Developing and Sustaining Perinatal Quality Collaboratives

A Resource Guide for States

The Perinatal Quality Collaborative Guide Working Group

This report is the product of a dedicated group of Perinatal Quality Collaborative (PQC) experts from across the nation, chosen for their extensive experience with quality improvement organizations and initiatives and their varied perspectives. The process of developing this resource included a November 2014 in-person gathering of Working Group members in Atlanta, several small group conference calls over a period of four months, and the collective review and editing of drafts. The goal of this working group was to provide lessons learned and share real-life experiences in the development of their respective state PQCs or their work to support perinatal quality improvement. The Centers for Disease Control and Prevention's Division of Reproductive Health is grateful for their enthusiastic participation and responsiveness.

Working Group Members

Ann E.B. Borders, MD, MPH, MSc
Illinois Perinatal Quality Collaborative

Peter Cherouny, MD
Institute for Healthcare Improvement

Hafsatou Diop, MD, MPH
Massachusetts Perinatal Quality Collaborative

Kelly Ernst, MPH
March of Dimes

Jeffrey B. Gould, MD, MPH
California Perinatal Quality Care Collaborative

Peter Grubb, MD
Tennessee Initiative for Perinatal Quality Care

Munish Gupta, MD, MMSc
Neonatal Quality Improvement Collaborative of Massachusetts

Jay Iams, MD
Ohio Perinatal Quality Collaborative

Marilyn Kacica, MD, MPH
New York State Perinatal Quality Collaborative

Elliott Main, MD
California Maternal Quality Care Collaborative

Carole Lannon, MD, MPH
Ohio Perinatal Quality Collaborative

Martin McCaffrey, MD, CAPT USN (Ret)
Perinatal Quality Collaborative of North Carolina

Barbara Murphy, RN, MSN
California Maternal Quality Care Collaborative
California Perinatal Quality Care Collaborative

William M. Sappenfield, MD, MPH
Florida Perinatal Quality Collaborative

CDC Staff
Zsakeba Henderson, MD, FACOG
Danielle B. Suchdev, MPH

Westat Staff
Melanie Chansky, MAA
Brittney Francis, MPH
Saloni Sapru, PhD

Acknowledgments

Table of Contents

Contents (continued)

Introduction and Purpose

Perinatal quality collaboratives, or PQCs, are networks of perinatal care providers and public health professionals working to improve health outcomes for women and newborns through continuous quality improvement. Across the United States, organizations and individuals with an interest in improving perinatal health outcomes come together to develop these collaboratives to address their concerns. Many of these collaboratives are organized at the state level to allow for effective partnerships with public health agencies and other state-based resources and systems.

The Centers for Disease Control and Prevention (CDC) recognizes the value that PQCs can bring to improving perinatal health and provides a variety of online resources to support them. In 2011, CDC provided funding to support state-based collaboratives in California, New York, and Ohio and in 2014 that support grew to include North Carolina, Illinois, and Massachusetts as well. Still, states without PQCs, or those with newly emerging collaboratives, may need more help getting started or furthering their efforts, which is why this Guidance Document was created.

This document is intended to provide assistance to states that may wish to form PQCs or that are facing challenges with any aspect of PQC development. Although most users of this guide will probably be in the early stages of collaborative development, this document may also be helpful to existing PQCs who want to enhance their efforts. Each state has unique

> For a general introduction, you can view CDC's Collaboratives 101 webinar featuring PQC leaders from New York and Ohio discussing their purpose, basic structure, and past successes.

issues to address, but there are common challenges and best practices that can be applied to collaborative development across regions. This guide provides information on:

- **Starting a Statewide Collaborative.** Chapter 1 focuses on the activities that need to occur during the planning process to start a collaborative.

- **Launching Initiatives.** Chapter 2 provides information about selecting and beginning to implement quality improvement projects.

- **Data and Measurement.** Chapter 3 discusses the data that you will use to show the impact of your collaborative's work, including how to select suitable measures and how to find data to support them.

- **Quality Improvement Methods.** Chapter 4 offers information about several models and tools often used to support quality improvement projects.

- **Dissemination.** Chapter 5 focuses on planning to make sure that different groups receive information about your collaborative and what it does.
- **Sustainability.** Chapter 6 aims to provide guidance on how to grow and sustain your collaborative's work.

This guide is an online resource that includes hyperlinks to other useful resources for perinatal quality improvement work.

More information on PQCs can also be found from [CDC's Division of Reproductive Health.](#)

1. Starting a Statewide Collaborative

A good deal of preparation needs to occur before a collaborative can be launched. Conducting a thorough planning process will ensure that you have the people and resources to give you the best chance of launching a successful and sustainable collaborative. This chapter aims to provide guidance on the activities that need to occur during the planning process for starting your PQC, including identifying the right people to be involved and ensuring their buy-in, establishing your identity, and securing funding.

1.1 Identifying and Engaging Key Players

The success of your PQC will rely heavily on ensuring that you have the right people involved. Although a collaborative can begin without the involvement of *all* groups listed below, these groups will be engaged as your collaborative grows and develops. Key players include:

- **Leaders and Champions.** Engaged and committed leadership is crucial for developing, implementing, and disseminating the collaborative's mission. Individuals who can serve as leaders and champions for the PQC must be engaged early in the process of developing the collaborative. Their efforts will include educating other providers on the importance of a collaborative at the state level; engaging patients, families, and stakeholders; and developing and leading initiatives. Identifying leaders who are well-respected by their colleagues is important, as these individuals will serve not only as content experts (in obstetrics, neonatology, patient/family partnership, or quality improvement), but will also prove critical for raising the credibility of the collaborative among state leaders, healthcare providers, and other key stakeholders.

> **Your PQC leadership should:**
> - Be *passionate* about the issues
> - Be *well-known and respected*
> - Understand the *role of stakeholders*
> - Understand the need to *lead to improve care*
> - Know that *change is local* and that the PQC needs to *support capacity building to make local changes*

- **Participants.** Participants are the people and/or organizations, such as hospitals, that implement your initiatives. Engaging participants is critical for the success of your PQC, because without their willingness to participate in quality improvement initiatives, the collaborative will not be successful. Participant engagement is discussed in more detail in Chapter 2 of this document.

- **Operations Staff.** A collaborative also relies upon core staff to ensure that its day-to-day operations run smoothly. The collaborative's core team may start out small – such as an executive director and a project manager – but additional staff may be added as the collaborative grows and adds more activities and complexity. (Funding for these positions is discussed later in this chapter.) Operations staff may include:

  - **Executive Director.** This person is often a clinical champion who oversees and guides the collaborative.

  - **Project Manager.** This person works closely with the executive director to implement the collaborative's activities and maintain its day-to-day functions.

  - **Patient/Family Partnerships Director.** This person ensures that patients and families are meaningful partners in the planning, execution, and evaluation of the work. He or she may also work directly with participants, providing resources and support to assist with their patient/family engagement efforts.

  - **Project Administrator.** This person may support the project manager in administrative tasks such as handling vendor payments, sending newsletters, arranging meetings, answering emails and phone calls, updating website content, etc.

  - **Data Manager.** This person manages the data system that your collaborative uses to gather data from its initiatives. He or she may also be responsible for conducting statistical analyses and generating reports.

  - **IT/Programmers.** These individuals will provide further support for your collaborative's website and/or data system, particularly when coding is required.

How you staff these staff positions depends on the size of your collaborative, what types of activities you undertake, and what resources you have available. Your specific needs will also determine whether these positions should be full-time or part-time and whether you need them immediately upon launch or can add them as the collaborative grows.

> In CDC's Building & Sustaining a Collaborative webinar, Barbara Murphy of the California Perinatal Quality Care Collaborative and Marilyn Kacica of the New York State Perinatal Quality Collaborative describe establishing an expert workgroup, communication strategies, and past experiences and challenges with funding PQC efforts.

- **Stakeholders.** Stakeholders, broadly, are individuals or organizations that have an interest in the work of the PQC. This interest can take many forms, including having a similar mission, or receiving benefits from the improved quality of care

that the collaborative is aiming to achieve. Some stakeholder groups may have access to resources that can contribute to the development and sustainability of your collaborative. These groups will engage more closely with your PQC if their perspective is reflected in your collaborative's mission and initiatives.

Stakeholders that are often engaged by PQCs include:

- — Patients and families;
- — State departments of health;
- — Universities/academic medical centers;
- — Non-profit and/or advocacy organizations (such as March of Dimes and the Association of Maternal and Child Health Programs);
- — State-based hospital associations;
- — State representatives of national organizations (such as the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, the Association of Women's Health, Obstetrical and Neonatal Nurses, and the American Hospital Association); and
- — Payers (including private insurers and state Medicaid agencies).

