

Implementation Guide for Public Health Practitioners



The Residency Program Collaborative and
Community Health Center Collaborative



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National Center for Chronic Disease Prevention and Health Promotion
Division for Heart Disease and Stroke Prevention



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Commonly Used Acronyms

CCM	Chronic Care Model
CDC	Centers for Disease Control and Prevention
DHDSP	Division for Heart Disease and Stroke Prevention
EHR	Electronic Health Record
IVD	Ischemic Vascular Disease
NCQA	National Committee for Quality Assurance
PAFP	Pennsylvania Academy of Family Physician
PCMH	Patient-centered medical home model

I. Introduction

The purpose of this implementation guide is to describe key lessons learned from the evaluation of the Pennsylvania Academy of Family Physician's (PAFP's) Residency Program Collaborative and Community Health Center Collaborative (hereafter referred to as the RPC/CHCC). This document is intended for public health practitioners who are interested in using a quality improvement learning collaborative model to better understand how to implement this approach within their communities. Using lessons learned from the evaluation, this document includes considerations when trying to replicate this approach in different settings and with different audiences.

The document is organized into five main sections:

1. Introduction
2. Getting a Residency Program Collaborative or Community Health Center Collaborative Started in Your Community
3. Core Elements of the RPC/CHCC
4. Program Monitoring and Evaluation
5. Conclusion

All references are included at the end of the document and a glossary of key terms presented in this document is included in Appendix A.

Readers are encouraged to consider the individual needs and assets of their specific target audience, as well as the unique characteristics of their organizational setting. These considerations will allow practitioners to tailor the delivery of core elements as needed to better adjust the program to a specific context.





Background

Hypertension (commonly referred to as high blood pressure) affects about 1 in 3 U.S. adults—an estimated 68 million.¹ Despite many efforts in public health, rates of hypertension in the United States have remained steady over the past 10 years with no sign of decline, and it has had a great impact on the U.S. health care system.² Although there are a number of evidence-based strategies for effectively managing hypertension, the condition remains uncontrolled for a notable proportion of patients with a hypertension diagnosis.³ The Million Hearts® Initiative goal to achieve $\geq 70\%$ control among U.S. adults with a hypertension diagnosis, underscores the need to identify clinical practice, policy, and systems-level strategies that promote hypertension control⁴ In 2010, a report by the Institute of Medicine entitled “A Population-based Policy and Systems Change Approach to Prevent and Control Hypertension” called for the use of systems change approaches to improve hypertension control.⁵

What Is a Systems Approach in Public Health?

Compared with interventions that focus on affecting change at the individual level, systems-focused interventions target change and improvements at an organizational level.

With these priorities in mind, the Centers for Disease Control and Prevention’s (CDC’s) Division for Heart Disease and Stroke Prevention (DHDSP) embarked upon a series of evaluation projects to better understand how systems strategies might effectively bridge the gap between patients and providers and improve hypertension control. Using the findings from a pre-evaluation assessment, DHDSP and a panel of experts selected the Program Collaborative and Community Health Center Collaborative to participate in a rigorous evaluation. The program’s processes and outcomes were assessed to better illuminate the promise of this system-level strategy, along with its potential for population-level hypertension control and improvement in other health outcomes.

This document has been designed with public health practitioners in mind and presents recommendations learned from the evaluation of the RPC/CHCC model.

Program Overview

The RPC/CHCC was launched in June 2010 as a statewide, quality improvement learning collaborative for primary care by the PAFP. Its main purpose is to bring together primary care providers, residents, clinical support staff, and administrative staff from residency programs and community health centers to learn and share strategies for practice transformation in a primary care setting. Using the Chronic Care Model (CCM), the patient-centered medical home model (PCMH), and team-based care as theoretical frameworks, the RPC/CHCC aims to accomplish systems change in primary care practices by teaching quality improvement and patient-centeredness to primary care staff and assisting practices in becoming National Committee for Quality Assurance (NCQA) PCMH recognized. The collaborative requires participating practices to create quality improvement (QI) teams, which include at least one physician, one clinical support staff member (e.g., nurse, medical assistant), and one administrative staff member. The QI team participates in key collaborative activities and works to improve the delivery of care within their respective practice.

As depicted in the program logic model located in Appendix B, the RPC/CHCC involves direct implementation of activities at both the program and team levels, and indirect implementation of activities at the practice level. These activities are intended to impact outcomes at the program, team, practice, and patient levels.

What Is a Quality Improvement Learning Collaborative for Primary Care?

A quality improvement learning collaborative is an educational model that brings together individuals representing different primary care practices to work together on specific clinical areas—guided by experts in process improvement—to facilitate the sharing and dissemination of effective strategies to redesign their health care systems, become more patient-focused, and improve the quality of care delivered to patients.

The ultimate goal of the RPC/CHCC is to enhance the delivery of health care by making PCMH the standard model of care and to improve population-level changes in chronic disease outcomes (e.g., high blood pressure).

Why Consider This Model?

Through conducting the rigorous evaluation of the RPC/CHCC, CDC was able to identify the impact of the program on improving practice-level outcomes. This was supported by the following findings:

- Data from a self-report survey administered over three time periods to measure practice transformation's efforts revealed significant improvements in organizational and leadership factors affiliated with the PCMH transformation process.
- Practices that participated in a higher number of collaborative activities (e.g., Live Learning Sessions) were more likely to achieve NCQA PCMH recognition.
- Participating practices saw significant improvements in performance in diabetic process measures from baseline to the end of the analysis period, including performance measures for eye exams, eye referrals, foot exams, smoking cessation, and self-management goals.
- When the collaborative targeted a specific outcome measure, namely blood pressure in diabetic patients, participating practices were able to achieve significant improvements in the number of patients with controlled blood pressure.

As a quality improvement collaborative, the RPC/CHCC's approach closely aligns with CDC's focus on the promotion and use of system-level strategies in health care settings to affect health outcomes. This model emphasizes the importance of team-based care, which is a recommended strategy for blood pressure control by the Community Preventive Services Task Force.⁶ In addition, this model has the potential to build the primary care workforce in the midst of the ever-changing health care landscape as shaped by health reform. Finally, this model affords primary care practices the unique opportunity to share information and successful strategies across practices, which can facilitate widespread adoption of effective systems change strategies across primary care practices.

Promoting System-Level Change Within a Primary Care Practice

A quality improvement learning collaborative such as the RPC/CHCC promotes the use of effective systems change strategies by providing participants with concrete examples of how to implement approaches that help primary care practices manage the health of their patient population, promote patient-centeredness, conduct ongoing performance measurement, and oversee care coordination. The collaborative model used by the RPC/CHCC incorporates components of the CCM and PCMH within all activities; the collaborative also emphasizes the use of a team-based care approach. Through participation in collaborative activities, primary care staff members are given the knowledge and tools needed to improve the delivery of health care services within their practice. Overall, it is important to teach a wide range of primary care staff members how to initiate broad-scale systems change within their practice, because it can facilitate sustained improvement in outcomes long after participation in a collaborative is complete.

Engaging a Wide Range of Primary Care Staff in Systems Change

The RPC/CHCC engages a wide range of primary care staff members in program activities. Examples of the staff that participate in the collaborative include physicians, nurses, care coordinators, medical assistants, residents, office managers, receptionists, billing specialists, information technology staff, and data managers. By engaging practice staff members at all levels, a practice is better able to conduct systems change and improve the quality of care delivered to patients.

Supporting Workforce Development in Primary Care

A quality improvement learning collaborative that focuses on patient centeredness and team-based care ensures that all participants receive valuable information. This information can improve the way they practice medicine and deliver care, and it provides participants with skills they can carry with them throughout their career. The collaborative model, as seen in the RPC/CCHC, can be used to reach residents within family and internal medicine residency programs who, upon graduation, become fully licensed physicians accustomed to a quality- and patient-focused culture. In addition, these future physicians are able to carry the principles learned through participation in the collaborative to their future place of employment. A quality improvement collaborative can also have a similar impact on community health center staff members, teaching them how to make systematic changes to improve health care quality within the confines of a community health center. Overall, this model has the potential to contribute to the development of a primary care workforce that is focused on delivering patient-centered care and understands the importance of quality improvement within a primary care setting as a way to improve patient health outcomes.

Encouraging Sharing Ideas and Strategies Across Practices

Participants of a quality improvement collaborative are afforded the unique opportunity to share ideas and experiences related to improving and implementing systems change strategies with other primary care professionals outside of their own practice. For example, RPC/CHCC's format and use of Live Learning Sessions provides participants with the opportunity to have face-to-face interaction and network with other primary care practitioners who may be working on the same types of improvements. During sessions, participants are able to learn from one another about current clinical standards; challenges experienced by other practices; and strategies used to overcome those challenges. The information participants learn at these sessions equips them with knowledge and tools to conduct systems change strategies within their practice.

Core Elements of the RPC/CHCC

Exhibit 1 provides an overview of the core elements of the RPC/CHCC. Section III describes each of the elements in greater detail and provides further considerations related to implementation. In addition to the descriptions provided regarding implementation, we have also included an implementation timeline in Appendix C that demonstrates how the program has evolved over time.

Exhibit 1: Overview of the RPC/CHCC Core Elements

Element	Description
Evidence-Based Framework for Systems Change Within Primary Care	Using the CCM, PCMH principles, and the concept of team-based care , the collaborative provides theoretical frameworks that can help QI teams conduct systems change within their primary care practice.
Delivery of Collaborative Activities	Through Live Learning Sessions and monthly conference calls , QI teams are taught how to apply and use strategies for systems change to improve health care delivery within their practice and improve patient health outcomes. Data reporting responsibilities allows teams to monitor their progress over time.
Practice-Level Transformation	QI teams apply what they learn from the collaborative to implement systems change strategies within their practices using the Plan-Do-Study-Act (PDSA) approach. 7 QI teams receive feedback and guidance from faculty mentors on the data they report to the collaborative.
Expand Reach in Practices	QI teams engage primary care staff, outside of those individuals that participate in the collaborative, in order to spread the concepts learned through the collaborative to help facilitate true practice transformation. This spread helps practices to sustain what is learned through the collaborative, even after participation has ended.
Management of Collaborative Implementation	PAFP provides day-to-day management for the collaborative, oversees the development and implementation of all key activities, and conducts data management so that teams can track their progress over time.

II. Getting a Residency Program Collaborative or Community Health Center Collaborative Started in Your Community

When developing a collaborative—especially one that targets residency programs or community health centers—it is important to consider the elements necessary to get the program off the ground. Prior to implementation of a collaborative like the RPC/CHCC, the following tasks must be addressed:

- Determine appropriate implementation staff and resources
- Identify target audience (e.g., program participants) and recruit participants
- Select appropriate quality measures

Below is a detailed description of each task to be addressed prior to implementation.

