership can be the source of will for the entire organization.

How do senior leaders make this transformation? Most experts agree that three areas of development are needed to support this transformation: senior executive development; board development; and development of capacity to execute a QI strategy. Best practice guidelines in each of these three areas are briefly summarized below. CHFWCNY's work to date in this area has focused on the first area: senior executive development.

Senior Executive Development and the CHFWCNY Leadership Fellows Program

CHFWCNY work in leadership development for QI has focused on the CHFWCNY Leadership Fellows Program. The Leadership Fellows Program aims to develop leaders from western and central New York that will be proficient in the following five key areas recommended by the Institute of Medicine in its 2003 report, Health Professions Education - a Bridge to Quality: delivering patient-centered care; working as part of interdisciplinary teams; practicing evidence-based medicine; focusing on quality improvement; and using information technology. Since 2004, three classes of Fellows have completed the program. The goal of this Program is to develop a regional health care culture that values learning, collaboration, best practice and continuous quality improvement. The program features coursework and convenings focused on collaborative leadership development.

Looking ahead, approaches for expanding leadership development for QI in western and central New York could take several forms. Expanding on CHFWCNY's existing approach, a fourth Leadership Fellows class could be launched with a greater program emphasis on QI. In addition, the Fellows Action Network (FAN - the Leadership Fellows Program alumni network) could be a highly effective target audience for follow-up curriculum on leadership development for QI. Another approach could be to target FAN leaders for participation in a regional QIC aimed at improving QI skills and QI leadership (this QIC for FAN leaders could be structured similarly to the one sponsored by the Minnesota Department of Public Health, described above). In this QIC, home organization teams led by FAN leaders could engage in QI training and a QI project. Or, FAN leaders could form cross-organizational teams in a learning collaborative focused on strategic QI leadership. Fostering QI capacity building and leadership development for QI could become a regional FAN initiative that would support regional QI activity and strengthen the impact of future CHFWCNY QI programs and grants.

Another approach to QI leadership development that CHFWCNY could consider is to support local leaders' participation in other health care fellowship programs (through scholarships or other forms of support). Many state and national foundations sponsor fellowships and programs for health care leadership development. See Appendix D for examples of leadership development fellows programs and alumni networks.

Another approach to regional leadership development for QI is to foster participation in sector-specific leadership training programs. Excellent examples of leadership training programs in New York State include:

- New York State Health Facilities Association's (NYSHFA) Long Term Care Leadership Institute. The Long Term Care Leadership Institute offers administrator and nurse leadership training programs that feature QI as a component of the curriculum.
- Healthcare Association of New York State (HANYS) Academy for Healthcare Leadership Advancement. HANYS' Academy for Healthcare Leadership Advancement is administered in collaboration with the Johnson School of Management at Cornell University. An eight week Cornell certificate program, The Academy curriculum provides participants with the skills and knowledge to effectively lead their organizations in a complex healthcare environment. The Academy curriculum includes strategies for managing and improving quality, patient safety and transparency.

Finally, next generation leadership training is another potential approach to expanding QI capacity and effectiveness. A next generation leadership program with an emphasis on the goal of QI excellence would help developing leaders enter future leadership roles with an orientation toward QI and a skill set for strategic execution. QIC team leaders and other QI champions

could be candidates for a next generation QI leadership training program in western and central New York.

Developing Board Capacity

If a health care organization CEO is ready to execute a strategy with QI excellence as its primary goal, the CEO's first responsibility is to engage his or her Board in this endeavor. Experts agree that boards have a significant responsibility to make better quality of care the organization's top priority. In reality, board members may not come to their position readily equipped to fulfill this role. Board members frequently require training and orientation in order to effectively lead and govern an organization with QI as its strategic priority. One expert summarized, "Work with CEOs and boards - start with governance. If governance is not on board with QI, then QI will not happen." Another concluded, "Better performance only happens when the CEO and the board are committed to achieve QI perfection. Aim to be the best at getting better - this is the goal to pursue."

One of the best, publicly available tools for board development is IHI's Governance Leadership "Boards on Board" How-to Guide.[99] A component of the IHI 5 Million Lives Campaign, Boards on Board is derived from the Framework for Leadership for Improvement (summarized above). Boards on Board recommends the following specific actions for governing boards to take within each of the Framework's five categories:[100]

1. ***Establish the Mission, Vision, and Strategy***
    a. Set direction and monitor performance.
        i. Integrate strategy and quality.
        ii. Monitor the culture of quality and safety.
        iii. Establish aims for safety and quality improvement.

2. ***Build the Foundation for an Effective Leadership System***
    a. Establish an interdisciplinary Board Quality Committee.
    b. Bring knowledgeable quality leaders onto the board.
    c. Set and achieve educational standards for the board members.
    d. Build a culture of real (not pro forma) conversations about improving care at board and committee meetings, with physician and nursing leaders, and with administration.
    e. Allocate adequate resources to ongoing training of employees and medical staff about quality improvement.

3. ***Build Will***
    a. Establish a policy of full transparency about data on quality and safety
    b. Insist on the review of both data and stories from patients and families
    c. Help patients and families tell their stories directly to staff, senior leaders, and the board
    d. Establish policies and practices with respect to errors and injuries that emphasize through communication, respectful practice, disclosure, apology, support, and resolution.
    e. Understand both the current performance of your organization and the performance levels of the best organizations in the world.
    f. Show that you own the problem and are driving the agenda by placing quality first on the board agenda and devoting 25% or more of the board's agenda to it.
    g. Show courage: don't flinch.

4. ***Ensure Access to Ideas***
    a. Boards should ask management four idea-generating questions, when reviewing progress against quality and safety aims:
        i. "Who is the best in the world at this?"
        ii. "Have you talked to them to find out how they do it?"
        iii. "How many ideas have you tried out?"
        iv. "What ideas did our patients and families and front-line staff have for improvement?"