- **Patients and Families.** Patient and family engagement can play a large role in the success of quality initiatives and is increasingly recognized as key to improving quality and safety in healthcare. PQC participants may partner with patients and family members who have experienced care in their institutions to serve a number of functions as part of their quality improvement team. Roles for patients and family members may include:

  - — Educating clinical/content experts regarding the patient/family perspective;
  - — Identifying pieces of the process that are confusing or missing;
  - — Participating in information/data gathering;
  - — Discussing and analyzing findings;
  - — Assisting in developing action plans and making recommendations;
  - — Contributing to the design and content of educational materials; and
  - — Assisting with pilot testing new materials and processes.

1.2   Ensuring Buy-In

After identifying the groups who need to be involved in your collaborative, you will need to gain their support. But they will be more likely to support the new effort if they care about the

benefits they will gain from being part of the collaborative. Each group may value something different, so you will need to tailor your outreach accordingly to show what your collaborative offers. Examples of what different constituencies may value include:

- **Hospitals.** Hospitals are concerned with improving individual outcomes, improving quality of care, and cost-effectiveness and reducing variability in care. All of these can be impacted by making quality improvements, such as those that your PQC wants to implement. Your PQC can bring not only the opportunity to participate in quality improvement (QI) initiatives, but also an infrastructure through which the hospital can increase its capacity to do QI work. In addition, the rapid turn-around data collected through PQC initiatives can quickly show that the initiatives are making a difference, and can provide up-to-date information to help drive decision-making by hospital administrators.

- **Payers and Purchasers.** Organizations that provide health insurance (including private insurers and state Medicaid agencies), as well as employers and other organizations that purchase health insurance, value improved health outcomes that lead to cost savings. Quality improvement initiatives can accomplish both of these goals. For example, a QI initiative focused on preventing central line-associated bloodstream infections in the neonatal intensive care unit could result in shorter length of hospital stay for neonates. An initiative focused on reducing early elective deliveries may lead to cost savings by reducing the number of C-sections. For payers and purchasers, showing the link between the QI initiative and healthcare cost is important. You may choose to contact other collaboratives that have implemented the same or similar initiatives to see if they have cost savings data that they can share, or recommendations for consultants (such as healthcare economists) who can help with conducting these analyses.

- **Malpractice Insurers.** Some PQCs involve medical malpractice insurers in the collaborative. These groups can be quite interested in perinatal quality improvement because obstetrics is often their largest source of malpractice lawsuits (and thus, cost). For malpractice insurers, the value of a PQC is that better care quality can lead to better patient outcomes, which will likely lead to fewer malpractice lawsuits.

These are only three examples of ways you can tailor your message to meet the needs of different organizations. The important point is that you can more easily gain the buy-in of each group by making it clear how the PQC will specifically benefit them.

1.3   Establishing Your Identity

Along with the other activities you will undertake while starting your collaborative, you need to develop your PQC's identity. Stakeholders, including patients and families, need to know who you are, what you do, and even more fundamentally, that you exist. Your identity encompasses not only your mission and goals, but also your physical presence (likely in the form of a website).

Focus, Mission, and Goals. PQCs have a clinical focus on health outcomes relating to the mother, the baby, or both. For example, the California Maternal Quality Care Collaborative focuses solely on maternal outcomes, the Neonatal Quality Improvement Collaborative of Massachusetts focuses on neonatal outcomes, and the Ohio Perinatal Quality Collaborative focuses on both. These focus areas determine the types of initiatives that your collaborative will implement. Selection of a clinical focus often occurs naturally, based upon the most pressing perinatal health issues in your state or region. Still, the availability of clinical leaders and financial resources can also impact your collaborative's decisions about where to focus. The collaborative's focus should be reflected in its mission statement and will prove important for engaging stakeholders, patients, and families.

Having a clear sense of your collaborative's focus will help with articulating your mission and goals. Developing a mission statement is an important early step for your collaborative. The statement needs to succinctly describe *what* your collaborative is trying to accomplish, *how* it will accomplish its goals, and *whom* it hopes to impact. This mission is fundamental to your collaborative. It should guide your future initiatives and communicate who you are to patients, families, stakeholders, and participants.

Your collaborative may also wish to create a series of goals that communicate your intentions with more specificity. Goals should support your mission statement and be clearly linked to it. Ideally, the collaborative should have only a small number of goals (3 to 5) in order to maintain its focus and to use resources wisely.

When communicating with your target audiences and/or the general public, you do not necessarily have to present a clearly labeled mission statement with a list of goals, although you can take that approach. You simply need to make sure that you clearly communicate who you are and what you do. Figure 1 below provides examples taken from the websites of several PQCs to show the range of ways that your identity could be presented.

Branding and Developing an Online Presence. Your collaborative needs to establish its identity in other, more basic ways, starting with deciding upon its name. Once you have a name to signal your existence, you can undertake other branding activities, such as creating a logo and establishing a website. Setting up even a basic website increases credibility and is important for sustainability. It can initially be used to communicate the collaborative's mission and contact information, but as your PQC grows, it can facilitate dissemination efforts, can host information about your initiatives and your stakeholders, and can even facilitate data collection and communication with initiative participants. You may wish to visit the websites of other PQCs to see examples of what they have done. Chapter 5 provides more information about ways that your PQC can establish its online presence.

Figure 1. Mission and goal statements of three Perinatal Quality Collaboratives

Florida Perinatal Quality Collaborative (FPQC)

Mission: Advance perinatal health care quality and patient safety for all of Florida's mothers and infants through the collaboration of all FPQC stakeholders in the development of joint quality improvement initiatives, the advancement of data-driven best practices, and the promotion of education and training.

Goals:

- Engage perinatal health care stakeholders in the design, implementation, and evaluation of data-driven processes for population- and evidence-based, value-added, cost-effective perinatal health care quality improvement efforts that enhance patient safety outcomes.

- Encourage perinatal health care providers to educate and empower families and patients to become involved for their own well-being, as well as for the welfare of their communities.

- Build and sustain consensus, awareness, and support across the state and nation regarding the value and benefits of active engagement with the FPQC in proposing, exploring, selecting, and launching new quality improvement initiatives.

- Become a nationally recognized leader and role model in perinatal health care advancements through our effective evidence-based protocols for a variety of quality improvement processes.

- Acquire the financial resources necessary for the ongoing development and sustainment of the FPQC.

Massachusetts Perinatal Quality Collaborative (MPQC)

The MPQC is a cooperative voluntary program involving Massachusetts maternity facilities and key perinatal stakeholders, designed to promote the sharing of best practices of care.

Success will be based on outcome measures generated from individual healthcare facilities and state agencies.

New York State Perinatal Quality Collaborative (NYSPQC)

The New York State Perinatal Quality Collaborative (NYSPQC) is an initiative led by the New York State Department of Health (NYSDOH) Division of Family Health (DFH). The NYSPQC aims to provide the best and safest care for women and infants in New York State (NYS) by collaborating with birthing hospitals, perinatal care providers, and other key stakeholders to prevent and minimize harm through the translation of evidence-based practice guidelines to clinical practice.

1.4　　　Securing Funding

Each collaborative will require a different amount of funding to get started, and the amount that is "right" for you will depend on what you are hoping to accomplish and how many activities/initiatives you plan to support. Under the right circumstances, where there are committed leaders who are willing to volunteer their time to work together, some PQCs have launched with virtually no funding (although that is rare). Most likely, you will need to find at least a small amount of funding to support your collaborative's launch.

Available funding sources vary from state to state, but the agencies (or types of agencies) that have supported PQCs include:

- Academic institutions, such as local universities;
- Federal agencies, such as CDC and the Health Resources and Services Administration;
- Local chapters of national organizations such as the American Academy of Pediatrics; American College of Nurse Midwives; Association of Women's Health, Obstetrics, and Neonatal Nurses; and March of Dimes;
- Private foundations;
- Private health insurers;
- State agencies, including departments of health and Medicaid agencies; and
- State hospital associations.

1.5　　　Start-Up Case Studies

Below we provide examples of four collaboratives that launched with different funding levels – minimal, limited, moderate, and substantial – to show how they started and how they used their initial funding.

- **Minimal Funding (under $10,000) – Neonatal Quality Improvement Collaborative of Massachusetts (NeoQIC)/Massachusetts Perinatal Quality Collaborative (MPQC).** The perinatal quality collaborative in Massachusetts began in neonatology, with conversations between leading neonatologists representing the ten level III NICUs in the state, representatives from the Massachusetts Department of Public Health, and outside consultants from other collaboratives and networks occurring in 2001. The collaborative, however, did not begin in earnest until 2006-2007. Its initial approach focused on clinical outcomes and quality improvement rather than the PQC's organizational

structure. The first meeting of NeoQIC was held in conjunction with an existing annual neonatology conference sponsored by one of the state's NICUs. General agreement was reached on a number of topics, including basic data sharing using Vermont Oxford Network (VON) data, a commitment to QI education, general principles of membership, and a decision to focus on nosocomial infections and retinopathy of prematurity as initial collaborative projects. Importantly, a membership principle agreed to at this first meeting was transparency between members with regards to quality process and outcome measures. Over the next several years, NeoQIC continued and gradually expanded its work, using a fairly low-cost and administratively simple structure. Two yearly meetings served as the foundation for NeoQIC's work; both meetings were organized as additions to existing regional neonatology conferences, with the host of each conference absorbing the modest additional costs. Baseline comparative data was obtained through an annual state report from VON, with the cost of this report initially funded through seed money from one of the NeoQIC hospitals and then annually through a grant from Boston Children's Hospital. Participation in and leadership of NeoQIC meetings and projects was voluntary and was based on interest and enthusiasm of individuals; no salary support was provided and administrative functions were performed by NeoQIC members. A relatively straightforward "Principles of Membership" document was developed and agreed to by all members, with the primary principles being: 1) use of data only for quality improvement and not for commercial purposes, and 2) transparency of data within the organization but privacy of data to external groups.