Determining Appropriate Implementation Staff and Resources

Administrative Staff

Administrative staff members (e.g., program directors, program managers) work together to plan, implement, and evaluate a collaborative like the RPC/CHCC and often are in charge of spearheading all logistics involved in implementing key collaborative activities. When identifying administrative staff members, consider individuals who have expertise in the following:

- Program management
- Quality improvement in a primary care setting
- Data management and analysis

Within the RPC/CHCC, PAFP provide administrative support to ensure the collaborative operates as intended. Program management within PAFP facilitates the delivery of presentations at Live Learning Sessions and the logistics of organizing monthly conference calls, and ensures that Live Learning Sessions are eligible for continuing medical education (CME) credits to attendees. In addition, administrative staff members work to establish and update data reporting systems, which serve as the foundation for the RPC/CHCC, by providing a mechanism for data reporting and feedback.

Faculty Mentors

The identification of experienced individuals who are able to provide timely and tailored guidance to participants is an important first step in starting a quality improvement learning collaborative for primary care practices. Within the RPC/CHCC, faculty mentors are primary care physicians who are familiar with quality improvement in primary care. Prior to implementing a collaborative, select faculty mentors based on their ability to engage the target audience appropriately.

Faculty Mentors in RPC/CHCC

In the RPC/CHCC, faculty mentors work with program participants to help them conduct systems change strategies within their primary care practice.

The faculty mentors of RPC/CHCC are family or internal medicine physicians who have previous experience with planning and implementing quality improvement initiatives within their practices.



In addition to the selection of faculty mentors, it is important to clearly define the role they will play in the program. Within the RPC/CHCC, faculty mentors provide participants with tailored guidance and feedback regarding quality improvement within their specific setting. Within a quality improvement learning collaborative, faculty mentors can facilitate the following activities:

- Lead program activities, such as Live Learning Sessions and monthly conference calls
- Review teams' practice-level data
- Provide tailored written and verbal feedback based on data review
- Provide support related to using data management systems for population management
- Address specific questions to participants

Data Management

Data management is an important function of any quality improvement learning collaborative, and a program must develop a data management process prior to implementing the program. As mentioned, at least one staff member should have specific expertise in data management, abstraction, and analysis. If possible, organizations interested in implementing a collaborative should try to build a comprehensive, user-friendly data management system to facilitate the management and submission of practice-level measures by teams on an ongoing basis. Planning this aspect of a program prior to the implementation of the program will ensure data is appropriately managed and used throughout the duration of the collaborative.

Community Partners

It is important to identify partners within the community that can support a collaborative once it is implemented. Community partners can be a beneficial resource because they can work closely with administrative staff to support the planning, implementation, and/or evaluation of a program. Support from partners can include the following:

- Funding and other resources (e.g., staff, expertise)
- Recruiting and engaging certain types of practice participants (e.g., community health centers, residency programs)
- Conducting evaluations to assess practice-level processes

When identifying partners, consider organizations and individuals with similar objectives and goals. In addition, if possible, identify those entities for which partnership activities could be reciprocal in nature (e.g., collaborative shares practice-level data with partner organization for reporting purposes), as this can facilitate continued engagement and support.

Funding

Designated funding to support the planning and implementation of a collaborative is an important factor for success. In particular, funding should be allocated to (1) compensate administrative staff, data managers, faculty mentors, and practices for their participation; (2) plan and facilitate Live Learning Sessions and monthly team calls; and (3) develop and/or maintain a data management system to facilitate data reporting and feedback.



Identifying Target Audience and Recruit Participants

In addition to securing appropriate staff and resources, it is also important to determine the target audience for the collaborative, such as residency programs, community health centers, or some other kind of primary care practice setting. When designing a collaborative, your program should consider each audience and its specific needs and tailor the program appropriately, in terms of content and delivery, to ensure its usefulness for the participants. Program participants for the RPC/CHCC include both QI teams and primary care practices.

Quality Improvement Teams

QI teams serve as the primary program participants and the foundation for the provision of systems change within their practices. QI teams are composed of representatives from each primary care practice; they directly participate in collaborative activities and are responsible for engaging practice staff members beyond those that are a part of the QI team. Team members are charged with working together to plan and conduct quality improvement strategies within their respective practices, participate in collaborative activities, and engage practice staff members in the practice transformation process.

When developing a collaborative, it is important to consider the composition of the QI team. Systems change within a primary care practice requires the involvement of a variety of staff members, such as office managers and administrators, medical record and data managers, and other nonclinical support staff. Consider requiring participating practices to include a wide range of staff to make up their QI team.

Primary Care Practices

Outcomes within a primary care practice can be improved through QI team participation in collaborative activities. Although QI teams serve as leaders in the initiation of quality improvement strategies within a practice, true practice transformation cannot happen without engagement of practice staff and leadership and practice-level systems change. When developing a collaborative, consider tailoring the content to best address the context for which participants will be working to conduct quality improvement. For a primary care practice, the value in participating in a quality improvement-focused collaborative includes the opportunity for a practice to improve the quality of care offered and to enhance coordination and patient-centered care within the practice.

QI Team Makeup

In the RPC/CHCC, QI teams are composed of at least one attending physician, one resident (for residency programs only), and one nonmedical staff person. However, there is great variability in the makeup and number of individuals on each team, and practices determine the team Members and team structure. Additionally, most QI teams are led by a physician champion, who oversees participation in the collaborative and systems change strategies within a practice.

RPC/CHCC Participants

RPC/CHCC includes both family and internal medicine residency program practices and community health centers:

Residency programs are postgraduate-level medical training programs in which residents who received a medical degree train under a licensed medical physician to gain hands-on experience. Residency programs serve medically underserved populations (e.g., low-income, under- or uninsured) and face barriers in working with these populations (e.g., high no-show rates, transient population, variable adherence to treatment regimens, issues with transportation). When working with residents, a collaborative should keep in mind that residents are likely newer to the health care field. Participation in the collaborative will provide them with a great opportunity to learn new principles and strategies; however, they may bring less hands-on experience to their participation in collaborative activities.

- Community health centers are neighborhood health centers that also focus on serving medically underserved populations. Community health centers are generally staffed by primary care physicians, nurses, and nonmedical clinical staff (e.g., administrators). When working with teams from community health centers, a collaborative should consider that community health center staff members likely have more experience in the field and may be able to offer proven strategies and insight into collaborative activities. However, community health center staff may also have more competing demands within their practice with respect to completing specific tasks and training tied to center funding, so they may have less time and capacity to devote to collaborative activities.

Recruiting Ready Participants

Regardless of the target audience, collaborative participants must have sufficient capacity to collect and manage clinical process and outcomes measures of interest. Team and practice capacity for data reporting was found to be a key facilitator for QI team engagement in collaborative activities, namely data abstraction, reporting, and review of performance measures. Since data review will guide a team's quality improvement activities in terms of the areas of focus and the strategies selected, the capacity to retrieve and report practice data is essential to meaningful participation.

When recruiting participating primary care practices into the collaborative, some questions to consider when determining a practice's capacity to report data include the following:

Does the practice have an electronic health record (EHR)? If a practice has an EHR, they may be better equipped to track their patients and quickly retrieve information for collaborative reporting.

If the practice has an EHR, do they have staff onsite who are proficient in abstracting data from the system? A common barrier reported by QI teams in the RPC/CHCC was an inability to abstract data and obtain reports as needed from an EHR system. If practice staff members do not know how to use the registry function within their EHR, they may find it challenging to report data consistently and accurately.

If the practice does not have an EHR, do they have the capacity (e.g., staff, time) to manually pull charts to abstract data? Manual chart abstraction is time consuming, but is feasible given sufficient resources.

Does the practice have staff dedicated to medical records or EHR management who can help with data abstraction? For many practices, physicians and nurses do not have time to manually pull charts; further, most physicians and nurses do not have the knowledge needed to create reports from their EHR. Therefore, if a practice has staff dedicated to medical record or EHR management, they may be more likely to abstract data with ease.

By answering these questions prior to engaging a practice in the collaborative, program management may be able to provide advice as to whether a practice is truly ready to participate in the collaborative and ensure that all participating practices can be fully engaged in activities.

Selecting Appropriate Quality Measures

Data reporting is an essential part of a quality improvement collaborative model for primary care practices because it facilitates the practical application and implementation of quality improvement strategies.



It is important to select the right quality measures for assessing success across a collaborative and ensure the capacity to report data among participating teams and practices. Quality measure data can also be used to help a collaborative monitor its success in achieving outcomes. For more information on how the selection of clinical process and outcome measures can be used for program monitoring and evaluation, please see section IV Program Monitoring and Evaluation.

Measure selection dictates much of the educational content delivered in a quality improvement collaborative, as well as the priorities for participating teams and practices. Selected measures may help to enforce specific frameworks taught through the collaborative or include specific clinical topics or disease states. The total list of quality measures should include both clinical process and outcome measures, as defined by national organizations such as NCQA Healthcare Effectiveness Data and Information Set (HEDIS), Agency for Healthcare Research and Quality (AHRQ), and the National Quality Forum (NQF). A collaborative can also decide to focus on specific clinical topics during each year of the collaborative to refocus teams on specific areas of quality improvement.

For example, because of the RPC/CHCC's focus on the Chronic Care Model (CCM), measures that centered on the management of chronic disease were ideal for participating QI teams to collect. PAFP decided that each year, one specific disease state would be the focus of all data reporting. PAFP dictated that year 1 of the collaborative would focus on diabetes measures, and year 2 would focus on Ischemic Vascular Disease (IVD) measures. Despite the annual shift in RPC/CHCC's focus, teams are still required to continue reporting on all measures throughout their participation in the collaborative. In the most recent year of implementation (year 3), PAFP included measures related to depression and obesity screening. The total list of quality measures on which teams report include process and outcome measures for both diabetes and IVD as defined by HEDIS, AHRQ, and NQF. Exhibit 2 provides all of the measures the RPC/CHCC requires teams to report on a monthly basis for diabetes and IVD.