5. ***Attend Relentlessly to Execution***
    a. Establish executive accountability for achievement of aims.
    b. Establish an effective oversight process, including:
        i. Devoting 25% of board meeting time to quality and safety.
        ii. Monitoring your own system-level measures for improvement (rather than being comforted by benchmarks).
        iii. Reviewing data generated weekly, or, at a minimum, monthly.
    c. Ask hard questions, including:
        i. Are we on track to achieve the aim?
        ii. If not, why not? What is the improvement strategy? What are key steps planned toward full-scale execution?

These recommended actions provide a roadmap for boards getting on board with a QI strategic agenda. Taking these recommendations one step further, the Boards on Board Governance Leadership Intervention suggests boards begin by focusing on the following activities:

- Set Aims. Set a specific aim for QI. Make an explicit public commitment to measureable QI that is an organizational priority.
- Get data and hear stories. Begin every Board meeting with an agenda item focus on progress toward QI aims. Put a human face on the story.
- Establish and monitor system level measures. Use organization-wide roll-up measures that are transparent to the entire organization and stakeholders.
- Change the environment, policies and culture.
- Learn - starting with the Board. Develop capability as a board. Learn about how 'best in the world' boards work with executive and physician leaders to improve quality and reduce harm. Set an expectation for similar levels of education and training for all staff.
- Establish executive accountability. Oversee the effective execution of a plan to achieve executive team accountability for clear QI targets.

IHI's Boards on Board intervention is aligned with the recommendations of the National Quality Forum's Safe Practices for Better Health Care - A Consensus Report (2007) and with the National Business Group on Health's guidelines for board engagement in health care. Other organizations with excellent resources and publications in this area include the American Hospital Association Center for Healthcare Governance, the Estes Park Institute, Great Boards, the National Center for Healthcare Leadership, CMS, the National Quality Forum, the Joint Commission, and the Governance Institute.

Support for strategic board development within healthcare organizations working with frail elders and children in communities of poverty in western and central New York could be a powerful improvement strategy that would have long term benefit in elevating the priority of QI as a strategic endeavor across the region. A regional Boards on Board campaign, learning

collaborative or other regional board development program could be actively promoted by CHFWCNY among current grantees, QIC participants and the CHFWCNY Fellows Action Network.

Developing Capacity to Execute a QI Strategy

Recent work by James Reinertsen, MD (IHI Senior Fellow and President of the Reinertsen Group) and colleagues highlights Seven Leadership Leverage Points for Organization-Level Improvement in Health Care.[101] This approach is designed to help the senior leadership team develop strategic goals and a plan to execute on strategic goals, board oversight mechanisms, and organizational capacity for attaining QI excellence. A "to do" list for the CEO and leadership team, the Seven Leadership Leverage Points build the infrastructure and organizational capacity to reinforce the Governance Leadership Intervention (summarized above). The Seven Leadership Leverage Points are as follows:

1. Establish and oversee specific system-level aims at the highest governance level.
2. Develop an executable strategy to achieve the system-level aims and oversee their execution at the highest governance level.
3. Channel leadership attention to system-level improvement, including a focus on personal leadership, leadership systems, and transparency. Include a major emphasis on the power of transparency to drive improvement and change.
4. Put patients and families on the Improvement Team.
5. Make the Chief Financial Officer a Quality Champion.
6. Engage physicians in a shared quality agenda.
7. Build improvement capacity. Continually reinforce the critical need to build capable improvers at every level as an important underpinning for the other six leverage points.

These Seven Leadership Leverage Points form the basis of a new, intensive Executive Quality Academy taught by faculty from IHI, The Reinertsen Group, and leaders from top performing healthcare organizations across the nation. This three day course is designed for participation by the entire health care leadership team (CEO, CFO, clinical leadership, the Board Chair, etc.). The course trains leadership teams to implement Leverage Points 1 through 7, to work and think together as a team focused on whole system improvement and, in addition, focuses on the personal work of senior leaders - what they do with their time, knowing what to do with respect to technical improvement issues, and what critical technical skills senior leaders require are identified along with a team-based plan for capacity improvement among the senior executive team. Other topics covered include leadership concerns such as scale and spread, flow management, waste reduction, and reliability. Executive Quality Academy is an innovative team-based approach to developing leadership capacity to execute a QI strategy.

Key informants commented that CHFWCNY could consider supporting local leaders' participation in Executive Quality Academy or other programs aimed at supporting strategic execution for QI. Another approach could be to organize a local leader collaborative aimed at building strategic leadership capacity through peer learning and sharing of best practices derived from Executive Quality Academy or similar programs. This effort could be organized like a QIC, or modeled after a local leader impact network focused on strategic execution for QI excellence. A third approach could be to convene regional CEOs to hear from their peers in other communities that have embraced and capitalized on QI as a strategic priority. CEOs from organizations participating in Pursuing Perfection or other system-wide QI transformation initiatives could shed light on their vision, strategy and journey in pursuit of perfect care. For example, James Andersen, CEO of Cincinnati Children's Hospital Medical Center is a widely recognized expert speaker on the topic of pursuing perfect care. Mr. Andersen's story about

Cincinnati Children's Hospital's transformation highlights strategic planning focused on family-centered care; significant board involvement and board oversight of quality performance; system-wide QI training; development of a local QI expert resource (the Division of Quality and Transformation); re-organization into 17 hospital business units with accountability for unit quality outcomes; and pursuit of perfect care as a system-wide goal.

Another approach to expanding strategic execution capacity for QI could be to support local health and social service organizations' pursuit of the Malcolm Baldrige Award or other enterprise-wide recognition programs for QI excellence such as the American Health Care Association's (AHCA) Three Step Quality Award that is based on the Baldrige Award criteria. Managed by the U.S. Commerce Department's National Institute of Standards and Technology, the Baldrige Quality Award is given annually by the President of the United States to businesses and to education, health care and nonprofit organizations that apply and are judged to be outstanding in seven areas: leadership; strategic planning; customer and market focus; measurement, analysis, and knowledge management; workforce focus; process management; and results. Congress established the award program in 1987 to recognize U.S. organizations for their achievements in quality and performance and to raise awareness about the importance of quality and performance excellence as a competitive edge. Baldrige Award winners comment on the transformation their organizations undergo by undertaking the Baldrige roadmap to excellence. A western and central New York peer network working in pursuit of Baldrige Award criteria could foster collaborative learning in QI and best practices in organizational excellence. At least one Western New York healthcare organization (Roswell Park Cancer Institute) is currently working toward the Baldrige Award. Elderwood Healthcare at Lakewood, a Western New York long term care facility, was recently awarded the American Health Care Association's Step III Quality Award - the highest level of the AHCA's Quality Award program. Elderwood Healthcare at Lakewood is the first long term care facility in New York state and the fourth in the nation to receive this distinguished award.