- **Limited Funding ($10,000-$100,000) – Florida Perinatal Quality Collaborative (FPQC).** With support of state-wide partners, the FPQC was launched with a small seed grant from the March of Dimes and support from in-kind university faculty. At the same time as supporting the state development, implementation, and coordination of a new multi-state March of Dimes initiative, the FPQC leaders: 1) pulled together state partners to meet and plan the collaborative, 2) began collaborative meetings and activities, 3) visited participating hospitals when possible, and 4) explored other new initiatives and searched for funding. The FPQC then used the results from their initial initiatives to identify new initiatives and solicit additional grant funding that was used for staffing, hosting conferences, and developing new initiatives. These statewide partners became the FPQC steering committee, which meets periodically to provide guidance and feedback.

- **Moderate Funding ($100,000-$499,999) – Illinois Perinatal Quality Collaborative (ILPQC).** The ILPQC started with a small Children's Health Insurance Program Reauthorization Act quality grant from the Centers for Medicare and Medicaid Services, through the state Medicaid program. They used this initial funding to hire a part-time project coordinator to begin to organize the collaborative and its leaders and for travel to visit well-established PQCs. Most of the initial provider involvement was done in-kind. After organizing and gaining

information, the ILPQC applied for a grant to host a conference, which was used to engage state leaders and providers.

■ **Substantial Funding ($500,000+) – California Perinatal Quality Care Collaborative (CPQCC).** The CPQCC was initially funded with a planning grant from the David and Lucile Packard Foundation. This initial funding was used to support PQC leaders as they traveled around the state and held meetings to build relationships with various stakeholders, including state agencies and both private and academic medical centers. They also developed basic infrastructure for their collaborative, including a meeting structure and an executive committee. CPQCC initially relied on the Vermont Oxford Network for data management. When their initial funding ran out, CPQCC was briefly supported by Stanford University (their fiscal intermediary) to allow them to remain functional until they were able to fund themselves sustainably through membership dues.

1.6 Resources

The following resources and articles may be helpful to consult to provide further information on starting a collaborative:

■ *Building Local Capacity for Improvement: A Resource Guide for Chapters*. 2006. American Academy of Pediatrics. http://www2.aap.org/member/chapters/caqi/Chapter_RG.pdf

■ *Establishing a Child Health Improvement Partnership: A How-To Guide*. 2015. Vermont Child Health Improvement Program. https://www.uvm.edu/medicine/nipn/documents/EstablishingaChildHealthIP-AHow-toGuide_000.pdf

■ Gould J (2010). The Role of Regional Collaboratives: The California Perinatal Quality Care Collaborative Model. *Clinics in Perinatology* 37: 71-86.

■ *Implementing a State-Level Quality Improvement Collaborative*. October 2014. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/quality-resources/tools/mednetresourceguide/mednetresourcedguide.pdf

■ *Partnering to Improve Quality and Safety: A Framework for Working with Patient and Family Advisors*. 2015. Hospitals in Pursuit of Excellence. http://www.hpoe.org/resources/hpoehretaha-guides/1828

■ *Perinatal Improvement Community*. Institute for Healthcare Improvement. http://www.ihi.org/engage/collaboratives/PerinatalImprovementCommunity/Pages/default.aspx

2.   Launching Initiatives

Quality improvement collaboratives are driven and defined by their initiatives. These initiatives guide what your PQC is trying to accomplish, and of how you are trying to make a positive impact on perinatal care. Initiatives must be chosen carefully so that they have the best opportunity to make that positive impact, which can have the added benefit of bolstering support for the collaborative itself. The goal of this chapter is to provide guidance on launching these new initiatives, from the early stages of selecting a topic and identifying project leadership, to the eventual final stages of wrapping up the work and supporting sustained practice change.

2.1   Topic Selection

The selection of a topic that can lend itself to a successful initiative is crucial, both because PQC resources will need to be used to support the initiative, and because the initiative's success can impact the credibility of the PQC itself. You can begin by assessing a topic's potential for success using several helpful criteria. The criteria proposed below come from the Institute for Healthcare Improvement's *Breakthrough Series Methods to Create and Sustain Change in Healthcare*, as well as from PQC leaders. Keep in mind that a successful initiative may not incorporate all of these criteria, but will likely include a majority of them.

Criteria for evaluating potential initiative topics include:

- **Public Health Burden/Population Impact of the Issue.** This refers to the actual scope of the issue being addressed. How many mothers and /or babies are impacted each year? Generally, initiatives are created to address significant and costly problems that affect a large number of people, but that may not always be the case. Still, for a recently formed PQC, addressing a highly visible problem that impacts a large number of patients can help establish participant interest.

- **Clinician Enthusiasm and Existence of Champions.** An initiative cannot succeed without clinician support. Clinicians must be enthusiastic enough about the topic to be willing to make practice changes to support it. When assessing clinician enthusiasm, it is important to consider: 1) whether there are providers who are passionate and/or knowledgeable about the issue who would be willing to serve as champions, and 2) whether clinicians more broadly are enthusiastic about and willing to make practice changes to address the issue. Providing an opportunity for hospital teams to vote on initiatives can also help to assess provider enthusiasm and readiness for change.

> The Mississippi Perinatal Quality Collaborative (MSPQC) selected its first initiative at an in-person annual meeting by allowing its membership to vote on their preferences. Prior to the meeting, MSPQC's steering committee had selected two neonatal projects (Golden Hour and Central Line Associated Blood Stream Infection Reduction) and two obstetrical projects (Obstetrical Hemorrhage and Acute Severe Hypertension during Pregnancy) to present for a vote. The collaborative's membership ultimately selected Golden Hour and Acute Severe Hypertension during Pregnancy as their first initiatives.

- **Availability of Funding.** Without funding to support it, your collaborative may find it challenging to launch a new initiative. Many PQCs operate with limited funding, meaning that there are few resources to put toward new initiatives. Every expenditure of resources has to be carefully considered. The ability to leverage other intitiatives or find external funding (such as grants) to support an initiative topic allows for other PQC resources to be conserved or used elsewhere.

- **Alignment With State and National Priorities/Projects.** It will be easier for your initiative to garner support if the topic is aligned with the priorities of key organizations (such as membership organizations that represent relevant clinicians, national advocacy groups, or state health departments). Alignment with the priorities of these organizations can help to bring those agencies to the table as key partners in the initiative, because they may see the local PQC work as an extension of their larger goals.

- **Knowledge About and Benchmarks for Best Practice.** Another method for increasing the credibility of your initiative is to select a topic with existing knowledge and benchmarks about best practices that can address the issue. If the topic has been studied, you may be able to find publications, policy statements, or practice guidelines related to it. Sources of benchmark information may vary depending on the topic, but could include organizations such as the National Quality Forum, the American Congress of Obstetricians and Gynecologists, and other similar groups.

- **Evidence-Based or -Supported Interventions Available.** Relying on interventions that have been shown to be effective helps to underscore your

PQC's commitment to making a positive impact. The existence of evidence to support the initiative's work contributes to its credibility and increases the likelihood of participant buy-in. Also, your work could be used to enhance the evidence base for these interventions and demonstrate feasibility of implementation.

- **Documented Variation in Outcomes.** An initiative will likely incorporate one or more specific clinical practice changes that evidence shows to be "best practices." You need to be able to demonstrate that, within your chosen topic, outcomes vary depending on which clinical practices are implemented. If you select a topic for your initiative where there is no clear evidence to suggest that one clinical practice is superior to others, you may not be able to show that your initiative was successful – or you may not be certain that any successes are truly due to your work.

- **Prior Successes Elsewhere.** Adapting an initiative that was successful elsewhere can provide a straightforward opportunity for success. There are several significant advantages to taking on an existing initiative, including: 1) that the initiative design has already been completed, 2) that the initiative has already been shown to be successful as designed, and 3) that adapting a previous success could increase buy-in to the project from potential champions, key partners, and participants. By adapting a successful project, your PQC will have somewhere to go for support or questions about implementation.