Exhibit 2: Complete List of Measures for the RPC/CHCC

Required Process Measures*	
Diabetes	Ischemic Vascular Disease
<ul style="list-style-type: none"> • Count of diabetes <i>mellitus</i> (DM) patients with eye exam referral • Count of DM patients with completed eye exam • Count of DM patients who smoke • Count of DM patients with smoking cessation counseling • Count of DM patients with medical attention for nephropathy • Count of DM patients with self-management goal • Count of DM patients with foot exam • Count of DM patients aged 40–75 years using aspirin • Count of DM patients with Smoke Query • Count of DM patients aged 55–75 years using ACE/ARB • Count of DM patients with at least 1 LDL annually • Count of DM patients with at least 1 A1C annually • Count of DM patients with Pneumovax vaccine • Count of DM patients on a statin 	<ul style="list-style-type: none"> • Count of IVD patients prescribed antiplatelet/anti-coagulant • Count of IVD patients on a statin • Count of IVD patients with documented smoking status • Count of IVD patients who received smoking cessation counseling • Count of IVD patients with a yearly lipid profile

Required Outcome Measures	
Diabetes	Ischemic Vascular Disease
<ul style="list-style-type: none"> • Count of DM patients aged 18–75 (denominator) • Count of DM patients aged 40–75 (denominator) • Count of DM patients aged 55–75 (denominator) • Count of DM patients with latest A1C >9 • Count of DM patients with latest A1C >8 • Count of DM patients with latest A1C >7 • Count of DM patients with latest BP <130/80 • Count of DM patients with latest BP <140/90 • Count of DM patients with latest LDL <130 • Count of DM patients with latest LDL <100 	<ul style="list-style-type: none"> • Count of IVD patients aged 18 or older (denominator) • Count of IVD patients with BP less than 140/90 • Count of IVD patients with LDL less than 100

*Although the smoking measures represent smoking in specific populations, smoking behavior is considered for all patients regardless of presenting condition.

III. Core Elements of the RPC/CHCC

The RPC/CHCC is guided by five core elements:

1. Evidence-based frameworks for systems change within primary care
2. Delivery of collaborative activities
3. Practice-level transformation
4. Expand reach in practices
5. Management of collaborative implementation

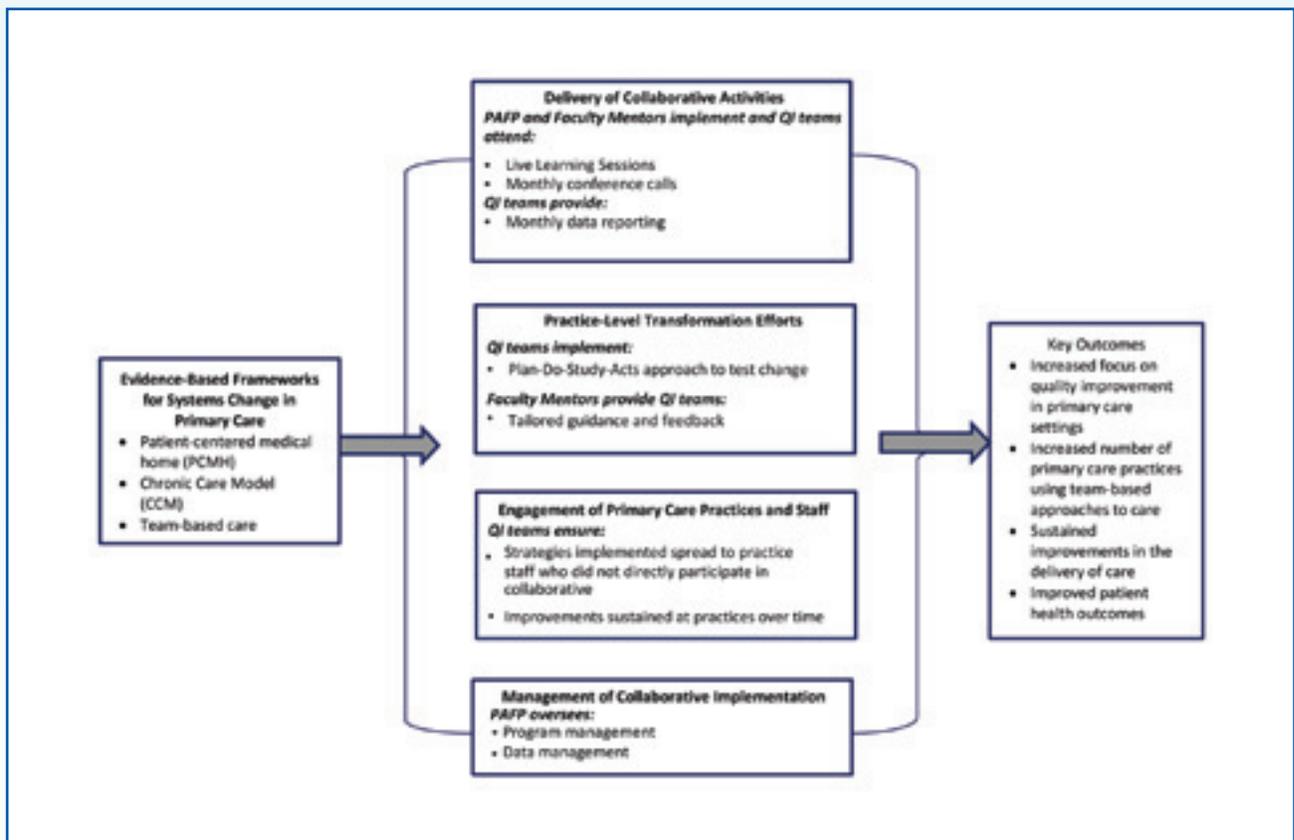
Information describing each of the five core elements is organized into three areas:

A general description of each core element

- An overview of how PAFP implemented these elements
- Factors to consider when implementing these elements in your community

Exhibit 3 provides a graphical depiction of the RPC/CHCC core elements and how they contribute to key outcomes.

Exhibit 3: RPC/CHCC Core Elements



Core Element 1: Evidence-Based Frameworks for Systems Change Within Primary Care

Description of Evidence-Based Frameworks for Systems Change Within Primary Care

The RPC/CHCC focuses on specific evidence-based frameworks for primary care, and these serve as the foundation of the key messages delivered to participants throughout the program. Following is a detailed description of each.

Chronic Care Model

The CCM is a theoretical framework that identifies the essential elements of a health care system that aim to encourage high-quality chronic disease care. Essential elements of the model include the community, health system, self-management support, delivery system design, decision support, and clinical information systems. Together, evidence-based change concepts within each of these essential elements foster meaningful collaborations between patients and their health care providers.⁸⁻¹⁰

Patient-Centered Medical Home

The PCMH model is an approach to primary care that focuses on providing comprehensive and continuous care that facilitates partnerships between patients and physicians. The Joint Principles for the Patient-Centered Medical Home, endorsed by four national primary care physician associations, include the following:

Personal physician: Patients have an ongoing relationship with physician.

Physician-directed medical practice: A physician leads a team that takes collective responsibility for each patient.

Whole-person orientation: A personal physician is responsible for considering a patient's entire health care needs.

Coordinated and integrated care: Care is coordinated centrally and delivered across all health care providers.

Ensured quality and safety: Care team delivers health care to ensure a patient's safety.

Enhanced access to care: Systems are created to expand patient access.

Payment: Payment structure recognizes the value of PCMH.¹¹

A collaborative can serve as a way to help participants embrace PCMH principles and incorporate them into their practice over time.

Team-Based Care

Team-based care is a critical element with respect to achieving total practice transformation.¹² A care team is a small group of clinical and nonclinical staff members who work closely with health care providers to provide comprehensive care to a panel of patients. Team members and their respective roles differ from practice to practice; however, care teams maintain a shared focus on the following:

Recognizing both patients and care teams as partners in care.

- Ensuring that patients are able to see their provider and/or care team when needed.
- Defining roles and tasks among team members to capitalize on each member's expertise, skills, and credentials.

PAFP's Implementation of Evidence-based Frameworks for Systems Change Within Primary Care

The RPC/CHCC uses the CCM, PCMH, team-based approach to health care to teach participants how to accomplish systems change within a primary care practice. PAFP asserts that using these theoretical frameworks as core principles allows for the teaching of quality improvement and patient-centeredness to participants and will contribute to improvements in the delivery of care and patient health outcomes within family and internal medicine residency programs and community health centers.

Within the RPC/CHCC, all activities are centered on these frameworks. For example, PAFP teaches participants about the CCM, PCMH, and team-based approach to health care across program activities, including Live Learning Sessions, monthly conference calls, and guidance offered by faculty. In addition, participation in the RPC/CHCC requires teams to obtain NCQA PCMH recognition, particularly during their first year in the program. NCQA PCMH recognition is a system-level approach to improving primary care by providing practices with specific criteria to work in teams, focus care on patients, and coordinate care. Practices apply for NCQA PCMH recognition through an intensive process that involves providing documentation of practice policies and processes; they are ultimately assessed on their ability to meet the following criteria:

- Enhanced access and continuity
- Identification and management of patient populations
- Planning and management of care
- Provision of self-care support and community resources
- Tracking and coordination of care
- Measurement and improvement of performance

NCQA PCMH recognition is one of the most widely adopted models for transforming primary care practices into medical homes. By obtaining NCQA PCMH recognition, practices with the RPC/CHCC are able to demonstrate their strong focus on PCMH.

Key Factors to Implementing Evidence-based Frameworks for Systems Change Within Primary Care in Your Community

When using theoretical frameworks for systems change within primary care to guide the implementation of a quality improvement learning collaborative in your community, consider the following recommendations:

- Use theories and frameworks that have been tested and will resonate most with the target audience.
- Consider how specific theories and frameworks provide participants with the information needed to achieve goals and outcomes.
- Determine how to integrate identified theories and frameworks into the content of the collaborative.

Core Element 2: Delivery of Collaborative Activities

Description of Collaborative Activities

Opportunities to connect across and within QI teams serve as the foundation of the RPC/CHCC collaborative intervention. Below is a description of three essential collaborative activities.

Live Learning Sessions

Key messages related to systems change and quality improvement are conveyed through Live Learning Sessions. Live Learning Sessions are focused, in-person, professional development meetings for QI teams. Live Learning Sessions feature presentations and break-out sessions that can be led by various program staff, faculty mentors, and other guest speakers who are considered experts in specific content areas. Sessions can focus on an array of topics and should aim to teach participants how to transform their practice to deliver quality health care. In addition, Live Learning Sessions facilitate interaction between participants so that strategies for quality improvement can be shared across practices.



Monthly Conference Calls

Monthly conference calls are held for participants to allow them to accomplish the following:

- Receive relevant programmatic updates
- Present information relevant to planning and implementing PDSAs
- Address any issues faced (e.g., monthly data reporting, implementation strategies)
- Introduce helpful tools and resources

Monthly team conference calls are expected to increase readiness for transformation among participating practices, and increase shared learning among practices. Faculty mentors can work collaboratively with program managers to plan focus areas and deliver presentations during the monthly team conference calls.

Monthly Data Reporting

One of the most important elements of a primary care quality improvement learning collaborative is the collection and review of clinical data. Collaborative participants should be required to report practice-level data on a specific list of quality measures for certain disease states (as described previously) at specified time intervals. Using these data, practice participants can review their practice's performance on each of the selected quality measures. The requirement of collecting, submitting, and reviewing monthly performance reports facilitates the systematic assessment of performance in clinical process and outcome measures over time to guide a practice's quality improvement efforts.