Effective leadership initiatives can also target specific areas of focus within health care organizations (instead of a whole-system or whole-organization focus). One example of this approach is the Critical Care Leadership Network (CCLN) in New York City, organized by the Greater New York Hospital Association. The CCLN is composed of executive leadership and interdisciplinary hospital staff who are leaders in the fields of critical care medicine, surgery, and nursing, and are active in critical care initiatives and associations both locally and nationally. The core mission of CCLN is to coordinate a unified approach for delivering critical care services in the New York metropolitan area by sharing and standardizing the implementation of evidence-based practices and the training of clinicians, in an effort to improve patient outcomes in the ICU setting. A CCLN Steering Committee is comprised of 30 members from 14 greater New York hospitals. The Network enhances ICU systems leadership, outcomes and improvement using a collaborative approach. This collaborative strategy could be replicated for ICU's, Emergency Departments, or other clinical focus areas in the region.

<u>Personal Leadership for QI: What does it take?</u>

Research from University HealthSystem Consortium Study (2005) identifies best practice behaviors among inspiring CEOs, board leaders and other senior leaders engaged in organizational QI.[102] According to this research, inspiring leaders possess the five C's - they are:

- Committed to quality and safety (i.e., committed to the idea that "we can do better!")
- Clear in how they articulate commitment. They have clarity of purpose and a personal connection to the QI commitment.

- Courageous. They hold their commitment to safety and quality in spite of great challenges. They take in new ideas and tie it to the mission.
- Curious. Curious leadership is the hallmark of a learning organization; and
- Collaborative. They exhibit a collaborative style of leadership; they support and enforce collaboration as needed.

Demonstrating a commitment to purpose, process and people, these five behaviors are the building blocks of leadership development for QI excellence and organizational QI culture.

Part V. Conclusions and Recommendations

Conclusions and recommendations are presented in three categories:

1. Global conclusions
2. Recommendations for the CHFWCNY Frail Elders program
3. Recommendations for the CHFWCNY Children Living in Communities of Poverty program.

Global Conclusions

Global conclusions from the research and key informant interviews are summarized as follows (key points are highlighted in bold):

1. **QICs are a valuable tool for targeted, team-focused QI and shared learning.**

2. **CHFWCNY should "stay the course" with the QIC approach.** Experts suggest CHFWCNY remain focused and allow the communities serving frail elders and children in communities of poverty to reap the benefits of the QIC approach. In addition, there is more good QIC work that CHFWCNY can do (see Part V. Recommendations).

3. **The cross-sector approach to QICs involving multi-sector or multi-agency teams (an approach pioneered by CHFWCNY) is emerging** to address cross-sector QI challenges such as care transitions, health and mental health issues of youth in Child Welfare, poverty, and other QI challenges involving multiple systems of care.

4. **QICs are powerful, but they should not be CHFWCNY's only QI approach.**

5. **Strategies for spread and sustainability of QIC gains must also be addressed.** Other QI methods may be more beneficial than the QIC approach for fostering spread and sustainability. Other methods may be more cost effective for some topics.

6. **Other QI approaches complementary to the QIC approach can be used to strengthen QIC impact.** Examples include community-based provider coaching and education strategies, shared resource models, shared infrastructure models, place-based QI approaches, and models for improving complex care and coordination.

7. **QI skills training for successful QI and QIC execution are needed. Develop QI skills training into the QIC context and/or as independent activities** in support of broader QI capacity building for the region**.**

8. **Leadership for QI is another development opportunity.** Three areas of development are needed to support QI transformation and leadership: **senior executive development; board development; and development of capacity to execute a QI strategy. Build these programs into the QIC context and/or as independent activities** through the use of peer learning collaboratives and the CHFWCNY Fellows Action Network.

9. Efforts to address social determinants of health, and comprehensive place-based approaches to QI and population health (like Aligning Forces for Quality in Western New York) are emerging trends among funders.

10. **There can be a role for the QIC approach in population health focused, place-based initiatives, especially to address more challenging care coordination issues** faced by frail elders and children in communities of poverty. This is a leading-edge area of QI and QIC development - CHFWCNY could help demonstrate this approach in WNY.

11. It will be important to **evaluate CHFWCNY's cross-sector QIC approach** in order to inform future grantmaking and to inform the field.

12. **Western New York in particular would benefit in the near future from a regional strategic planning process to include key stakeholders from the community** involved in Aligning Forces for Quality, the Western New York Community Health Planning Initiative, the Improving Quality Improvement leadership advisory group, and others who are working on regional QI initiatives over the next three to five years. With coordinated planning and a goal of creating sustainable QI infrastructure and capacity, Western New York is poised (through a powerful and timely alignment of initiatives and resources) to become a model for the nation in QI innovation and health improvement.

Key informant interviews were consistent in the feedback that QICs are important vehicles for change, however they should not be a provider's (or a foundation's) sole strategy for improvement. "QICs should be one tool in the QI toolkit". Other critical advice about the QIC approach (and more broadly for CHFWCNY in its application of the QIC approach) is: "Watch out for limited attention span among constituents. Focus on a few topics and programs. Don't do too much too fast." QIC's take time and effort to succeed. Experts suggest CHFWCNY should remain focused and allow the communities serving frail elders and children in communities of poverty to reap the benefits of the QIC approach.

Recommendations for the CHFWCNY Frail Elders Program

Figure 3 summarizes key informant interview/expert recommendations for QIC topics most needed and most likely to improve the care of frail elders. Expert recommendations considered in the context of emerging QIC innovations and state and local trends and opportunities suggest themes for CHFWCNY to consider for future QIC programs serving frail elders.