> The state of California has two mature perinatal quality collaboratives that have produced several toolkits for initiatives that have been widely adopted in other states. For example, the Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age Toolkit, developed through a collaboration with the California Maternal Quality Care Collaborative, the California Department of Public Health, Maternal, Child and Adolescent Health Division, and the March of Dimes, has been adopted and used successfully nationwide. The California Perinatal Quality Care Collaborative's Neonatal Hospital Acquired Infection Prevention Toolkit has also been used widely by other states.

- **Feasibility.** A topic may meet all of the criteria in this section, but still not be suitable for your PQC. There are always other factors that could constrain the initiative from being successful. A PQC's leaders need to think broadly about these factors – some of which may be unique to your region or participants – before making a final decision to move forward. There are two important components of feasibility that you should consider:

- **Implementation Feasibility.** Can the proposed interventions be implemented in the real-world settings of the participants? Many criteria for assessing an initiative were described in this section, but other factors – logistical, organizational, cultural, etc. – may pose significant barriers to success.

- **Measurement Feasibility.** Again considering the real-world settings of the participants, is it possible to measure the progress toward achieving, or success in achieving, the initiative's goals? An initiative with outcomes that cannot be feasibly measured should not be implemented. Process, outcome, and balancing measures need to be definable, and data needs to be accessible to support those measures.

2.2   Project Leadership, Staffing, and Key Partners

An initiative requires strong leadership and broad support to succeed. Early in the process of selecting and designing an initiative, you will need to identify the people and organizations that will provide the solid foundation of leadership and support that the initiative requires. Key leadership and support groups that you need to identify include:

- **Expert Panel/Advisory Group.** An expert panel or advisory group consists of clinicians, content experts, and patients/family members who design and provide overall leadership for the initiative. Expert panel members are not usually involved in the day-to-day oversight of the initiative, but generally serve to *advise* on the development of the initiative. Typically, an expert panel is formed to support each initiative. Expert panels are usually active prior to initiative launch in activities such as articulating the key drivers of the initiative, determining measurement strategies, developing data forms, creating education and evaluation plans, and recruiting participants.

- **Coordinator.** The coordinator is the person with day-to-day responsibilities for overseeing the initiative. This person manages all activities needed to launch and maintain the initiative; provides updates to the expert panel; serves as the primary point of contact with participants; and oversees the collection and reporting of initiative data. This individual may or may not have QI expertise; if not, you will need to ensure that an advisor with this expertise is available to help guide the initiative.

- **Partner Organizations.** Partner organizations are entities whose work and reach can magnify the work of your initiative. Partnering with credible outside organizations can greatly extend your capacity to work on a variety of projects. These groups can serve a variety of roles in an initiative, including providing content expertise, providing data, assisting with the development of educational or training materials, engaging participants, and aligning local initiatives with regional or national priorities.

Other roles may also be important, depending on the specifics of your initiative. To the greatest extent possible, you should identify and fill these roles early in the development process.

2.3   Key Drivers and Design Considerations

Several aspects need to be considered when you are designing an initiative and determining how it will be implemented by participants.

An important first step is to define what your PQC wants to accomplish with the initiative, by articulating its overall goal or aim. The overall goal should identify the quality issue being addressed, who will be impacted, and how the initiative hopes to address the issue. The overall goal can be supplemented by a SMART aim (specific, measureable, achievable, results-focused, time-bound) that more clearly articulates the improvement that will be accomplished by the initiative, as well as the timeline for achieving it.

The goals of your initiative should be further fleshed out by articulating a set of "key drivers" (see Figure 2), which can be thought of as short-term or intermediate outcomes that contribute to meeting the larger goal. Your initiative will likely include several key drivers that fall into different categories (e.g., clinical, partnership development, educational, etc.). Key drivers need to be accomplished in order to accomplish the larger goal of the initiative. Defining your key drivers before the initiative begins can help you select the best evidence-based interventions to achieve them.

None of these goals or outcomes can be realized without thinking through the specific activities or practice changes needed to achieve them. As you are designing an initiative, each intervention should be

PQC initiatives from a variety of states have been showcased in a series of webinars hosted by CDC's Division of Reproductive Health. These topic-specific webinars walk viewers through all of the issues addressed in this chapter, highlighting successes, challenges, and strategies. Speakers come from state PQCs in Massachusetts, Florida, California, Ohio, and New York as well as CDC, the Institute for Healthcare Improvement, and the Vermont Oxford Network. Topics covered include:

- Obstetric Quality Improvement Initiatives
- Neonatal Quality Improvement Initiatives
- Neonatal Abstinence Syndrome
- Severe Maternal Morbidity
- Hypertensive Disorders of Pregnancy
- Obstetric Hemorrhage
- Breastfeeding and Human Milk Quality Improvement Initiatives

defined as specifically as possible, taking into account who will be responsible for implementing it, who is affected by it, and how it should be conducted. Initiative participants will need these details to understand the expectations of their participation and how these interventions will affect their usual practices.

The outset of an initiative is also the best time to think through the measures and data sources that are needed to demonstrate your initiative's success. During the design phase, it is necessary to specify: 1) process, outcome, and balancing measures that can demonstrate progress or success in the context of the initiative; 2) existing data that show the need for the initiative; 3) sources of baseline data; and 4) data that needs to be collected to assess measures and evaluate progress. The existence of current data and the ability of participants to collect and report it to your PQC need to be taken into account. The PQC must balance benefit with burden to hospitals. (See Chapter 3 for more information on data and measurement.)

A key driver diagram, including many of the elements discussed above, can be developed to lay out a vision for the entire initiative. Below we have included the example of a key driver diagram developed for the Ohio Perinatal Quality Collaborative's Progesterone Project.

Figure 2. **Ohio Perinatal Quality Collaborative Progesterone Project Key Driver Diagram**
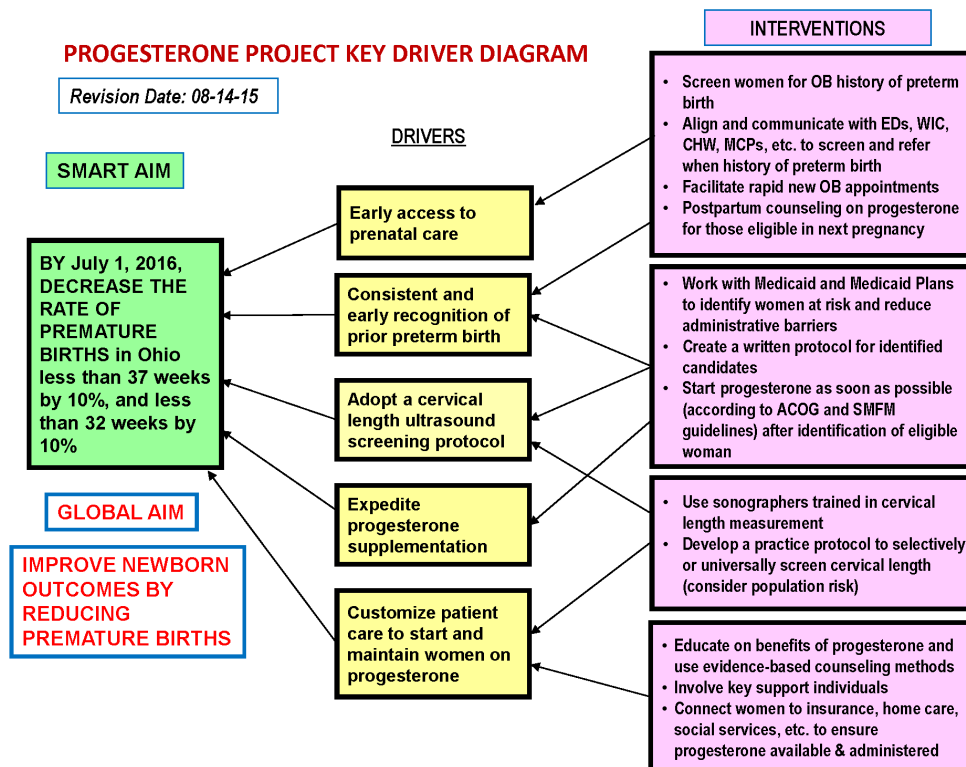
2.4   Recruiting and Engaging Participants

Committed participants are a key component of a successful initiative, and you will benefit from figuring out how to recruit and engage them in your work. The participants in an initiative are the individuals and organizations that will be involved in actually carrying out the initiative's work, such as those tasked with conducting the interventions.

Participants first need to be defined so that your PQC can take the appropriate steps to bring them into the project. Many PQC initiatives include hospitals as primary participants, but other potential participants may include outpatient clinics, community health centers, private practices, public health agencies, healthcare providers (physicians, nurses, etc.), as well as patients and their families.

Each participant is unique, and tailored communication strategies need to be developed that meet the needs of each group and increase your chances of reaching them. These strategies include not only *what* needs to be communicated to each group, but *how* that communication should take place. There is a core set of information that every participant needs to know, including why the topic is important, how they benefit from participating, and specifics about how they will participate. But this information should be tailored to each participant group. In addition, each participant group may be best reached using different channels or organizational gatekeepers. For example, many states have regional perinatal networks that can be used to reach hospitals. In Illinois, regional network administrators help the Illinois Perinatal Quality Collaborative (ILPQC) provide weekly email updates on initiatives, facilitate monthly conference calls, and provide monthly QI data and resources for hospital-level support.