As a part of the collaborative learning model, practice data reporting is transparent, meaning that participants receive reports that illustrate differential performance among all practices. This transparency allows participants to compare their progress to that of other practices and provides motivation to improve outcomes so as to be seen as a high performer. Overall, reporting practice data on a monthly basis should increase participants' reliability on process measures over time; increase the use of data to drive quality improvement; and improve patient health outcomes.

PAFP's Implementation of Collaborative Activities

PAFP has worked to implement each of the key collaborative activities in a manner that facilitates the delivery of key messages regarding quality improvement and facilitates QI teams' achievement of improved delivery of care and patient health outcomes within their practices. Below is a detailed description of how PAFP implemented each of the key activities.

Live Learning Sessions

PAFP hosts three Live Learning Sessions throughout the year for the RPC/CHCC. PAFP works to ensure that all Live Learning Session participants are eligible to receive CME credits for attendance, and participation is considered mandatory for all QI team members. The sessions have focused on an array of topics pertinent to residency programs and community health centers in terms of teaching participants how to transform their practices to deliver quality health care. The topics covered in each session were carefully planned in collaboration with PAFP staff and faculty mentors on an annual basis and closely align with helping teams meet goals and expectations. For example, because teams are expected to complete their NCQA PCMH application as part of participation, Live Learning Session content for the first year is heavily focused on specific information related to application preparation and completion. In addition, the year 1 Live Learning Session content also focused on helping teams improve practice performance on clinical process measures, as faculty mentors reported that these measures were easier to impact initially and set the stage for impacting clinical outcome measures later. As the RPC/CHCC has evolved over time, topics covered in Live Learning Sessions have also been adapted. PAFP reported that practices' performance in clinical process and outcome measures (as reported by QI teams), accompanied by team feedback, has helped to direct the session content.

High Blood Pressure: Special Focus of Live Learning Session

In order to focus teams on improving blood pressure outcomes, during a Live Learning Session in June 2012, PAFP introduced a "blood pressure challenge" to all residency program teams. Teams were challenged to identify 20 diabetic patients within their registries who had uncontrolled blood pressure, and get their blood pressure controlled by the next Live Learning Session (a 4-month period).

In addition to the content delivered, the way in which the curriculum is delivered has also evolved over time. To ensure that information provided is relevant to all attendees, breakout sessions are often divided into clinical and nonclinical staff. Additionally, PAFP and faculty mentors have tried to make Live Learning Sessions less didactic by soliciting presentations from QI teams that have been successful in achieving specific outcomes within their practice.

Exhibit 4 provides an example of a Live Learning Session agenda for CHCC participants.

Exhibit 4: Sample Live Learning Session Agenda

Community Health Center Collaborative Agenda	
Time	Activity
7:30 – 8:00 a.m.	Registration
8:00 – 8:15 a.m.	Meeting Kickoff
8:15 – 9:15 a.m.	Recipe for Success—What Are the Ingredients for Primary Care Practice Transformation?
9:15 – 9:30 a.m.	Evaluation Update
9:30 – 9:45 a.m.	Break
9:45 – 10:00 a.m.	Inquiring Minds Want to Know—Program Survey Results
10:00 – 10:30 a.m.	CHCC Performance Data Review and Improving Diabetes Outcome Measures
10:30 – 11:30 a.m.	Breakout Session for CLINICAL STAFF—Introduction to IVD: Applying What You Have Learned to a New Disease
10:30 – 11:30 a.m.	Breakout session for CLINICAL Support STAFF—An Engagement Part: How to Engage Clinical Support Staff With Their Patients
11:30 a.m. – 12:30 p.m.	Team Networking Lunch
12:30 – 1:30 p.m.	Depression and Diabetes
1:30 – 1:45 p.m.	Integration: Behavioral Health
1:45 – 2:15 p.m.	Tips for Lowering Blood Pressure and Lessons Learned From a CHC
2:15 – 2:45 p.m.	Approached to Open Access Scheduling: Panel Discussion From CHC Representatives
2:45 – 3:00 p.m.	Break
3:00 – 4:00 p.m.	Transitions of Care
4:00 – 4:30 p.m.	PDSA Development and Faculty Rounds
4:30 – 5:00 p.m.	Team Reporting on PDSAs
5:00 p.m.	Wrap up

Monthly Conference Calls

PAFP and faculty mentors host monthly team conference calls for all QI teams and work collaboratively to plan and deliver presentations. Often, faculty mentors lead the development of specific content and recommendations based on their knowledge of quality improvement processes and practice transformation, while PAFP leads logistical planning and facilitation.

During years 1 and 2 of the RPC/CHCC, monthly team conference calls were held collectively with all teams. In year 3, PAFP introduced a new format for the monthly team calls that involved each faculty mentor hosting a call with only his or her assigned teams. The purpose of this new format was to facilitate faculty mentors' ability to provide tailored feedback and guidance to their teams, and encourage teams to be more engaged in discussion. PAFP and faculty mentors have found that this format has facilitated improved participation from QI teams and helped to improve communication between faculty mentors and teams.



Monthly Data Reporting

QI teams report and share practice-level data, and this reporting can inform QI teams of their practices' areas for improvement. In addition, PAFP and faculty mentors review aggregate reporting across QI teams to inform the curriculum content, ensuring what is covered during Live Learning Sessions and monthly conference calls address the areas for which teams need the most improvement and guidance.

PAFP requires QI teams to report practice-level data on diabetes and IVD patient populations (as described in Exhibit 2) on a monthly basis. QI teams commonly reported working with their practices' clinical information specialist(s) to set up reports to access patient data; those QI teams that do not have information technology support reported learning how to run reports themselves, a process that sometimes involves manual data collection by practice staff. Most of the participating QI teams represent practices that use EHRs to collect and store all patients' medical records.

Once a QI team has created an accurate reporting system to abstract and aggregate patient-level data for all measures, they submit this data to PAFP. Upon receipt, PAFP faculty mentors review the data and provide feedback to teams each month. Since the upgrade of the data system, QI teams are now able to receive real-time feedback and explore their progress via run charts and other analyses conducted automatically through the Data Diamond data system.

Key Factors to Deliver Collaborative Activities

When developing and implementing key program activities for a quality improvement learning collaborative in your community, consider the following recommendations:

- Ensure program activities contribute to participants' ability to achieve quality improvement outcomes.
- Use data to further focus the content of information provided to collaborative participants; if participants seem to be having difficulty with one measure or outcome, use collaborative activities as a place to provide them with the tools and knowledge that can further support participants' efforts in these areas.
- Coordinate the messages and content delivered across all program activities so that they are complementary.
- Identify appropriate time intervals for the implementation of all program activities to facilitate continued engagement across participants; too few or too frequent offerings of program activities may discourage participation.



Core Element 3: Practice-Level Transformation

Description of Practice-Level Transformation

RPC/CHCC participants are expected to take what they learn through collaborative activities to inform systems change within their practice. Below is a description of (1) how teams implement change in their practices through the Plan-Do-Study-Act approach, and (2) the guidance teams receive to assist with practice-level transformation.

Action Periods to Test Change (PDSAs)

Quality improvement learning collaboratives for primary care teach participants how to conduct ongoing quality improvement within the confines of their primary care practice. One such strategy that can be used to teach participants how to conduct and test quality improvement strategies is the Plan-Do-Study-Act approach, which focuses on the selection and testing of specific improvement strategies prior to full implementation of a systems change. PDSAs can help participants conduct data-driven, quality improvement strategies to enhance a team-based approach to patient care, increase practice efficiency, and improve performance of clinical process and outcome measures.

Tailored Guidance and Feedback

As a part of a collaborative, participants need to receive individualized support to ensure they fully understand the concepts being taught and are able to put those concepts into action within their practice. In addition, it is important that participants are given feedback that is feasibly implemented within real-world primary care settings, and that this feedback is based on the areas in which they need the most improvement. Therefore, it is important that a quality improvement learning collaborative devise a way to provide participants ongoing guidance, support, and feedback throughout their participation in the collaborative.

PAFP's Implementation of Practice-Level Transformation

PAFP uses both PDSAs and tailored guidance to guide participating teams through the practice transformation process.

Action Periods to Test Change (PDSAs)

Within the RPC/CHCC, QI teams work together to apply the information obtained from Live Learning Sessions and monthly conference calls to inform the development of PDSAs that they can implement in their practices. QI teams are expected to implement new PDSAs to continue the quality improvement process within their practice. Teams also work closely with their faculty mentor to review those strategies and decide which ones are worthy to implement practice-wide. As a part of their participation in the collaborative, PAFP requires teams to report at least one example of a PDSA strategy they plan to implement within their practice; subsequent monthly calls facilitate the sharing of status updates among teams for those strategies.

Tailored Guidance and Feedback

Faculty mentors help to facilitate the delivery of tailored guidance and feedback to participating practices. The faculty mentor model used by RPC/CHCC is unique for a few reasons. First, faculty mentors provide all of their feedback “virtually,” in that they are not actually onsite within each of the primary care practice sites they mentor. This helps to cut program costs and allows primary care practice staff members to rely more heavily on themselves for improving their practice. Second, the RPC/CHCC model facilitates peer-to-peer (physician-to-physician) communication and feedback. Because many physicians appreciate and prefer receiving feedback in this manner, program participants are more likely to be receptive to the feedback they receive.

Within the RPC/CHCC, faculty mentors work with assigned QI teams to provide guidance for implementing and measuring quality improvement initiatives, conducting systems redesign, and transforming practices into medical homes focused on patient centeredness. Faculty mentors conduct reviews of practice-level monthly data submissions and provide tailored feedback to participating QI teams regarding the following:



Progress on performance related to clinical process and outcome measures

- Appropriate systems change strategies to improve clinical process and outcome measures
- Completion of the NCQA PCMH recognition application
- Customization and use of EHR systems

At least monthly, faculty mentors communicate with their assigned teams via telephone and/or e-mail to stay abreast of progress and reporting of required data, implementation of PDSAs, and team participation in collaborative activities. Overall, the faculty mentor model used within RPC/CHCC is intended to empower practices to conduct meaningful transformation activities independently while still receiving tailored guidance.

Key Factors to Implementing Practice-Level Transformation

When implementing practice transformation and guidance for a quality improvement learning collaborative in your community, consider the following recommendations:

- Provide participants with a process for conducting system-level change strategies they can implement in their practice; PDSA cycles are an easy approach to share with participants that can facilitate small tests of change to inform larger system changes within a primary care setting.
- Select individuals to serve as faculty mentors who have both content-area expertise and contextual understanding of practice transformation in a primary care setting.
- Determine minimum requirements for interactions and engagement among faculty mentors and participants; offer participants varied opportunities for interacting with faculty mentors (e.g., during program activities, individual phone call, e-mail) to enhance guidance delivered to participants.