One important take-away from key informant interviews was the strong recommendation that CHFWCNY stay the course with important QIC work already underway. In particular, the importance of doing more work on transitions and end of life care was stressed. One respondent commented, "I bet they've only scratched the surface with these two areas." Others noted the time it takes to achieve lasting change, and that a single QIC cycle may not be enough for institutionalization of improvement. Also, "For a QIC approach to succeed in improving care for a population, sequential build (of QIC efforts) within a community is key."

The recommendation to "stay the course" with current QIC programs is further supported by the intense, national focus these areas are currently receiving. As a result of national efforts to improve patient safety during transfers (e.g., the Joint Commission on Accreditation of Healthcare Organization's increased focus on medication reconciliation and discharge planning and the National Quality Forum's examination of performance measures for post-hospitalization care coordination) attention to transitional care is increasing. Last year, the National Quality Forum's National Priorities Partnership identified Palliative Care, Care Coordination, and Patient and Family Engagement as national priorities and goals for achieving healthcare reform in the

next five years. CHFWCNY QIC programs can build on improvement momentum, best practices and resources forthcoming in these areas.

Experts identified potential QIC strategies for CHFWCNY to consider in three areas - building on existing programs:

- Reducing hospital readmissions. In addition to continuing work now underway in CHFWCNY's Family Caregivers QIC, Dr. Eric Coleman and others recommend taking CHFWCNY's QIC work to the next level by focusing on reducing hospital readmissions as a critical component of improving care transitions and care coordination. Hospital readmissions occur when care coordination and proper transitions of care break down. A new IHI Toolkit soon-to-be-released (co-authored by Dr. Coleman, supported by the Commonwealth Fund) will support QIC's in reducing readmissions and improving related care transitions. In addition, experts anticipate that providers may soon have a powerful financial incentive - lower Medicare reimbursement rates - associated with readmission events. A QIC with an aim to reduce readmissions and improve care transitions could:

    - Respond to Western New York (WNY) provider needs assessment feedback identifying better care coordination and "handoffs" as important areas of focus.
    - Take advantage of emerging evidence-based tools and best practice information.
    - Further CHFWCNY's regional efforts to forge working partnerships across health care providers for better coordination of care and services, and to support patients, families and caregivers.

- Palliative Care. Two years have passed since the completion of CHFWCNY's QIC involving interdisciplinary teams focused in adopting principles of palliative care to frail elder care. Since that time, national recognition of the importance of palliative care has grown. Palliative care was identified as one of six priority areas of needed health care reform by the NQF National Priorities Partnership. The National Quality Forum (NQF) recently released Preferred Palliative Care Practices. Training, adoption and dissemination strategies to spread palliative care are also further developed. WNY providers identified palliative care, promotion of advance directives and family caregiving as important needs to address. Further CHFWCNY QIC work in this area could be timely and beneficial.

- Family Caregiving. CHFWCNY is beginning its work in this area by promoting Next Step in Care - a caregiver-focused approach to better transitions of care. Health literacy improvement for frail elders and caregivers could also be addressed in future QIC cycles.

Improving chronic illness care

Other themes and opportunities derived from expert recommendations considered in the context of emerging QIC innovations, trends and opportunities point to the QIC approach as a vehicle for improving chronic illness care among frail elders. Potential QIC topics in this area could address multiple chronic conditions, elder-appropriate community engagement strategies, family caregiver approaches, and care coordination. A CHFWCNY effort in this area could capitalize on new and existing programs. For example, a new statewide initiative focused on diabetes care improvement (funded by the New York State Health Foundation) is just underway. Structured like the IHI Campaign, funded nodes (including the American College of Physicians, New York Diabetes Coalition, Community Health Care Association of New York State, hospital associations, and others) will support regional provider groups and coalitions providing technical

assistance and (potentially) using a QIC approach. Together with the P^2 Collaborative of Western New York's initiative on diabetes prevention (part of RWJF's Aligning Forces for Quality effort in WNY), the region is well positioned to address improvement in diabetes care through a regional collaborative approach. A frail elders program emphasis on diabetes care could build on this activity, fill a gap, and advance regional chronic disease care.

Improving medication management

Another topic that may be ripe for regional QIC activity is improving medication management for frail elders. Due to the fact that many frail elders have complex, daily medication regimes, elders are at significant risk of drug interactions and other challenges associated with polypharmacy, patient compliance, health literacy, and poorly integrated systems and providers not able to reconcile or properly manage patient prescribing activity. WNY providers identified medication reconciliation and medication management as important regional priorities. Medication management ties in to transitions of care and family caregiver support - areas of current CHFWCNY QIC activity.

QI in Long Term Care

The Commonwealth Fund's Advancing Excellence in America's Nursing Homes presents another potential QIC opportunity. Like the IHI Campaign, Advancing Excellence in America's Nursing Homes sets goals and targets for specific quality of care issues in the nursing home (and other long term care) settings (including reducing pressure ulcer, use of physical restraints, improving pain management, resident-centered care, QI program enhancement and staff retention) with demonstrated/evidence-based interventions. A QIC in this area could build from Improving Care and Caring - a long term care QI training program ongoing in WNY at this time. Sponsored by CHFWCNY and the P^2 Collaborative, Improving Care and Caring curriculum is based in part on Advancing Excellence in America's Nursing Homes.

Elder appropriate Emergency Department Care

Lastly, the Western New York Community Health Planning Initiative's focus on inappropriate Emergency Department (ED) use could provide context for a QIC effort on appropriate care for frail elders in the ED. This is an emerging frail elders QI topic (development is supported by the Commonwealth Fund). A QIC in this area could have cross-setting, cross-disciplinary potential spanning ED, nursing home, home health and family caregivers.

Recommendations for CHFWCNY Children Living in Communities of Poverty Program

Figure 5 summarizes key informant interview/expert recommendations for QIC topics most needed and most likely to improve the care of children living in communities of poverty. Expert recommendations considered in the context of emerging QIC innovations and state and local trends and opportunities suggest themes for CHFWCNY to consider for future QIC programs serving children in communities of poverty. Ripe areas for a QIC approach include preventive and behavioral health screening, chronic disease management and medical home.