> Meaningful patient and family engagement is important and should be considered a priority for PQC initiatives. In a 3-part webinar series, Tara Bristol Rouse of the Perinatal Quality Collaborative of North Carolina discusses various aspects of patient engagement in the context of PQCs. In addition to describing engagement scenarios and activities, she provides several resources and discusses potential funding sources for this work.
>
> - Partnering with Patients and Family Members for Improved Outcomes
> - Training and Supporting Providers for Successful Patient and Family Engagement
> - Selecting, Orienting, and Engaging Patient and Family Advisors

Your PQC also needs to think through the specifics of the marketing or educational materials/offerings that will be developed to reach each group. Your collaborative will likely

develop general marketing materials to provide information about your PQC, but initiative-specific materials can also be created. Possible offerings include:

- Written materials (e.g., brochures, handouts) or in-person presentation materials introducing the initiative;

- Recruitment packages that are specifically tailored to bringing sites on-board and giving them the tools (e.g., participant forms) that they need to participate;

- Training for providers and other staff, focusing on practice changes, data collection procedures, etc.;

- Newsletters that can provide overall or participant-specific progress updates throughout the course of the project;

- Recognition materials (letters, certificates, etc.) for successful participants; and

- Patient/family educational materials providing information about the changes to patient care and engagement that will occur as a result of the initiative.

2.5   Collaborative Learning

A key aspect of most PQC initiatives is collaborative learning, whereby you provide opportunities for participating sites to communicate and learn from each other's successes and challenges as the initiative progresses. This is one of the most important benefits to participating in a collaborative – participants do not have to undertake the QI project by themselves. They can work simultaneously with other participants, discovering best practices and solutions to common problems that can make the initiative run more smoothly for everyone.

Many PQCs use the collaborative learning model developed by the Institute for Healthcare Improvement called the Breakthrough Series Collaborative. This model typically involves bringing a small number of team members from participating sites together for several face-to-face learning sessions during the course of the initiative, supplemented by frequent virtual

> A traditional learning collaborative can be time and resource intensive, especially in large states or with large numbers of participants. The California Perinatal Quality Collaborative has developed a mentor model to address this. In this model, two-person teams of clinicians experienced in QI (each consisting of one nurse and one physician) receive training in mentorship, and then are assigned to work with a small number of hospitals. The mentor teams work with hospitals that are similar to their own (so they are familiar with the same issues), conduct monthly meetings, and provide coaching to their hospitals.

meetings (such as teleconferences or webinars) to allow for regular discussions of progress and review of data (when available). Data should be shared in a timely manner so that participants can make ongoing changes to their implementation of the initiative as it is occurring. Participants may use techniques such as storyboarding to facilitate their discussions and depict their work as they progress from defining the problem, to implementing interventions, to reporting results. Chapter 4 provides additional details on the Breakthrough Series Collaborative, but note that collaborative learning can take many forms and is usually tailored to the needs of each PQC.

2.6   Evaluation

Evaluation is a systematic process to determine merit, worth, value or significance of a program or initiative.[1] It involves the systematic collection of information about the activities, characteristics, and outcomes of programs (which may include interventions, policies, and specific projects) to make judgments about that program, improve program effectiveness, and /or inform decisions about future program development. In the context of a quality improvement collaborative, evaluation can show whether an initiative is successful or how it could be improved to make it more successful.

To examine the progress of your initiatives, you need to develop an evaluation plan prior to launch of the project, implement it when the project begins, and regularly re-assess it throughout to ensure that you are capturing meaningful information to determine the progress and success of the initiative. See Chapter 3 for more information on data and measurement to support your evaluation; in addition, CDC's workbook on Developing an Effective Evaluation Plan may be a useful resource.

2.7   Initiative Wrap-Up and Sustainability

Rather than being concerned about the sustainability of the initiative itself, it is more useful for your PQC to consider the sustainability of the culture and practice changes that you hope

---

[1] Centers for Disease Control and Prevention (1999). Framework for program evaluation in public health. MMWR 48(No. RR-11), ii-40.

to accomplish. From the start of an initiative, and certainly as it nears its end, your PQC needs to consider how it can support and sustain the initiative's impact.

At the end of the initiative, it is also important for you to revisit its stated goal and assess whether most participants were able to meet it. Individual participants also appreciate recognition for their own successes within the initiative. "Success" can be defined in a variety of ways – for example, for meeting goals, for providing requested data, etc. – and all of these successes should be recognized. You can recognize participant successes in a variety of ways, including letters to hospital administrators, press releases, opportunities to present at PQC meetings, etc. Building specific recognition opportunities into the initiative can provide additional incentives to push for success and may also encourage participants to join in future PQC efforts.

When an initiative wraps up, it is likely, however, that some participants will not have met their goals. Part of your work is to consider how to provide ongoing support for those who did not meet targets. With time and commitment, it may be possible for them to meet their goals, even if the formal initiative evaluation period has ended. It is worthwhile to consider methods, such as QI support calls to help teams identify opportunities for change, or mentorship from clinicians at hospitals that did meet targets, to support participants who wish to continue trying to meet their goals.

The end of an initiative also provides an opportunity to examine its successes, challenges, and lessons learned. This includes looking at initiative-specific lessons (such as how well the interventions worked when implemented by participants, what the data showed about the impact of the initiative, etc.) as well as larger lessons that you can apply to future initiatives that your collaborative may undertake (such as successful methods for engaging participants, optimal communication strategies, etc.). These lessons should be disseminated among your PQC leadership, initiative staff, and initiative participants as appropriate.

2.8 Resources

The following resources provide further information on launching initiatives:

- *American Evaluation Association*. http://www.eval.org

- *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement*. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. http://www.ihi.org/resources/Pages/IHIWhitePapers/TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.aspx [free registration required]

- *Developing an Effective Evaluation Plan*. CDC, Office on Smoking and Health, Division of Nutrition, Phyiscal Activty, and Obesity. http://www.cdc.gov/obesity/downloads/CDC-Evaluation-Workbook-508.pdf

- *A Framework for Program Evaluation*. CDC, Program Performance and Evaluation Office. http://www.cdc.gov/eval/framework/index.htm

- *Guide to Patient and Family Engagement in Hospital Quality and Safety*. June 2013. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/professionals/systems/hospital/engagingfamilies/guide.html

3.   Data and Measurement

Quality improvement initiatives in healthcare are established to improve care and outcomes for a population of patients. Without data to show changes in processes and outcomes, there is no way to gauge whether your initiative is successful or whether it needs improvement. If you cannot demonstrate success, your PQC cannot establish itself as credible and valuable. This chapter focuses on the data that your collaborative needs to collect to monitor progress and document success.

3.1   Finding a "Good" Measure of Change

To decide what data you need to collect for an initiative, you first need to identify measures that will detect the change you are trying to accomplish. These measures will be different for each initiative, but there are several characteristics that can be considered when evaluating whether a measure is useful. Good measures should be:

- **Reliable.** The National Quality Forum[2] defines a reliable measure as one "that is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability." Choosing reliable measures is important so that consistent data can be collected across multiple participating sites.

- **Malleable.** Malleability means that the processes that affect the measure are under the control of the collaborative – meaning that the measure can be changed through the quality improvement intervention(s) you are implementing.

- **Feasible.** Feasibility refers to the ability to collect the data associated with the measure. It should be possible to collect data in a timely manner, with low burden on data collectors and abstractors, and at a low cost. You should take advantage of existing data where possible.

This list of characteristics of a good measure is by no means exhaustive. Your collaborative may choose to consider others as you are evaluating potential measures.

---

[2] National Quality Forum (2015). Measure Evaluation Criteria and Guidance for Evaluating Measures for Endorsement. http://www.qualityforum.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=79434

3.2   Types and Sources of Measures and Data

PQCs typically use three types of measures for their initiatives: process, outcome, and balancing. Below is an overview of these three types of measures, with examples of each from the Tennessee Initiative for Perinatal Quality Care's Tennessee Breastfeeding Promotion Initiative. To provide context for the measures, the Tennessee Breastfeeding Promotion Initiative aims to increase the initiation and duration of breastfeeding by promoting and supporting breastfeeding in the delivery setting. Their immediate aim with this project is to increase the percentage of infants who are exclusively fed breast milk at discharge.

- **Process Measures.** This type of measure is used to understand processes, or how a system works. Activities performed by the system in order to improve an outcome are measured.

The Tennessee Breastfeeding Promotion Initiative's process measures were written as questions that could be answered as "yes," "no," or "in progress." They included:

Process Measure
Do you have a written breastfeeding policy that is routinely communicated to all health care staff?
Does your center help all mothers initiate breastfeeding within one hour of birth?
Does your center offer infants food or drink other than breast milk, other than when *medically* indicated?