Core Element 4: Expand Reach in Practices

Description of Expand Reach in Practices

Spread of PCMH Principles

“Spread” refers to the use of collaborative participants to integrate PCMH principles and conduct continuous quality improvement within their practice, and teach these principles to other practice staff. Collaboratives like the RPC/CHCC aim to spread PCMH principles among other practice staff members—beyond those that participate directly in collaborative activities—to facilitate practice transformation. True practice transformation cannot occur through team engagement in collaborative activities alone. It is essential for collaborative participants to engage other practice staff, including physicians, residents, clinical support staff (e.g., nurses, medical assistants), and nonclinical support staff (e.g., office managers, IT support staff, care managers).

PAFP’s Implementation of Expanding Reach in Practices

Spread of PCMH Principles

PAFP has instituted a few mechanisms to facilitate the spread of PCMH principles beyond those team members who directly participate in collaborative activities and to support their measurement of these efforts. As part of their annual agreement to participate in RPC/CHCC, QI teams are required to send representation to all Live Learning Sessions and have at least one representative from their team attend monthly conference calls. In addition, teams are encouraged to send other individuals who have not been consistently involved in the collaborative to Live Learning Sessions to help expose others from the practice to concepts related to PCMH. Engagement of an entire practice, beyond those involved directly with RPC/CHCC activities, increases practice efficiency and enhances the use of a team approach to patient care within a practice.

To better assess spread at the practice level, PAFP has used the PCMH Monitor, which is a standardized instrument that QI teams complete to assess their practice’s progress toward becoming a PCMH. This instrument includes 11 PCMH domains, and within each domain, there are items to assess the extent to which a practice has moved toward a new model for delivering care. QI team members identify the extent to which their practice has been able to implement each item using the scale “Not at all (0)” and “Yes, completely (10).”

These data have been used to track participating practices’ progress related to practice transformation. The data have also been used to help PAFP better understand how elements related to practice transformation have changed over time and to gauge spread across teams and practices. By having teams complete the PCMH Monitor, PAFP hopes to adjust programming to meet the changing needs of teams and assess changes in the way practices are operating.

In addition to the PCMH monitor, PAFP also has been involved in tracking resident employment upon graduation. PAFP hopes that those residents who participate in the collaborative will be more likely to select employers that are already functioning as PCMHs or that the residents will work with their employers to help them become PCMHs. By tracking this outcome, PAFP can also better measure the impact of their program at higher level.

Practice PCMH Monitor

The PCMH Monitor is an instrument practices and collaboratives can use to help prioritize PCMH activities and understand a progress in becoming a PCMH over time. The instrument includes 11 domains related to becoming a PCMH practice:

Leadership

- Staff and resident engagement
- QI team functioning
- Registry and measures
- NCQA recognition
- Curriculum redesign
- Population management
- Patient-centered care
- Team-based care
- Coordination of care
- Access and scheduling

Key Factors for Expanding Reach in Practices

When engaging primary care practices and staff as a part of the implementation of a quality improvement learning collaborative in your community, consider the following recommendations:

- Encourage participation in collaborative activities beyond those members of the QI team; by engaging participation from practice staff at large, a collaborative is better able to spread PCMH principles and instill the use of system-level changes in primary care.
- Consider ways to measure and monitor changes occurring within the participating practices; use of a standardized tool like the PCMH monitor allows for the systematic assessment of change at the practice level, and can provide collaborative program staff with important contextual information regarding practices' progress in functioning as a PCMH.

Core Element 5: Management of Collaborative Implementation

Description of Management of Collaborative Implementation

In order to orchestrate the implementation of the entire collaborative and all key activities, general program management and oversight is needed. Following is a description of management support and how management issues should be considered when implementing a similar collaborative.

Program Management and Oversight

Management and oversight activities for a quality improvement collaborative are necessary to support the implementation of high-quality program activities (e.g., Live Learning Sessions, monthly team conference calls) and to ensure that program goals are being met. Program management staff must be familiar with primary care and systems change concepts and adept to working with clinical (e.g., physicians, residents, nurses) and nonclinical (e.g., office managers, billing specialists, EHR specialists) support staff members in a primary care setting.

Data Management

Data management is a key function within a collaborative with respect to supporting participants in conducting systems change strategies within their practice. A data management and reporting system should aim to accomplish the following:

- Enhance the implementation and delivery of collaborative activities to participating teams
- Improve communication
- Increase efficiency in reporting
- Improve data integrity by preventing errors in data entry
- Increase use of data to inform the implementation of quality improvement strategies
- Track participants' progress over time

Development of a user-friendly, robust data entry and management system that uses real-time data is critical to support participants in mandatory monthly data reporting requirements.

PAFP's Implementation of Managing the Collaborative

Program Management and Oversight

For the RPC/CHCC, PAFP conducts the day-to-day management of the collaborative by planning, implementing, and evaluating all aspects of the RPC/CHCC. PAFP staff members have expertise in program management, quality improvement, and data management and analysis. PAFP staff work with faculty mentors to plan and implement key program activities, such as the Live Learning Sessions and monthly team conference calls. PAFP staff members provide oversight to ensure the content of information delivered within these activities is compliant with the current standards of regulatory bodies that oversee residency programs and community health centers; they also spearhead all logistics involved in implementing these activities.

Data Management

Within the RPC/CHCC, the Data Diamond System (a Web-based data warehouse) was designed by PAFP to facilitate the efficient uploading of clinical and process measures data by QI teams. This centralized data warehouse includes online forms where team members can input data and links to past data reports, as needed. QI teams upload their data directly into the Data Diamond System and, upon receipt of monthly data submissions, faculty mentors review practice data and provide feedback. This system allows for improved efficiency at both the administrative and team levels, as both are able to access relevant data in real time. Data Diamond System also has analytic capabilities that create data reports and longitudinal run charts. These features allow teams to monitor their performance in all reported clinical process and outcomes measures over time.

PAFP plans to expand the Data Diamond System's capabilities over time; eventually the system will house all programmatic data, including data related to Live Learning Session attendance, monthly conference calls, and team PDSA forms. Additionally, the system will also serve as a repository of information related to the collaborative and will include resources and presentations related to quality improvement. Overall, the Data Diamond System aims to enhance implementation and delivery of the program to participating teams; improve communication between PAFP and faculty mentors; increase collaboration among teams and faculty mentors; increase efficiency in reporting; improve data integrity by preventing errors in data entry; and increase the use of data to inform implementation of PDSAs.

Key Factors for Managing the Collaborative Implementation

When managing a quality improvement learning collaborative in your community, consider the following recommendations:

- Ensure that all program staff who implement and manage the collaborative have expertise in program management, quality improvement, and/or data management and analysis.
- Develop a data reporting system that facilitates the collection and management of data and work with teams to ensure they can meet data reporting requirements within the data management system.
- Develop a way to provide real-time feedback to participating teams regarding their performance in clinical process and outcome measures to facilitate improvements within participating primary care practices.

IV. Program Monitoring and Evaluation

For some, the idea of conducting an evaluation can be intimidating, but it does not have to be. Some might see evaluation as a program requirement that you just “have to get done.” However, program monitoring and evaluation provides a number of benefits to public health practitioners. Specifically, it allows you to

- measure progress toward your specific program goals;
- identify opportunities for improvement;
- demonstrate the effectiveness of your program to stakeholders.

This section was developed to provide general guidance to public health practitioners and is not intended to be an exhaustive resource on program monitoring and evaluation. Rather, it is intended to provide a brief overview of core concepts in program monitoring and evaluation and issues to consider when developing and implementing a Collaborative. Much of what is presented here is based on our experience evaluating the RPC/CHCC.

While there are multiple types of evaluations, here we focus on process evaluation (including program monitoring), and outcome evaluation. We encourage you to use the CDC Framework for Evaluation in Public Health (<http://www.cdc.gov/eval/framework/index.htm>) and the resources referenced in Appendix D for more information.

Steps for Planning Program Monitoring and Evaluation

In order to conduct program monitoring and evaluation activities of any program, it is important to conduct a number of steps. Below are some key steps to include when planning any program monitoring and evaluation efforts of a quality improvement learning collaborative.

Determining Key Activities and Outcomes for the Collaborative

Before you can begin to evaluate a program such as a learning collaborative, it is important to develop a solid understanding of what activities are implemented and how the activities link to specific outcomes. Engaging program stakeholders is an essential and necessary step to describing the program through a logic model. A program logic model can serve as a foundation for program monitoring and evaluation efforts of a quality improvement, learning collaborative. A logic model is a visual depiction of a program that links resources, activities, program outputs, and short-, intermediate-, and long-term outcomes. Logic models are a helpful tool to both program planners and evaluators because they can help to determine appropriate measures of implementation and program effectiveness.

As an example, the RPC/CHCC logic model is included in Appendix B. As depicted in this model, PAFP staff members saw the RPC/CHCC as including various activities being carried out at the program, team, and practice levels, and were able to link these various activities to specific program, team, practice, and patient outcomes. The exercise of developing the RPC/CHCC logic model allowed program PAFP staff members to better articulate which activities and outcomes were most important to measure and allowed them to consider how to track changes in these measures over time. It also allowed CDC to better understand how to design and implement an evaluation that would yield meaningful, utility-focused results.

Logic Model and Program Monitoring

Your program logic model can serve as a primary resource for establishing your program monitoring plan. Specifically, the outputs column specifies the direct and tangible results or products of program activities—often things that can be counted. These are often represented by documentation of progress on implementing program activities (e.g., program materials developed, partnerships formed, number of providers trained, women screened).

Developing the Evaluation Questions and Design

Once a program logic model has been developed, information gathered about a program can be used to create appropriate evaluation questions and design. Evaluation questions are often process or outcome focused and align with a program's objectives. Process evaluation questions facilitate the exploration of a program's implementation, while outcome evaluation questions allow for the exploration of a program's impact on specific outcomes. Exhibit 6 below provides the evaluation questions used to guide the evaluation of the RPC/CHCC that was conducted.