Preventive screening age 0-5

QICs involving improvement of developmental screening and surveillance processes particularly for children up to age five are emerging. Examples summarized above include the Bright Futures Training Intervention Project, the Healthy Development Learning Collaborative, and a partnership of the New York State Department of Health Division of Family Health together with the American Academy of Pediatrics (AAP) and other physician organizations' pilot QIC in WNY. Each of these QICs seeks to improve preventive and developmental care for children up to five

years of age by bringing parents, child health professionals and community resources together to ensure a healthy development trajectory and readiness for school for all children. Strategies implemented using a QIC approach include preventive services prompting systems, structured developmental assessments, recall/reminder systems, community linkages, identification of children with special health care needs, and assessment of parents' strengths and needs. At this time, the New York State Department of Health in collaboration with AAP is developing a spread strategy and a how-to manual to facilitate adoption of the QIC intervention beyond five pilot sites in WNY.

Adolescent preventive screening

Bright Futures-based adolescent preventive screening guideline implementation represents another potential QIC opportunity. Groundbreaking work in Vermont applies a QIC approach to improvements in preventive screening, physician communication skills, and referral coordination. Physician groups in this QIC receive training in use of a strength-based approach to risk identification and counseling known as the Circle of Courage. Changing the paradigm of adolescent risk identification screening and counseling from a framework of 'what's not right" to one of "what is right, and how can we do better?" is a powerful approach to communication drawing upon the concepts of relationship/belonging, competence, independent decision making, and empathy.

Chronic disease management

Chronic disease management and prevention is another potential QIC activity - particularly for asthma and diabetes. For example, a community-based CHFWCNY QIC addressing asthma among children in communities of poverty could build upon ongoing asthma regional planning efforts in WNY, school health center programs, and Department of Health QIC pilot programs underway in WNY working to improve care of children with asthma. A similar set of synergistic efforts exists for diabetes, suggesting the possibility of a CHFWCNY supported, community-focused diabetes QIC building on existing regional programs.

Medical Home

A final potential QIC topic for consideration - medical home - focuses on patient-centered, accessible, coordinated care. According to the AAP, a medical home is "accessible, family-centered, continuous, comprehensive, coordinated, compassionate and culturally competent."[103] According to the Commonwealth Fund's definition, medical home is characterized by a regular doctor or source of care; easy access to the provider by telephone; easy access to health advice on evenings and weekends or whenever the provider is closed; and visits with the provider that occur conveniently for patients, are on time and are efficient.[104] Primary care settings that provide a medical home coordinate both vertically, with pediatric specialists and other elements of the health care system, and horizontally, with community resources such as mental health agencies, schools, and family support organizations. Medical home is particularly important for children with special health care needs, defined by the Maternal Child Health Bureau as those at increased risk for chronic physician, developmental, behavioral, or emotional conditions that require health and related services of a type or amount beyond that required of children generally - representing 15-18% of the childhood population and 80% of the health care dollars spent annually for all children.[105] Medical home is not a new concept. Community health centers, for example, have applied the medical home model in practice for many years. Increasingly, as fragmentation of the health care system leads to greater challenges with care coordination, the importance of a comprehensive medical home is a growing, recognized need, especially for at-risk populations such as children living in communities of poverty.

Several QICs have successfully supported adoption of medical home in pediatric ambulatory care practice. Examples (outlined above) include the NICHQ Medical Home Improvement Collaboratives and the Minnesota Medical Home Learning Collaborative. Both Breakthrough Series QICs, these QICs applied a medical home intervention based on six domains: organizational capacity, management of chronic conditions, coordination of care, community outreach, data management, and QI - having ongoing processes that track and measure progress and outcomes and making those processes part of the practice culture. In both QICs, teams came together to plan changes, implement changes, study the impact, and refine their systems. Using this approach, teams have been able to support practice-level improvements in care based on the medical home model, including reductions in hospitalizations, emergency room visits, and duplication of tests and procedures.

Key informant interviews suggest improvement toward "medical home-ness" will be an increasingly important pediatric and ambulatory QI trend over the next few years. For example, the Commonwealth Fund recently funded The MacColl Institute/ICIC to support four U.S. regional coordination centers that will in turn provide coaching, technical assistance and support to twelve clinic practices in their region (50 clinics in total) with the goal of transforming clinics into medical homes. Regional coordination centers serving as technical assistance hubs will support local practices working collaboratively to implement medical home.

Medical home interventions (QIC and other) take the Chronic Care Model to the next level, adding family involvement in care and services from the community coordinated through the medical practice to support the whole patient, in a patient-centered way. Experts believe that the medical home model holds promise not only for medical practices that serve children with special health care needs, but also for other higher-risk pediatric patients, adults with chronic illness, frail elders, and others requiring enhanced care coordination. Experts do caution that medical home interventions are large undertakings - and could potentially be addressed by key component area over time. Experts also advise that medical home implementation (QIC or other) will likely benefit from coaching and technical assistance to accelerate adoption and systems change.

Potential next steps for CHFWCNY

CHFWCNY's QI strategic sharpening process is well timed to synchronize with and capitalize on major regional health improvement initiatives now underway in western and central New York. The region is poised for great QI undertakings over the next few years. In addition to important statewide programs and initiatives outlined above, Western New York in particular is home to several major health care improvement initiatives, including RWJF's Aligning Forces for Quality. The timing is opportune for QI strategic planning.

As a first step, CHFWCNY's QI strategic plan (aided by findings and recommendations included in this report) can be developed and vetted with key constituents such as the Foundation board, grantee community, and the provider and agency community serving frail elders and children in communities of poverty in western and central New York. Next - what is ultimately needed - is a regional QI strategic plan (one for Western New York and one for Central New York). Due to the intensity of local QI activity in Western New York, strategic planning for regional QI and population health improvement will have greater impact if it is developed in coordination with the P^2 Collaborative, RWJF/Aligning Forces for Quality, the Improving Quality Improvement in WNY QI senior leaders team, the Western New York Community Health Planning Initiative, and other state and regional stakeholders.