- **Outcome Measures.** This type of measure is used to understand the initiative's impact on a health outcome or other outcome of interest.

The Tennessee Breastfeeding Promotion Initiative's outcome measures included:

Outcome Measure
Fraction exclusively feeding breast milk/all discharges
Fraction feeding both breast milk and formula/all discharges
Fraction exclusively feeding formula/ all births at discharge

- **Balancing Measures.** Balancing measures are used to assess whether the new interventions may lead to unintended consequences, such as over-treatment for a health outcome of interest, which subsequently may have an adverse effect on another health outcome.

The Tennessee Breastfeeding Promotion Initiative's balancing measures include:

Measure Name
Number of infant readmissions to the hospital within 2 weeks of discharge for dehydration, failure to thrive, and/or hyperbilirubinemia
Newborn length of stay

Most collaboratives do not develop their own measures for each initiative. Rather, they use existing measures from other sources, including:

- **Other PQCs.** Other PQCs are valuable resources for collaboratives seeking existing measures. As discussed in Chapter 2 of this document, collaboratives often implement initiatives that were developed elsewhere. The collaborative that developed the initiative likely has measures and goals that you can use or adapt for your own implementation.

> Elliott Main of California Maternal Quality Care Collaborative provided significant detail on the California Maternal Data Center in CDC's Perinatal Performance Measures and Data Collection webinar. You can also read more about this data center in the success story on CDC's Perinatal Quality Collaboratives website.

- **National Organizations.** National organizations are also a valuable source of existing measures. Using measures from these organizations has its advantages and disadvantages. On the one hand, measures from these organizations have likely been tested and found to be reliable and valid. On the other hand, these measures may not be specific enough to meet the needs of your initiative (although it is possible that they could be tailored or adapted to do so).

National organizations that may serve as a source of measures include:

- National Quality Forum
- Vermont Oxford Network
- Pediatrix Medical Group
- American Medical Association
- The Joint Commission

- Centers for Medicare and Medicaid Services
- National Perinatal Information Center
- Centers for Disease Control and Prevention
- National Committee for Quality Assurance
- American Congress of Obstetricians and Gynecologists

- **New Measures.** Developing new measures may be time-consuming and expensive, but your PQC may find it necessary if there are no suitable existing measures for your initiative. The development of new measures requires content expert review and input to ensure that the clinical concepts are clearly defined, as

well as reviewed by staff responsible for coding and collecting the data to ensure that real-world practice will support the measurement concepts. Careful planning, multiple rounds of review and refinement, and input from all stakeholders can help ensure the feasibility and validity of the measures.

To ensure that measures are clear and meaningful, pilot testing will be required. Pilot testing the measures allows you to understand how feasible it will be to implement them, identify areas where measure specifications are unclear or misleading, determine whether the data collection can be incorporated into existing workflows, and gauge any other areas where changes need to be made prior to a wider roll-out.

There are three types of data that are commonly used in PQC initiatives. Each has its own strengths and weaknesses that will need to be considered in conjunction with your initiative's goals.

- **Administrative Data.** Administrative data includes vital statistics, insurance claims, hospital admission and discharge data, etc. Vital statistics are the type of administrative data used most often by PQCs.

  > The New Jersey Perinatal Safety Collaborative used administrative data – specifically, birth certificate data collected by the state health department – to make the initial case for forming their collaborative and addressing their state's high C-section rate.
  >
  > The Ohio Perinatal Quality Collaborative has done extensive work to improve the accuracy and quality of birth registry data in their state. Read more about their work here.

- **Survey Data.** Collaboratives sometimes use survey data to inform their work, although this data is not typically used for quality improvement purposes. Survey data are often used for pilot testing new measures, gathering feedback from patients/family members who receive care, status updates during initiatives, and follow-ups after initiatives. Collaboratives may access existing survey data, or may develop their own surveys.

  > The Massachusetts Perinatal Quality Collaborative uses data from the Leapfrog Hospital Survey to track progress on several initiatives. For instance, data on early elective delivery rates, based on this survey, are available publicly on their website.

- **Clinical Data.** Clinical data are collected during the course of patient care. This includes all documentation in the electronic or hard-copy medical record. Much of the data that PQCs use for quality improvement initiatives are clinical data. This type of data, however, can be costly to collect because it comes from chart reviews and electronic medical record extractions.

> The Ohio Perinatal Quality Collaborative has used chart review to access clinical data for its progesterone project. The data collected via chart review include items that can be easily found in the patient chart, such as prior spontaneous preterm births. They have been careful, however, not to ask participants for data that would be time-consuming or difficult to find in the chart.

3.3   Other Data Considerations

Beyond deciding on the measures and data needed to support your initiatives, there are other important considerations that need to be taken into account:

- **Measurement Decisions.** You will need to make several decisions about issues impacting consistent measurement across the collaborative, including:

  > There are currently several sets of measures available for early elective delivery, from the American Congress of Obstetricians and Gynecologists, The Joint Commission, National Quality Forum, and Leapfrog. Although each has essentially the same definition, the conditions that are considered justifications for early elective delivery are different for each of these measures. This means that different populations could not be compared if hospitals use different early elective delivery measures.

  - **Harmonization.** Measures are available from a variety of sources, so harmonizing these measures is important. Harmonizing requires agreement on one set of measures to implement across the collaborative. The use of different measures may impede cross-hospital comparisons.

  - **Standardization.** Standardizing measures is important to ensure the consistency of data across participants. Participant differences may require tailored measure definitions to meet their unique local needs and circumstances, particularly for process measures. Outcome measures, however, typically cannot be tailored to individual participants because the data can then no longer be aggregated and compared across sites.

■ **Data Collection Decisions.** After identifying measures for your initiatives, you will need to consider several other aspects related to the data collection effort, each of which can influence participant burden. Key decisions include:

– **Number of Measures.** Asking participants to collect more measures raises the burden placed on staff during data collection. You should aim to collect the minimum number of measures that will allow you to show the impact of the initiative – several PQC leaders have suggested that two to four measures is a reasonable amount. You can also reduce burden by using measures that are already being collected by participants.

– **Sampling.** Depending upon the initiative and the resources available, it may be necessary to select a sample of patients for data collection purposes. This can be useful when a high-burden data collection method, such as manual chart review, is required. If sampling is necessary, it is important to consult with a statistician to ensure that your methods are sound. In small-scale QI initiatives, sampling is relatively rare because it is complicated and resource-intensive to do correctly.

– **Frequency of Data Collection.** QI initiatives are dependent on timely data to be successful. Data need to be collected often enough to show change through the initiative's implementation and provide ongoing feedback, but without becoming burdensome for the initiative's participants.

■ **External Approvals and Agreements.** Often, other entities or organizations will need to approve your projects, plans to collect and share data, and how you wish to use data. These approvals and agreements can be complex to navigate and generally vary from state to state. Some of these external concerns include:

– **Data Sharing Agreements.** Business Associate Agreements and Data Use Agreements are often required before participants can share data with the collaborative. Business Associate Agreements are contracts between a Health Insurance Portability and Accountability Act (HIPAA) covered entity and a HIPAA business associate, and these contracts are used to protect personal health information in accordance with HIPAA guidelines. A Data Use Agreement is a contractual document used for the transfer of nonpublic data that is subject to some restriction on its use. Although a data sharing agreement may not be needed for all initiatives, some collaboratives put them in place routinely to protect all parties if unforeseen issues arise. These agreements are usually needed when requesting patient-level data with identifiers.

- **Institutional Review Boards (IRBs).** IRBs exist to ensure that human subjects are protected in research projects. In most cases, quality improvement is not considered research, and therefore, is IRB review is not required. Still, your collaborative (or individual initiative participants) may choose to have all projects reviewed by an IRB (or other review or ethics boards) and formally declared non research or exempt, and to ensure that individual rights are adequately protected. This statement from the Department of Health and Human Services provides hospitals with guidance about QI projects and the role of their IRB committees. Several PQCs, in fact, have provided this statement to their local IRBs to make it clearer that their initiatives are not research activities.

> The Department of Health and Human Services statement about QI projects and human subjects research makes several important points that you must consider when designing your initiative. The statement itself contains more detail, but two key questions to consider are:
>
> 1. Does your QI project involve research?
> 2. Does that research involve human subjects?
>
> If the answer to either of these questions is "yes," you *may* need to seek IRB approval for your initiative.

- **State Data Committees.** Certain states require approval from state data committees to access vital records or discharge data. This additional approval may require the collaborative to provide training or clearance forms for every person who will interact with the data.

- **Data Management.** Once an initiative begins, you will need to have systems in place to manage participant data securely. Data management considerations need to be taken into account well in advance of receiving initiative data, including:

  - **Security.** Due to HIPAA requirements, certain data sets, particularly those with patient identifiers, have specific security requirements for data storage, including (in some cases) having password-protected computers in locked rooms with restricted access. Generally, collaboratives try to avoid these security requirements by using only fully de-identified clinical data. Still, when de-identification is not possible, your collaborative will need to devote significant resources to ensuring that all data is properly secured.