Exhibit 6: Process and Outcome Evaluation and Evaluation Questions

Type of Evaluation	Description
Process Evaluation	<p>Process evaluation is used to determine whether a program is being implemented as intended. Process evaluation focuses on the left side of the program logic model, with program inputs, activities, and outputs. Process evaluation is used to establish the plausible links between your program activities and program outcomes. By demonstrating with process evaluation that the program was implemented as intended, you can set the stage for your expected outcomes as part of an outcome evaluation.^{13,14}</p> <p>Example Process Evaluation Questions:</p> <ul style="list-style-type: none"> • What are the core components of the collaborative? • What are the barriers and facilitators to implementation of the collaborative ?
Outcome Evaluation	<p>Outcome evaluation focuses on the short-term, intermediate, and sometimes long-term outcomes of the program (the right side of the program logic model)¹³. Outcome evaluation is used to determine the effectiveness of the program on the expected outcomes. For the CHT program, consider improvements that go beyond health outcomes, such as well-being, the efficiency and quality of care provided, and changes in the networks between health systems and the community.</p> <p>Example Outcome Evaluation Questions:</p> <ul style="list-style-type: none"> • To what extent does the collaborative influence teams' ability to achieve short-term outcomes, namely PCMH recognition? • To what extent does the collaborative influence teams' ability to achieve short-term outcomes related to clinical process measures? • To what extent does the collaborative influence teams' ability to achieve short-term outcomes related to outcome measures? • To what extent do clinical process and outcome measures differ between RPC and CHIC practices?

Stakeholders should contribute to the selection of evaluation questions that align with your program objectives. Consider your evaluation priorities from the following perspectives.

Stage of program development

- Short-term vs. long-term evaluation priorities
- Budget and feasibility factors

An evaluation matrix (as depicted in Exhibit 7 below) can help organize the planning process and ensure that all of the evaluation questions are addressed.

Exhibit 7: Example Evaluation Matrix

Evaluation Question	Data Sources	Methods	Indicators	Analyses
<ul style="list-style-type: none"> • To what extent does RPC/CHCC influence teams' ability to achieve short-term outcomes, namely PCMH recognition? 	<ul style="list-style-type: none"> • PCMH Monitor • Administrative records (PCMH status) 	<ul style="list-style-type: none"> • Secondary analysis of PCMH Monitor and administrative data 	<ul style="list-style-type: none"> • PCMH recognition status 	<ul style="list-style-type: none"> • Descriptive statistics • Inferential statistics

In order to actually begin addressing evaluation questions, it is important to determine appropriate methodologies. Many evaluations do not rely on one single type of evaluation, but instead use a mixed-method approach, using both quantitative and qualitative methods. In the mixed-methods evaluation of RCP/CHC, both quantitative and qualitative approaches were used.

- **Quantitative methods** are methods used to collect numerical data that can be used to make calculations and draw conclusions in terms of percentages, proportions, and other values¹⁵. Examples of quantitative methods include surveys, structured observations, physiological tests, and record abstractions. The data are numerical in nature and answer questions that are quantifiable like “how much” or “to what extent”; commonly used quantitative analytical methods include descriptive statistics, one- and two-tailed t tests, correlations, cross-tabulations, and multiple regression or other advanced statistical models.
- **Qualitative methods** are methods used to collect descriptive information in the form of notes, verbal responses, transcripts, and written responses.¹⁵ Examples of qualitative methods include interviews, focus groups, document review, and unstructured observations. Qualitative data are usually in the form of notes or transcripts and answer questions that are descriptive like “why” or “how;” common qualitative analytical methods include participant observation and content, thematic, or pattern analysis.¹⁴
- An additional key decision is whether the evaluation will rely on existing, or secondary data sources, or if new data—primary data sources—will need to be collected. Your program monitoring and evaluation methods, data sources, and analyses should be driven by the evaluation question. We encourage you to consider the availability of existing data that will help you address your evaluation questions. This can help reduce the costs associated with data collection and the burden of conducting monitoring and evaluation activities on program staff and participants. Exhibit 8 describes the data sources and types of data used for the RPC/CHCC evaluation, as well as how each of the data sources contributed to the evaluation (e.g., addressed process or outcome evaluation questions).

Exhibit 8: Data Sources and Data Types Used in the RPC/CHCC Evaluation

Data Sources	Primary vs. Secondary	Qualitative vs. Quantitative	Process vs. Outcome
Practice-level, aggregate patient data for clinical process measures	Secondary	Quantitative	Outcome
Practice-level, aggregate patient data for clinical outcome measures	Secondary	Quantitative	Outcome
RPC/CHCC program implementation records <ul style="list-style-type: none"> • Live Learning Session attendance records • Data reporting records 	Secondary	Quantitative and Qualitative	Process
RPC/CHCC program documents	Secondary	Qualitative	Process
In-depth interviews with PAFP staff	Primary	Qualitative	Process
In-depth interviews with team members	Primary	Qualitative	Process
In-depth interviews with PAFP staff	Primary	Qualitative	Process

Interpreting and Disseminating Evaluation Findings and Implications for Program

When data collection and analysis are complete, it is important to interpret the evaluation data to determine what the data say about a program. This interpretation allows evaluators to give meaning to the data collected. During this process, it is important to engage stakeholders, as they can help review the data and provide additional context. In addition, the way in which evaluation results will be disseminated and shared should be considered prior to end of the evaluation period. Sharing lessons learned is a key step in evaluation of a program, as it can help to inform the field and build the evidence for the use of a particular strategy.

When reporting your findings, consider multiple communication channels for disseminating the findings (i.e., evaluation reports, executive summary, fact sheets/briefs, newsletter articles, formal and informal presentations, and journal publications). Finally, and perhaps most importantly, be sure to use your evaluation findings to identify ways to further improve your CHT. The findings of the RPC/CHCC evaluation inspired the creation and dissemination of this implementation guide which we hope public health practitioners will use to inform the development and implementation of similar programs.

For More Information

Appendix D includes a range of resources that you may wish to consult as you develop, implement, monitor and evaluate your RPC/CHC.

V. Conclusion

Overall Strengths of the Collaborative

In reviewing the use of the collaborative model as implemented by PAFP, some of the inherent strengths of the program include the following:

This strategy allows for broad-scale systems change within primary care, which can facilitate sustained improvement in utilization and patient health outcomes.

- The collaborative model can be a way to share new and unique strategies among primary care practices, engage staff in practice transformation, and improve the delivery of care.
- This collaborative model can be adapted in response to the changing needs of the participants.
- The faculty mentor model is successful because it operates on the paradigm that physicians appreciate and respond better to peer-to-peer feedback.

Key Recommendations for Implementation

Through the evaluation of the RPC/CHCC, the evaluation team was able to develop key recommendations for implementing this model in other settings. In summary, the recommendations are as follows:

Pair faculty mentors with teams appropriately. Faculty mentors paired to work with specific teams need to have experience and knowledge of the type of practice that team represents. For instance, CHCs and residency programs face different challenges regarding practice transformation; therefore, it is important to have faculty mentors that can provide tailored feedback and guidance understanding the practice context.

- *Identify the unique needs of the audience.* There is variability in the ways specific types of primary care practices operate and the factors that affect their efficiency and effectiveness. The unique characteristics of a collaborative's target audience should be considered when developing the information and the method by which the information is shared.
- *Ensure team and practice readiness for participation.* Because teams (and the practices they represent) may enter a collaborative at different stages of "readiness" for practice transformation, it may be helpful for program management to define a benchmark for teams to meet prior to joining the program. Ensuring a minimum level of readiness on certain criteria will benefit all teams and practices that participate because it will increase the likelihood of full and authentic participation in collaborative activities.
- *Ensure strong data management.* Transparency in data reporting across participants is key to the success of the collaborative because it facilitates teams' ability to compare their progress in achieving outcomes to that of other teams. This helps teams remain motivated and engaged in the collaborative over time. Therefore, a strong data management system is critical to implementing a collaborative. PAFP's creation and use of an in-house data warehouse ensures that teams can receive data in real time; data entry is user-friendly, which reduces the chance for data entry errors; and PAFP can make changes to the system rapidly and as frequently as necessary so that the system can evolve with the program over time.

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Appendix A. Glossary of Key Terms

Note: This glossary of terms consists of terminology and definitions as used in this guide. You may consider adapting this terminology to work with the staffing and stakeholders already in place in your community.

Key Term	Definition
Agency for Healthcare Research and Quality (AHRQ)	AHRQ is an agency that is a part of the U.S. Department of Health and Human Services (HHS) that seeks to improve the quality, safety, efficiency, and effectiveness of health care in America and sets standards for health care delivery. The RPC/CHCC took into account how AHRQ defines quality measures for health care delivery when determining the measures to include as a part of collaborative reporting among participating teams and practices.
Chronic Care Model (CCM)	The CCM is a model for health care systems to use when trying to improve the delivery of care for patients with chronic diseases. This model serves as the foundation to the key elements of the RPC/CHCC.
Clinical Outcome Measures	AHRQ defines clinical outcome measures as “a health state of a patient resulting from health care.” ¹ For the RPC/CHCC, participating teams report clinical outcome measure data for their diabetic patient populations; those measures include A1C, blood pressure, and LDL. Participating teams also report clinical outcome measure data for their IVD patient populations; those measures include blood pressure and LDL.
Clinical Process Measures	AHRQ defines clinical process measures as “a health care-related activity performed for, on behalf of, or by a patient.” ²⁺ For the RPC/CHCC, participating teams report clinical process measure data for their diabetic patient population; examples of those measures include a patient’s eye exam status, smoking status, nephrology exam status, foot exam status, and smoking cessation counseling received. Participating teams also report clinical process measure data for their IVD patient population; examples of measures include a patient’s blood thinner use, statin use, smoking status, and smoking cessation counseling received.
Community Health Centers	The Health Resources and Services Administration (HRSA) defines community health centers as “community-based and patient-directed organizations that serve populations with limited access to health care.” ^{3±} Community health centers are a kind of primary care practice that participates in the RPC/CHCC.
Electronic Health Records (EHRs)	EHRs are digital versions of patients’ paper charts that provide real-time, patient-centered records. ^{4§} Within the RPC/CHCC, teams are able to mine their practice’s EHR system to report data to the collaborative on a monthly basis. In addition, much of the support teams receive from faculty mentors and PAFP administrative staff includes tailored assistance related to operating their practice’s EHR system to improve accuracy in reporting and enhance the delivery of care.