Once a QI strategic plan is mapped out for the region, CHFWCNY's three to five year plan for QI programs addressing frail elders and children living in communities of poverty can be finalized. A component of the region's larger strategic plan, CHFWCNY's plan for advancing QI will advance the QI goals of the region and specifically address the health and health care needs of CHFWCNY target populations through innovative, collaborative best practices.

References

1. *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement.* IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. Available on http://www.ihi.org/IHI/Results/WhitePapers/TheBreakthroughSeriesIHIsCollaborativeModelforAchieving+BreakthroughImprovement.htm.

2. Institute Of Medicine, National Academy of Sciences. (2003). *Health Professions Education: A Bridge to Quality*. Washington: National Academy Press.

3. Mittman BS. Improving patient care. Creating the evidence base for quality improvement collaboratives. *Ann Intern Med.* 2004;140(11):897-901.

4. *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement.* IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003.

5. Wilson T, Berwick DM, Cleary PD. What do collaborative improvement projects do? Experience from seven countries. *Jt Comm J Qual Saf.* 2003;29:85-93.

6. Schouten LM, Hulscher ME, van Everdingen JJ, Huijsman R, Grol RP. Evidence for the impact of quality improvement collaboratives: systematic review. *BMJ*. 2008;336:1491-4.

7. Lindenauer PK. Effects of quality improvement collaboratives. *BMJ.* 2008;336:1448-1449.

8. Schouten (2008).

9. Newton PJ, Davidson PM, Halcomb EJ, Denniss AR, Westgarth F. An introduction to the collaborative methodology and its potential use for the management of heart failure. *J Cardiovasc Nurs.* 2006;21(3):161-8.

10. Improving Chronic Illness Care. http://www.improvingchroniccare.org/.

11. Institute for Healthcare Improvement. *Health Disparities Collaboratives*. Retrieved from http://www.ihi.org/IHI/Topics/ChronicConditions/AllConditions/Resources/HealthDisparitiesCollaboratives.htm.

12. Pronovost PJ, Berenholtz SM, and Needham DM. Translating evidence into practice: a model for large scale knowledge translation. *BMJ.* 2008;337:a1714.

13. Koll BS, Straub TA, Jalon HS, Block R, Heller KS, Ruiz RE. The CLABs collaborative: a regionwide effort to improve the quality of care in hospitals. *Jt Comm J Qual Saf*. 2008;34(12):713-23.

14. Gould DA, Lynn J, Halper D, Myers SK, Simon L, Holmes H. The New York City Palliative Care Quality Improvement Collaborative. *Jt Comm J Qual Saf*. 2007;33(6):307-16.

15. Improving Chronic Illness Care. http://www.improvingchroniccare.org/.

16. Daniel DM, Norman J, Davis C et al. A state-level application of the chronic illness breakthrough series: results from two collaboratives on diabetes in Washington State. *Jt Comm J Qual Saf*. 2004;30(2)69-79.

17. Benedetti R, Flock B, Pedersen S, Ahern M. Improved clinical outcomes for fee-for-service physician practices participating in a diabetes care collaborative. *Jt Comm J Qual Saf.* 2004;30(4):187-194.

18. Sperl-Hillen J, O'Connor PJ, Carlson RR, Lawson TB, Halstenson C, Crowson T, Wuorenma J. Improving diabetes care in a large system: An enhanced primary care approach. *Jt Comm J Qual Improv.* 2000;26(11):615-622.

19. O'Connor P, Rush WA, Peterson J, et al. Continuous quality improvement can improve glycemic control for HMP patients with diabetes. *Arch Fam Med*. 1996;5:502-506

20. Glasgow RE, Funnell MM, Bonomi AE, Davis C, Beckham V, Wagner EH. Self-management aspects of the improving chronic illness care breakthrough series: implementation with diabetes and heart failure teams. *Ann Behav Med*. 2002;24(2):80-7.

21. Schonlau M, Mangione-Smith R, Rosen M, Louis TM, Cretin S, Keeler E. An Evaluation of an Adult Asthma BTS Collaborative and the Effect of Patient Self-Management. *Annals of Family Medicin.* 2005;3:200-208.

22. Meredith LS, Mendel P, Pearson M et al. Implementation and Maintenance of Quality Improvement for Treating Depression in Primary Care. *Psychiatric Services.* 2006;57:48-55.

23. Asch SM, Baker D, Keesey J, Broder MS, Schonlau M, Rosen M, Wallace P, Keeler EB. Does the Collaborative Model Improve Care for Chronic Heart Failure? *Medical Care*. 2005;43(7):667-675.

24. Baker DW, Asch SM, Keesey JW, Brown JA, Chan KS, Joyce G, Keeler EB. Differences in Education, Knowledge, Self-Management Activities, and Health Outcomes for Patients with Heart Failure Cared for Under the Chronic Disease Model: The Improving Chronic Illness Care Evaluation. *J Card Fail*. 2005;11(6):405-13.

25. Newton (2006).

26. Glasgow (2002).

27. Doran K, Henry S, Anderson B. Breakthrough change for adult cardiac surgery in a community-based cardiovascular program. *Qual Manag Health Care.* 1998;6:29-36.

28. Lain J, Young C, Dworkin G, Rackstein A. Improving efficiencies and reducing costs in adult cardiac surgery: a team approach. *Qual Manag Health Care*. 1998;6:37-41.

29. Montoye CK, Mehta RH, Baker PL, et al. A rapid-cycle collaborative model to promote guidelines for acute myocardial infarction. J*oint Comm J Quality Saf*. 2003;29:468-478.

30. Stoeckle-Roberts S, Reeves MJ, Jacobs BS, Maddox K, Choate L, Wehner S, Mullard AJ. Closing gaps between evidence-based stroke care guidelines and practices with a collaborative quality improvement project. *Jt Comm J Qual Saf*. 2006;32(9):517-27.

31. Association for Professionals in Infection Control. http://www.apic.org/.

32. IHI Campaign website. http://www.ihi.org/IHI/Programs/Campaign/.

33. Pronovost PJ, Needham DM, Berenholtz SM, et al. An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med*. 2006;355(26):2725-32.