- **Database Infrastructure.** Depending on the complexity of the data your collaborative collects and how you use it, you will need to invest in adequate database infrastructure to house your data. Most collaboratives rely on existing databases due to the expense of building a new one. Often, new collaboratives rely on something as simple as an Excel spreadsheet to manage and analyze data for their first initiatives. As your collaborative grows and collects more data, you may find use for more advanced options, such as investing in database software or working with outside organizations that can assist with managing data.

- **Outside Organizations.** Several organizations, including the National Perinatal Information Center/Quality Analytic Services and the Vermont Oxford Network, provide data collection and reporting tools, data benchmarking and analysis, and the opportunity to participate in QI initiatives to member hospitals. Membership in one of these organizations could circumvent the need to invest in database software (and the expertise needed to use that software), or it may supplement your existing efforts. The Pediatrix Medical Group, through its Center for Research, Education, and Quality, also supports QI data collection among its member practices.

> The Tennessee Initiative for Perinatal Quality Care (TIPQC) utilizes REDCap (Research Electronic Data Capture), a free and secure web-based application designed exclusively to support data capture. REDCap provides an intuitive interface for data entry, which utilizes real-time data validation, branching/skip logic, calculated field, and audit-trails compliant with HIPAA security requirements. Users from various sites and institutions across the state can input their data into common project databases using the secure authentication and built-in data access groups. Additionally, TIPQC has developed a reporting functionality which allows individual users to generate sophisticated, customized reports of their group's data. They can easily visualize their data as run charts (as it is entered) and determine if their changes are leading to real improvements.

3.4 Data Analysis

To assess the impact of an initiative, your data will need to be analyzed on an ongoing basis. You will need to identify the appropriate comparison benchmarks for your initiatives. There are several comparisons to consider:

- **Comparison to Participant Baseline.** This is typically how PQC initiatives are analyzed. In this type of analysis, a participant is compared only to its own baseline

data to look for improvement. Run charts and statistical process control charts are helpful for such analyses. (See Chapter 4 for more details on these charts.)

- **Comparison to Other Participants.** In this type of analysis, data from one participant are compared to data from other participants. In this circumstance, it is important to ensure that the participant sites are comparable, with similar patient populations.

- **Comparison Against National Standards.** In this type of analysis, data from participants in your collaborative are compared to national standards.

- **Disparities Analysis.** It's useful for your collaborative to examine racial, ethnic, language, socioeconomic, and other disparities when analyzing the impact of your initiatives, or when determining which initiatives to undertake. Disparity can be studied in a variety of ways, and existing PQCs have looked at this issue by examining outcomes (for an overall initiative or on a hospital-to-hospital basis) by racial or ethnic group, using race/ethnicity in risk adjustment, or regularly including disparities data in the QI reports that are sent to individual hospitals. Once disparities are identified, participating hospitals can work on reducing them by developing targeted approaches.

> The Disparities Solutions Center at Massachusetts General Hospital provides several resources generated from their work toward eliminating racial and ethnic disparities, including their Annual Report on Equity in Healthcare Quality. This report provides an example of how a hospital system can measure key components of quality by race, ethnicity, and language; how they identify areas for quality improvement; and outlines the progress of MGH's initiatives to address disparities.

Data analysis is critical for making your data actionable and leading to actual improvements in quality. Analysis tools that your collaborative can use to examine your data are described in more detail in Chapter 4.

3.5 Data Sharing

Each collaborative chooses to share data among participants in different ways. Complete transparency – where all participants can see all of each other's data – is rare, and requires that all participants have agreements in place that address the situation. Initiative-specific results are rarely shared with the public, except in aggregate form.

PQCs take a variety of different approaches to sharing data:

- The New York State Perinatal Quality Collaborative shares all results openly within the collaborative, and each participant can see the data from all others.
- The Ohio Perinatal Quality Collaborative (OPQC) puts aggregate data for each project on its public website. Site-specific data is available only to the participants themselves and to OPQC leadership for QI use, such as asking a site to describe techniques used to achieve an outcome that other sites find difficult.
- The Tennessee Initiative for Perinatal Quality Care shares statewide aggregate data with all participants, but provides participant-level data only to each site. Each participant, however, is encouraged to share their data with others, and most do so.

3.6   Resources

The following resources and articles may be helpful to consult to provide further information on data and measurement:

- Clayton HB, Sappenfield WM, Gulitz E, Mahan CS, Petersen DJ, Stanley KM, and Salihu HM (2013). The Florida investigation of primary late preterm and cesarean delivery: The accuracy of birth certificate and hospital discharge records. *Maternal and Child Health Journal* 17(5): 869-878.

- National Perinatal Information Center/Quality Analytic Services. http://www.npic.org

- Park S, Sappenfield WM, Bish C, Bensyl DM, Goodman D, and Menges J (2011). Reliability and validity of birth certificate prepregnancy weight and height among women enrolled in prenatal WIC program: Florida, 2005. *Maternal and Child Health Journal* 17(5): 851-859.

- *Pediatrix Medical Group, Center for Research, Education, and Quality*. https://www.pediatrix.com/body.cfm?id=2733&oTopID=48

- *Quality Improvement Activities FAQs*. U.S. Department of Health and Human Services, Office for Human Research Protections. http://www.hhs.gov/ohrp/policy/faq/quality-improvement-activities/

- *Vermont Oxford Network*. https://public.vtoxford.org

4.   Quality Improvement Methods

There are several methods used for quality improvement in healthcare, and hospitals and clinicians may vary in their knowledge of these methods. To successfully implement a QI initiative, all participants will need to have at least a basic knowledge of QI. This chapter gives an introduction to QI models, lays out some considerations for any collaborative planning or conducting QI initiatives around perinatal care, and provides information on existing resources related to QI.

4.1   Quality Improvement Models

QI models provide a common framework for PQC stakeholders and initiative participants to discuss and implement changes. In this section, we present an overview of several QI models commonly used in healthcare. Each model has a slightly different focus and may work better for some types of initiatives than others. You should identify the model that you feel works best for your collaborative and your initiative. Some PQCs even allow participants within a single initiative to use different QI models, particularly if they already have specific experience with one particular model.

Below, we describe several QI models that are well-suited to healthcare quality initiatives, along with links to resources where you can learn more about each one. This list is not exhaustive; you can seek out other models, or combine multiple models, if you feel that makes sense for your collaborative.

> In addition to describing how their PQCs select topics to address, Jeffrey Gould (California Perinatal Quality Care Collaborative) and Peter Grubb (Tennessee Initiative for Perinatal Quality Care) explain their QI processes in the Quality Improvement Principles and Getting Started webinar.

Model for Improvement. This is the QI model most commonly used by PQCs. It was developed by the Associates in Process Improvement and is used by the Institute for Healthcare Improvement as the model that guides their work. This model combines clinical expertise with quality improvement expertise and focuses on learning as well as improvement.

Using this model, collaboratives would begin by considering three key questions:

- *What are we trying to accomplish?* This question is used to clarify the goals of the initiative.

- *What changes can we make that will result in improvement?* Many PQCs implement initiatives that have already been successfully implemented elsewhere and are likely to result in improvement. But changes implemented by PQCs may also be original ideas from clinicians/other staff based on their experience with the quality problem.

- *How will we know that a change led to mprovement?* Measurement will be required to understand whether or not the proposed initiative actually leads to improvement.

Once the aims of the initiative are identified and agreed upon, allocation of staff and resources for the project can occur. Measures, which are crucial to identify a change as an improvement, are also chosen at this time. The proposed changes are then selected and tested. A "Plan-Do-Study-Act" (PDSA) cycle (see below) is used for rapid, small tests of the proposed changes that are considered and, if they result in improvement, the changes are implemented. Implementation, initially on a small scale, is continually tested as scale increases, and efforts are successful, implementation continues to spread.

A PDSA cycle generally proceeds as follows:

- **Plan.** Plan the test of change including how it will be performed, what the proposed outcomes might be, and how data will be collected and reviewed.

- **Do.** Perform the test of change (generally on a small scale), identify unexpected problems that occur, and collect data.

- **Study (or Check).** Conduct data analysis, compare the data with predictions, summarize the information, and discuss possible improvements or changes to your initial plan.

- **Act.** Refine or modify your proposed changes by what was learned, and begin planning for the next cycle of testing.
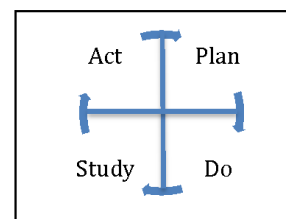
The Institute for Healthcare Improvement developed a learning approach called The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement, which many PQCs use when implementing their initiatives. This does not replace the Model for Improvement, but rather is another resource that can allow participants to learn from each

other during an initiative. The Breakthrough Series Collaborative model is generally organized for a short-term project (usually not more than 15 months) with a relatively small number of participating teams (typically no more than 30). Participants implement the initiative locally, and over the course of the project, they attend in-person Learning Sessions to discuss progress and learn from one another's challenges and best practices.