* AHRQ: <http://www.qualitymeasures.ahrq.gov/tutorial/HealthOutcomeMeasure.aspx>

+ AHRQ: <http://www.qualitymeasures.ahrq.gov/tutorial/ProcessMeasure.aspx>

± HRSA: <http://bphc.hrsa.gov/about/index.html>

§ HealthIT.gov: <http://www.healthit.gov/providers-professionals/learn-ehr-basics>

Key Term	Definition
Evaluability Assessments	Evaluability assessments, or pre-evaluations, are used to guide investments in evaluation and research by helping to determine whether a rigorous evaluation study is feasible and merited for a particular program or policy. ^{5†}
Faculty Mentors	Within the RPC/CHCC, faculty mentors are family or internal medicine physicians who have previous experience with planning and implementing quality improvement initiatives within their practices and provide tailored guidance to assigned teams to provide guidance for implementing and measuring quality improvement initiatives, conducting systems redesign, and transforming practices into medical homes focused on patient centeredness.
Learning Collaborative	A learning collaborative like the RPC/CHCC is an educational model that brings together teams representing different practices to work together on specific clinical areas, guided by experts in process improvement, to facilitate the sharing and dissemination of effective strategies to improve quality of care.
Live Learning Sessions	Within the RPC/CHCC, Live Learning Sessions are 1-day, in-person, professional development meetings hosted by PAFP for all participating teams. Live Learning Sessions feature presentations and break-out sessions led by faculty mentors and other guest speakers who are considered experts in specific content areas. Sessions focus on an array of topics pertinent to residency programs and community health centers in terms of teaching participants how to transform their practice to improve the delivery of health care.
National Committee for Quality Assurance (NCQA)	NCQA is “a private, 501(c)(3) not-for-profit organization dedicated to improving health care quality.” ^{6‡} NCQA has developed quality standards and performance measures for a broad range of health care organizations and offers a number of accreditation programs related to health care quality.
NCQA Patient-Centered Medical Home (PCMH) Recognition	NCQA offers PCMH recognition to primary care providers that qualify based on NCQA’s rating criteria. The RPC/CHCC helps to guide participating teams through the NCQA PCMH recognition process to help practices achieve recognition and to improve the quality of care delivered.
National Quality Forum (NQF)	NQF is a nonprofit, nonpartisan, public service organization that reviews and recommends the use of standardized health care performance measures. ^{7±} The RPC/CHCC took into account NQF-endorsed measures for health care delivery when determining the measures to include as a part of the collaborative reporting among participating teams and practices.
NCQA Healthcare Effectiveness Data and Information Set (HEDIS)	HEDIS is tool that has been created by NCQA to measure performance on dimensions of health care service and delivery. ^{8§} Health care plans across the United States report on a number of HEDIS measures, which includes 80 measures across 5 domains of care to facilitate the comparison of performance among health care plans. The RPC/CHCC took into account NCQA HEDIS measures for health care delivery when determining the measures to include as a part of the collaborative reporting among participating teams and practices.

Leviton, L. C., & Gutman, M. A. (2010). Overview and rationale for the Systematic Screening and Assessment Method. In L. C. Leviton, L. Kettel Khan, & N. Dawkins (Eds.), *The Systematic Screening and Assessment Method: Finding innovations worth evaluating*. New Directions for Evaluation, 125, 7–31.

+ NCQA: <http://www.ncqa.org/AboutNCQA.aspx>

± NQF: http://www.qualityforum.org/who_we_are.aspx

§ NCQA: <http://www.ncqa.org/HEDISQualityMeasurement/WhatisHEDIS.aspx>

Key Term	Definition
Patient-Centered Medical Home (PCMH)	<p>PCMH is an approach to providing comprehensive and continuous care that facilitates partnerships between patients and physicians. The Joint Principles for the Patient-Centered Medical Home, endorsed by four national primary care physician associations, include the following:</p> <ul style="list-style-type: none"> • Personal physician: Patients have an ongoing relationship with physician • Physician-directed medical practice: A physician leads a team that takes collective responsibility for each patient • Whole-person orientation: Personal physician is responsible for considering a patient's entire health care needs • Coordinated and integrated care: Care delivered across all health care providers is coordinated centrally • Ensured quality and safety: Care team delivers health care to ensure a patient's safety • Enhanced access to care: Systems are created to expand patient access • Payment: Payment structure recognizes the value of PCMH^{9*}
Plan, Do, Study, Act (PDSA)	PDSA refers to a strategy that can be used to direct the selection and testing of improvement strategies prior to full implementation of the change within a primary care setting, ensuring there is potential for achieving a specific goal. ¹⁰⁺ In the RPC/CHCC, teams are required to work together to apply the information obtained from the Live Learning Session to inform the development of PDSAs to implement in their practice.
Practice Transformation	For the purpose of the RPC/CHCC, practice transformation refers to the procedural processes that a practice undertakes to become a medical home.
Primary Data	Primary data is information that has been collected directly by an entity conducting specific research. For the evaluation of the RPC/CHCC, CDC and ICF collected primary data to contribute to the evaluation analysis.
Qualitative data	Qualitative data are usually in the notes or transcripts and answer questions that are descriptive (explain why or how); common qualitative analytical methods include participant observation and content, thematic, or pattern analysis.
Quality Improvement (QI) Teams	QI teams refer to individuals who represent a primary care practice (either a residency program or community health center) and participate directly in RPC/CHCC activities. Each QI team is composed of at least one attending physician, one resident, and one nonmedical staff person; they work together to plan and conduct quality improvement within their respective practices.
Quantitative data	Quantitative data are numerical in nature and answer questions that are quantifiable (specify how much or to what extent); commonly used quantitative analytical methods include descriptive statistics, one- and two-tailed t tests, correlations, cross-tabulations, and multiple regression or other advanced statistical models.

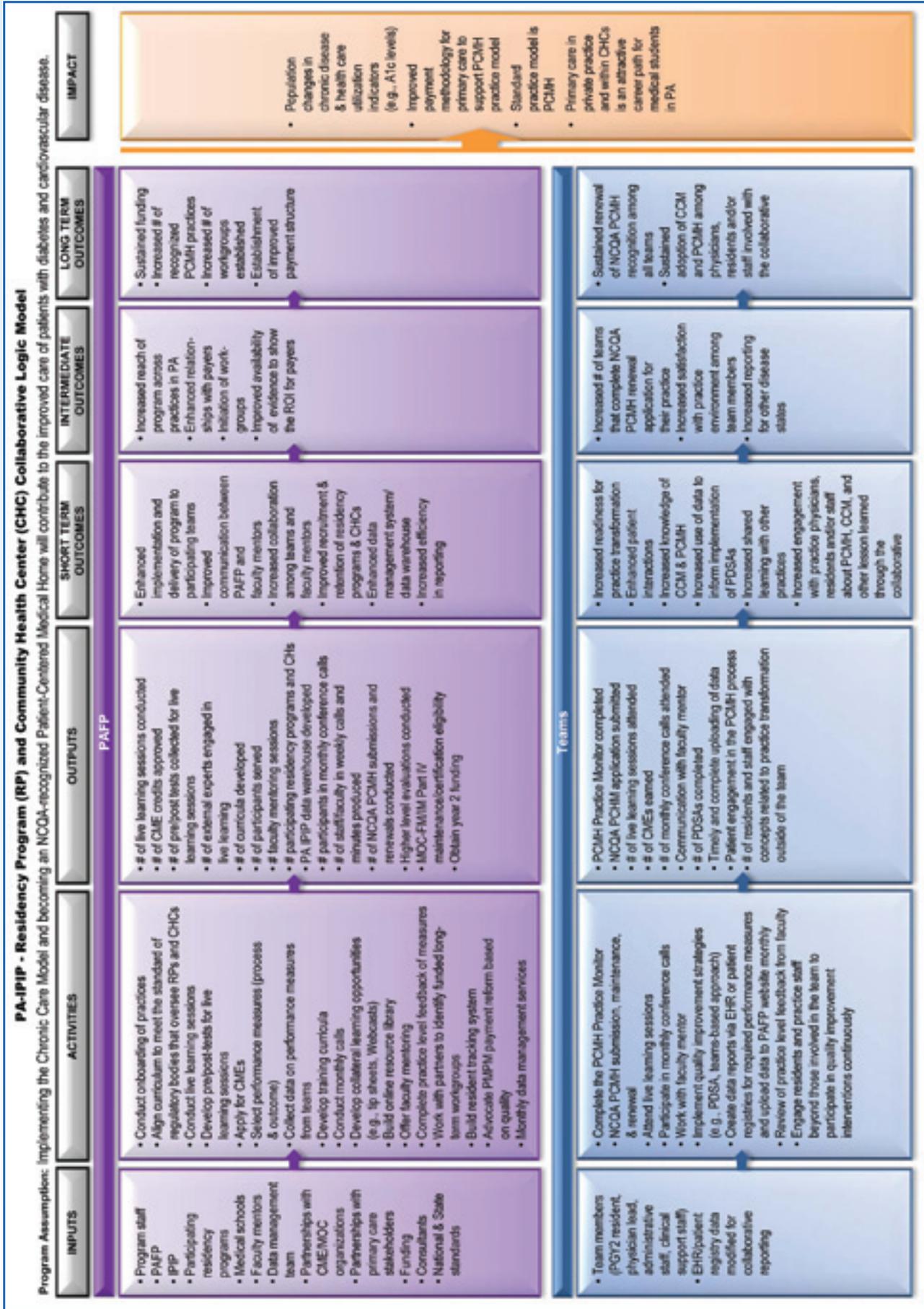
American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, & American Osteopathic Association. (2010). Joint principles for medical education of physicians as preparation for practice in the patient-centered medical home. Retrieved January 11, 2013, from http://www.acponline.org/running_practice/pcmh/understanding/educjoint-principles.pdf