34. Koll BS, Straub TA, Jalon HS, Block R, Heller KS, Ruiz RE. The CLABs collaborative: a regionwide effort to improve the quality of care in hospitals. *Jt Comm J Qual Patient Saf*. 2008;34(12):713-23.

35. Bonello RS, Fletcher CE, Becker WK, Clutter KL, Arjes SL, Cook JJ, Petzel RA. An intensive care unit quality improvement collaborative in nine Department of Veterans Affairs hospitals: reducing ventilator-associated pneumonia and catheter-related bloodstream infection rates. *Jt Comm J Qual Saf*. 2008;4(11):639-45.

36. Bonello (2008).

37. Leape LL, Kabcenell AI, Gandhi TK, Carver P, Nolan TW, Berwick DM. Reducing adverse drug events: lessons from a breakthrough series collaborative. *Jt Comm J Qual Improv.* 2000;26(6):321 - 31.

38. Weeks WB, Mills PD, Dittus RS, Aron DC, Batalden PB. Using an improvement model to reduce adverse drug events in VA facilities. *Jt Comm J Qual Improv.* 2001;27:243-54.

39. Farbstein K, Clough J. Improving medication safety across a multihospital system. *Joint Comm. Qual Improv*. 2001;27:123-137.

40. Meisel S, Sershon L, White D. Reducing adverse drug events and medication errors using rapid cycle improvement. *Qual Manag Health Care*. 1998;6:15-28.

41. Womer R, Tracey E, Soo-Hoo W, Bickery B, DiTaranto S, Barnsteiner J. Multidisciplinary systems approach to chemotherapy safety: rebuilding processes and holding the gains. *J Clin Oncol.* 2002;20:4705-4712.

42. Kerr D, Bevan H, Gowland B, Penny J, Benvick D. *Redesigning cancer care.* BMJ. 2002;324:164-166.

43. Baier RR, Gifford DR, Lyder CH, Schall MW, Funston-Dillon DL, Lewis JM, Ordin DL. Quality improvement for pressure ulcer care in the nursing home setting: the Northeast Pressure Ulcer Project. *J Am Med Dir Assoc*. 2003;4(6):291-301.

44. National Nursing Home Improvement Collaborative. http://www.qualishealth.org/qi/collaboratives/case-study-nnhic.cfm

45. Baier RR, Gifford DR, Patry G, Banks SM, Rochon T, DeSilva D et al. Ameliorating pain in nursing homes: a collaborative quality-improvement project. *J Am Geriatr Soc.* 2004;52(12):1988-95.

46. Cleeland R, Reyes-Gibby C, Schall M, et al. Rapid improvement in pain management: the Veterans Health Administration and the Institute for Healthcare Improvement Collaborative. *Clin J Pain.* 2003;19:298-305.

47. Gould (2007).

48. Lynn J., et. al, Quality Improvements in end of life care: insights from 2 collaboratives. *Jt Comm J Qual Improv*. 2000;26:254-267.

49. Lynn, J, Nolan K et al. Reforming Care for Persons Near the end of Life: the promise of quality improvement. *Ann Intern Med*. 2002;137:117-122.

50. Gould (2007).

51. Robert Wood Johnson Foundation. http://www.rwjf.org/.

52. The National Coalition of Home Care and the Institute for Healthcare Improvement. (2002). *Curing the System: Stories of Change in Chronic Illness Care*. Retrieved from http://www.ihi.org/ihi/uploads/act3finalchronic.pdf.

53. Improving Care for Patients with Long Term Conditions - A Review of U.K. and International Frameworks. National Health Service Institute. http://www.clingov.nscsha.nhs.uk

54. Improving Chronic Illness Care. http://www.improvingchroniccare.org/.

55. National Initiative for Children's Health Care Quality. http://www.nichq.org/ .

56. Mangione-Smith R, Schonlau M, Chan KS, Keesey J, Rosen M, Louis TA et al. Measuring the effectiveness of a collaborative for quality improvement in pediatric asthma care: does implementing the chronic care model improve processes and outcomes of care? *Ambul Pediatr.* 2005;5(2):75-82.

57. National Initiative for Children's Health Care Quality. Spread of the Medical Home Concept. Comprehensive Final Report to the Maternal and Child Health Bureau. 2005. http://www.nichq.org.

58. Schiff, JS, Ricketts A. The Minnesota Medical Home Learning Collaborative: a step to improving care for Minnesota's children with special health care needs. *Minn Med*. 2006;89(1):51-4

59. Vermont Child Health Improvement Project. (2006). *Improving Prenatal Care in Vermont*. Retrieved from https://www.med.uvm.edu/vchip/TB1+BL+I+C.asp?SiteAreaID=643.

60. Lannon CM, Flower K, Duncan P, Moore KS, Stuart J, Bassewitz J. The Bright Futures Training Intervention Project: implementing systems to support preventive and developmental services in practice. *Pediatrics*. 2008;*122*(1):e163-71.

61. Young PC, Glade GB, Stoddard GJ, Norlin C. Evaluation of a learning collaborative to improve the delivery of preventive services by pediatric practices. *Pediatrics*. 2006;117(5):1469-76.

62. Vermont Child Health Improvement Project. (2005). *Healthy Development Learning Collaborative*. Retrieved from https://www.med.uvm.edu/vchip/TB1+BL+I+C.asp?SiteAreaID=650.

63. Lannon (2008).

64. Pierce-Bulger M, Nightswander T, Nutaqsiivik. An approach to reducing infant mortality using quality improvement principles. *Qual Manag Health Care.* 2001;9(3):40-6.

65. Horbar JD, Rogowski J, Plsek PE, Delmore P, Edwards WH, Hocker J et al. Collaborative quality improvement for neonatal intensive care. *Pediatrics*. 2001;107(1):14-22:-22.

66. Horbar JD, Carpenter JH, Buzas J, Soll RF, Suresh G, Bracken MB et al. Collaborative quality improvement to promote evidence based surfactant for preterm infants: a cluster randomised trial. *BMJ*. 2004; 329(7473):1004.

67. Rogowski JA, Horbar JD, Plsek PE, Baker LS, Deterding J, Edwards WH et al. Economic implications of neonatal intensive care unit collaborative quality improvement. *Pediatrics* 2001;107(1):23-29.

68. Vermont Oxford Network. http://www.vtoxford.org/.

69. National Association of Children's Hospitals and Related Institutions (NACHRI). http://www.childrenshospitals.net/AM/Template.cfm?Section=Blood_Stream_Infections_Project.

70. Sharek PJ, McClead RE Jr, Taketomo C, Luria JW, Takata GS, Walti B, Tanski M, Nelson C, Logsdon TR, Thurm C, Federico F. (2008). An intervention to decrease narcotic-related adverse drug events in children's hospitals. *Pediatrics*. 2008;122(4):e861-6.

71. Clark P, Buchanan J, Legters L. Taking action on racial disproportionality in the child welfare system. *Child Welfare*. 2008;87(2):319-34.

72. Improving Chronic Illness Care Evaluation (ICICE): A RAND Project. *Findings*. Retrieved from http://www.rand.org/health/projects/icice/findings.html.

73. Chin MH, Cook S, Drum ML et al. Improving Diabetes care in Midwest Community Health Centers with the Health Disparities Collaborative. *Diabetes Care*. 2004;27(1):2-8.

74. SQUIRE Guidelines (Standards for Quality Improvement Reporting Excellence). http://www.squire-statement.org/.

75. .Wagner EH. Chronic Disease management: What will it take to improve care for chronic illness? *Effective Clinical Practice*. 1998; 1:2-4.

76. *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement.* IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003.

77. Institute for Healthcare Improvement 100,000 Lives Campaign: http://www.ihi.org/IHI/Programs/Campaign/FAQsAbout100000LivesCampaign.htm

78. Boushon B, Provost L, Gagnon J, Carver P. Using a virtual breakthrough series collaborative to improve access in primary care. *Jt Comm J Qual Saf*. 2006;32(10):573-84.

79. National Initiative for Children's Health Care Quality. Spread of the Medical Home Concept. Comprehensive Final Report to the Maternal and Child Health Bureau. 2005. http://www.nichq.org.

80. Pronovost PJ, Needham DM, Berenholtz SM, et al. An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med*. 2006;355(26):2725-32.

81. Pronovost PJ, Berenholtz SM, and Needham DM. Translating evidence into practice: a model for large scale knowledge translation. *BMJ.* 2008;337:a1714.

82. Ovretveit J, Bate P, Cleary P, Cretin S, Gustafson D, McInnes K et al. Quality improvement learning collaboratives. *Qual Saf Health Care.* 2002;11:345-51

83. Ovretveit (2002).

84. Mills PD, Weeks WB. Characteristics of successful quality improvement teams: lessons from five collaborative projects in the VHA. *Jt Comm J Qual Saf.* 2004;30:152-62.

85. Institute for Healthcare Improvement. (2004). *Assessment Scale for Collaboratives*. Retrieved from http://www.ihi.org/NR/rdonlyres/84B476B5-0C6E-48F6-8B7F-F86EB155EA06/665/AssessmentScaleforCollaboratives1.pdf.

86. Judge et. al. (2007). *Factors Contributing to Sustaining and Spreading Learning Collaborative Improvements: Qualitative Research Study Findings*. The Primary Care Development Corporation. http://www.pcdcny.org/resources/documents/CWFsustainabilityandspreadwebsitearticle-FINAL.pdf.

87. Institute of Medicine. (2001). *Crossing the Quality Chasm: A New Health System for the Twenty-first Century*. Washington: National Academy Press.

88. The Commonwealth Fund Commission on a High Performance Health System. The Path to a High Performance U.S. Health System: A 2020 Vision and the Policies to Pave the Way. The Commonwealth Fund, February 2009. Retrieved from http://www.commonwealthfund.org/Content/Publications/Fund-Reports/.

89. AHRQ Innovations Exchange Website: http://www.innovations.ahrq.gov/index.aspx.

90. Ibid.

91. Robert Wood Johnson Foundation. *Aligning Forces for Quality. Quality/Equality*. http://www.rwjf.org/qualityequality/af4q/index.jsp.

92. Mittman B. (2008). Innovations Improve Complex Care for Seniors. Retrieved March 2, 2009, from http://www.innovations.ahrq.gov/content.aspx?id=1696&tab=2.

93. John A Hartford Foundation. *Impact*. Webpage: http://www.jhartfound.org/program/impact.htm.

94. Vickrey BG, et. al. Effect of a disease management intervention on quality and outcomes of dementia care: a randomized controlled trial. *Ann Intern Med.* 2006;145(10):713-26.

95. Institute for Healthcare Improvement: http://www.ihi.org.

96. Institute for Healthcare Improvement. *A Framework for Leadership of Improvement*. 2006. http://www.ihi.org/NR/rdonlyres/E0B13EEA-71FE-41A9-9616-3977A0EB14FD/2813/IHILeadershipFramework_FEB2006versionFINAL.pdf

97. Million Lives Campaign. Getting Started Kit: *Governance Leadership "Boards on Board" How-to Guide*. Cambridge, MA: Institute for Healthcare Improvement; 2008. (Available at http://www.ihi.org)

98. Ibid.

99. Ibid.

100. Ibid.

101. Reinertsen JL, Bisognano M, Pugh MD. *Seven Leadership Leverage Points for Organization-Level Improvement in Health Care (Second Edition).* IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2008. (Available at http://www.ihi.org).

102. University HealthSystem Consortium. https://www.uhc.edu/home.htm.

103. American Academy of Pediatrics. *Children's Health Topics: Medical Home*. Webpage: http://www.aap.org/healthtopics/medicalhome.cfm.

104. Western New York Health Care Safety-Net Assessment. Report to CHFWCNY by John Snow, Inc. February 2008. (Available at www.chfwcny.org).

105. National Initiative for Children's Health Care Quality. Spread of the Medical Home Concept. Comprehensive Final Report to the Maternal and Child Health Bureau. 2005. http://www.nichq.org.

106. CHFWCNY Health Leadership Alumni Feasibility Report. Prepared by the University of California, San Francisco, Center for the Health Professions. June 2007 (Available at www.chfwcny.org).