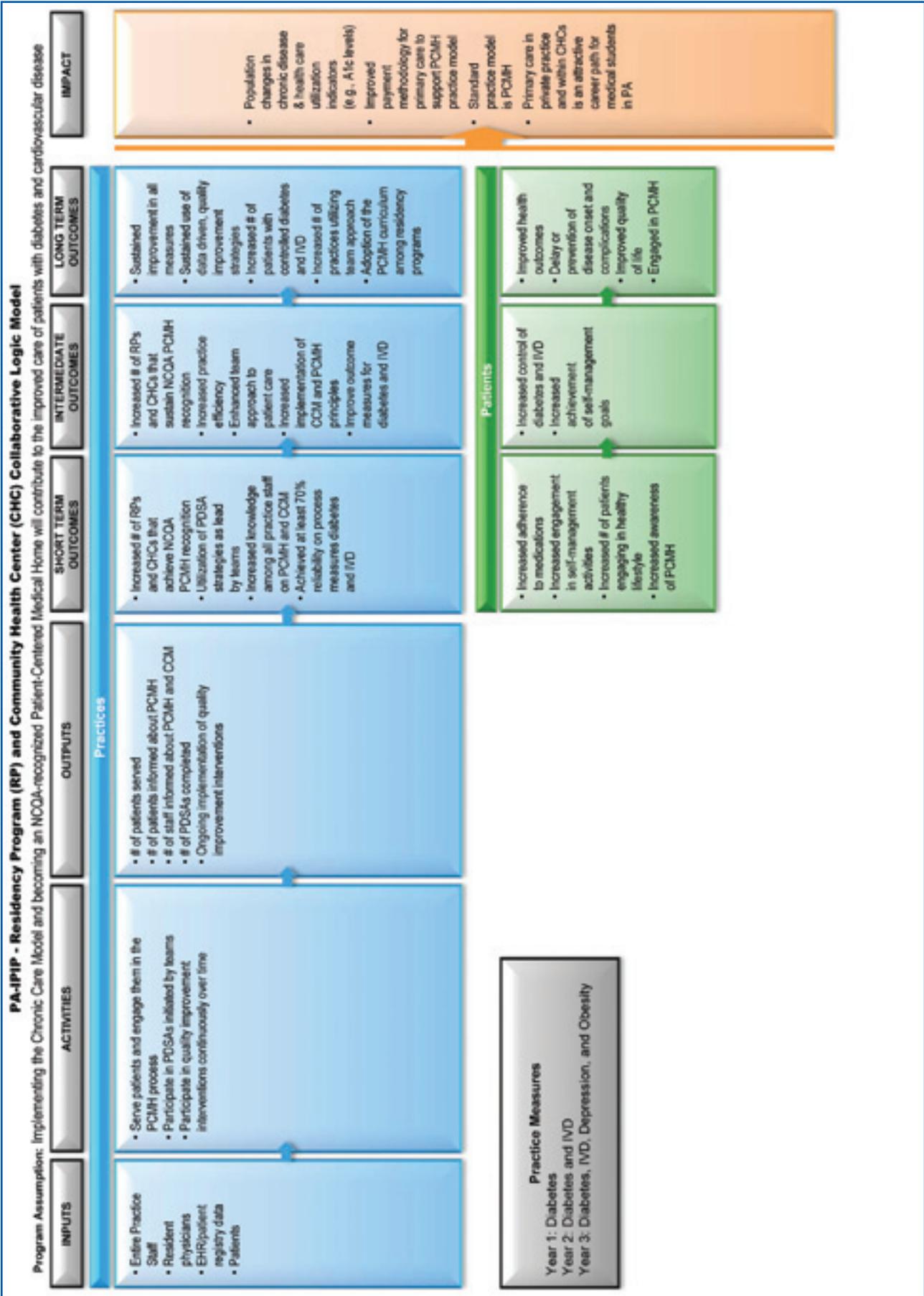
+ Langley, G. L., Nolan, K., M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). The improvement guide: A practical approach to enhancing organizational performance (2nd ed.). San Francisco, CA: Jossey-Bass Publishers.

§ NCQA: <http://www.ncqa.org/HEDISQualityMeasurement/WhatisHEDIS.aspx>

Key Term	Definition
Residency Programs	A residency program is a postgraduate-level medical training program in which residents who received a medical degree train under a licensed medical physician to gain hands-on experience. Family medicine and internal medicine residency programs that participate in the RPC/CHCC focus on providing residents with in-depth training related to practicing family or internal medicine. Residents typically participate in the residency program for 3 years before moving on to complete a fellowship program or practice medicine in the field.
Secondary Data	Secondary data is information that has been collected by an entity other than those that are directly conducting a specific research project. For the evaluation of the RPC/CHCC, CDC and ICF used secondary data as collected by PAFP to contribute to their evaluation analysis.
Team-Based Care	Team-based care is the provision of health services to patients by at least two health providers who work with patients and caregivers to achieve coordinated care. ^{11*}

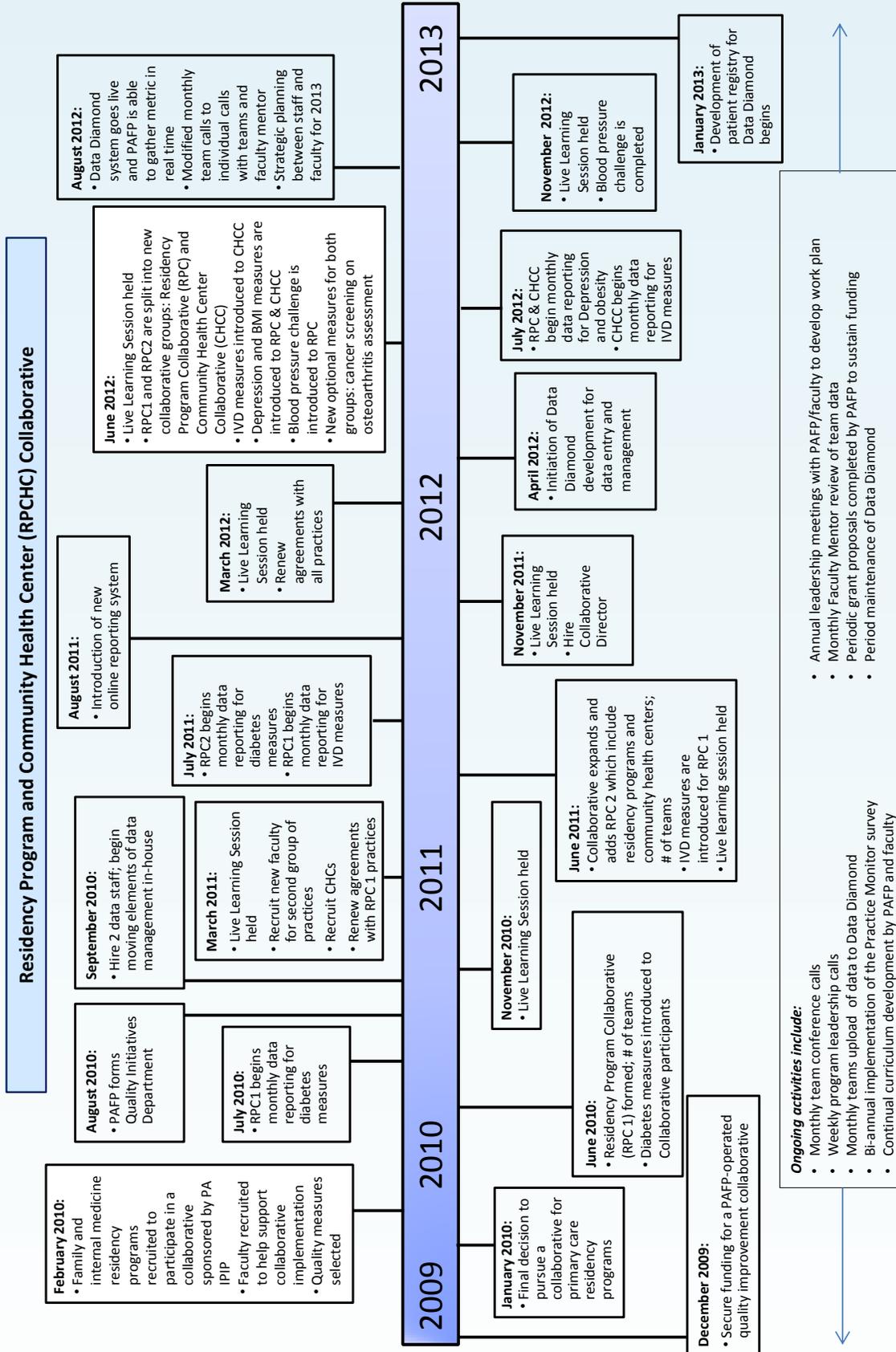
Appendix B. RPC/CHCC Logic Model





Appendix C. RPC/CHCC Implementation Timeline

Implementation Timeline



Appendix D. Resources

This appendix includes a selection of links to resources that may be helpful to you in developing, implementing, and evaluating a Residency Program Collaborative or Community Health Center Collaborative in your community.

General Resources	
Chronic Care Model (CCM)	<p>The Chronic Care Model uses a systematic approach to restructuring medical care to create partnerships between health systems and communities. Learn more about the model at:</p> <p>http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2</p>
Evaluation Resources	<p>The Centers for Disease Control and Prevention’s Division for Heart Disease and Stroke Prevention (DHDSPP) has developed evaluation tools and resources to assist state health departments, tribal organizations, communities and partners in their programmatic and evaluation efforts. While many of the tools and resources were developed primarily for use by DHDSPP-funded programs, they may also be of interest to entities not funded by DHDSPP or working in other chronic disease areas.</p> <p>http://www.cdc.gov/DHDSPP/evaluation_resources.htm</p>
Evidence-Based Practices	<p>A manuscript to learn about a conceptual framework for planning and improving evidence-based practices. The framework is an intersection of public health impact and quality of evidence to look at a continuum of evidence-based practices—from emerging, to promising, to leading, to best practices.</p> <p>http://www.cdc.gov/pcd/issues/2013/13_0186.htm</p>
National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home (PCMH)	<p>The patient-centered medical home is a way of organizing primary care that emphasizes care coordination and communication to transform primary care into “what patients want it to be.” Medical homes can lead to higher quality and lower costs, and can improve patients’ and providers’ experience of care. NCQA PCMH Recognition is a way to transform primary care practices into medical homes. Learn more at:</p> <p>http://www.ncqa.org/Programs/Recognition/PatientCenteredMedical-HomePCMH.aspx</p>
Team-Based Care	<p>This Web site presents an overview of the Team-Based Care model and the Community Preventive Task Force’s findings regarding team-based care as a strategy to improve blood pressure control.</p> <p>http://www.thecommunityguide.org/cvd/teambasedcare.html</p>

Footnotes

[†] AHRQ: <http://www.qualitymeasures.ahrq.gov/tutorial/HealthOutcomeMeasure.aspx>

⁺ AHRQ: <http://www.qualitymeasures.ahrq.gov/tutorial/ProcessMeasure.aspx>

[±] HRSA: <http://bphc.hrsa.gov/about/index.html>

[§] HealthIT.gov: <http://www.healthit.gov/providers-professionals/learn-ehr-basics>

[†] Leviton, L. C., & Gutman, M. A. (2010). Overview and rationale for the Systematic Screening and Assessment Method. In L. C. Leviton, L. Kettel Khan, & N. Dawkins (Eds.), *The Systematic Screening and Assessment Method: Finding innovations worth evaluating. New Directions for Evaluation*, 125, 7–31.

⁺ NCQA: <http://www.ncqa.org/AboutNCQA.aspx>

[±] NQF: http://www.qualityforum.org/who_we_are.aspx

[§] NCQA: <http://www.ncqa.org/HEDISQualityMeasurement/WhatisHEDIS.aspx>

[†] American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, & American Osteopathic Association. (2010). *Joint principles for medical education of physicians as preparation for practice in the patient-centered medical home*. Retrieved January 11, 2013, from http://www.acponline.org/running_practice/pcmh/understanding/educjoint-principles.pdf

⁺ Langley, G. L., Nolan, K., M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The improvement guide: A practical approach to enhancing organizational performance* (2nd ed.). San Francisco, CA: Jossey-Bass Publishers.

[†] Naylor, M. D., Coburn, K. D., Kurtzman, E. T., et al. (2010, March 24–25). *Inter-professional team-based primary care for chronically ill adults: State of the science*. Unpublished white paper presented at the ABIM Foundation meeting to Advance Team-Based Care for the Chronically Ill in Ambulatory Settings, Philadelphia, PA.

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