Resources where you can learn more about the Model for Improvement and the Breakthrough Series Collaborative include:

- *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement*. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. http://www.ihi.org/resources/Pages/IHIWhitePapers/TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.aspx [free registration required]
- *How to Improve*. Institute for Healthcare Improvement, Cambridge, MA. http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx

Six Sigma. This model focuses on reducing variation and eliminating process defects. (A "defect" is a deviation from a defined norm or standard, regardless of the industry.) Its philosophy asserts that by controlling the inputs to a process, you can control (and reduce defects in) its outputs. Although this approach has been successfully applied in healthcare settings, not all initiatives are suitable for Six Sigma because it focuses on standardization (which is not always appropriate). This model relies on a variation of PDSA referred to as DMAIC (Define-Measure-Analyze-Improve-Control) or DMADV (Define-Measure-Analyze-Design-Verify). It is statistically oriented, and initiatives often use a range of statistical tools and analyses to determine whether improvement is occurring. This requires some expertise in these statistical methods to take full advantage of this model.

Resources where you can learn more about Six Sigma include:

- *What is Six Sigma?* American Society for Quality. http://asq.org/learn-about-quality/six-sigma/overview/overview.html
- *What is Six Sigma?* iSixSigma. http://www.isixsigma.com/new-to-six-sigma/getting-started/what-six-sigma/

Lean Production System. The Lean model originated in automobile manufacturing but has been applied to a variety of industries, including healthcare. This model focuses on reducing waste and eliminating non-value-added activities from a process. It focuses on the process flow that results in the end product, rather than the end product itself. By following the Lean model, you would examine all steps in a process and determine if any are unnecessary or inefficient. The process would then be redesigned to improve efficiency and/or eliminate unnecessary steps.

Within healthcare, Lean and Six Sigma are sometimes combined into the "Lean Six Sigma" model, which focuses on using QI initiatives to increase patient satisfaction and reduce errors. This model uses the statistical approach of Six Sigma along with the process flow focus of Lean.

Resources where you can learn more about the Lean Production System, and Lean Six Sigma, include:

- *Going Lean in Health Care.* IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2005. http://www.ihi.org/resources/Pages/IHIWhitePapers/GoingLeaninHealthCare.aspx [free registration required]

- *Lean Six Sigma in Healthcare.* American Society for Quality. http://asq.org/healthcaresixsigma/lean-six-sigma.html

- *What is Lean?* American Society for Quality. http://asq.org/learn-about-quality/lean/overview/overview.html

- *What is Lean?* Lean Enterprise Institute. http://www.lean.org/WhatsLean/

4.2   Considerations When Planning/Conducting a Quality Improvement Initiative

As noted previously, the participants you will rely on to implement your initiatives will likely have a range of experience with QI. It will benefit the collaborative to ensure that QI expertise is available both at the collaborative level and at the level of the participating teams. QI expertise does not have to come from a content expert, however; several PQCs have accessed clinicians in other fields (such as surgery, which has a lengthy history with QI) to get this knowledge. When experts are not available locally, online resources (such as those from the Vermont Oxford Network or the Institute for Healthcare Improvement) could be provided to give key team members a minimal grounding in QI.

While conducting and analyzing the results of an initiative, there are several strategies and tools you can use to assist in determining whether or not your initiative has resulted in improvement:

- **Pareto Charts.** A Pareto chart provides a visual depiction of the "Pareto Principle" (also known as the"80-20 Rule"), which states that a small percentage of efforts (the 20%) produce a large percentage of results (the 80%). The Pareto Principle is applied by looking at the multiple causes that contribute to a quality problem and assessing which have the greatest impact on it. By targeting initiatives to the causes that make the greatest impact on the problem (the "vital few"), you can focus your efforts on addressing those causes, and you will likely make a larger impact on the problem than by taking a broader approach or addressing less significant contributing factors. The Pareto chart is usually a bar chart that shows the relative size of each contributing factor, allowing you to see which are most significant.

  The following online resources provide more information about Pareto charts:

  - *Pareto Chart*. Agency for Healthcare Research and Quality. http://healthit.ahrq.gov/health-it-tools-and-resources/workflow-assessment-health-it-toolkit/all-workflow-tools/pareto-chart

  - *Pareto Chart*. American Society for Quality. http://asq.org/learn-about-quality/cause-analysis-tools/overview/pareto.html

  - *Pareto Diagram*. Institute for Healthcare Improvement, Cambridge, MA. http://www.ihi.org/resources/Pages/Tools/ParetoDiagram.aspx [free registration required]

Figure 3.   Pareto chart from Tennessee Initiative on Perinatal Quality Care
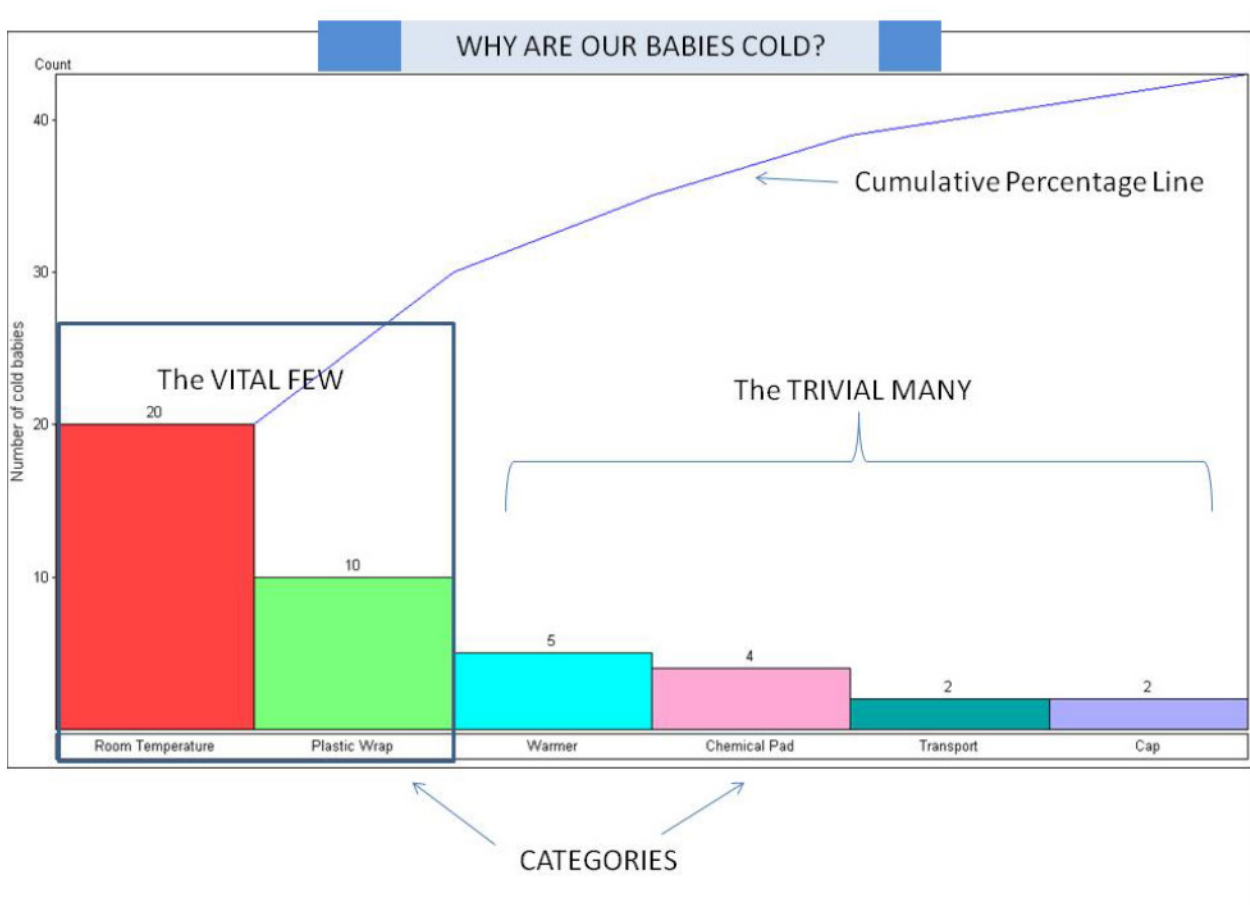
- **Process Flowchart.** A process flowchart can be used in multiple ways to guide improvement. It is often helpful to have sites develop a flowchart of their current process on the issue that is targeted for improvement. This can be helpful in identifying barriers, inefficiencies, and gaps. A process flowchart can also be developed to help the site depict how a process should operate in that site. It is important to remember that processes need to be adapted to the local context. In healthcare, the "process" could represent the steps needed to provide care at recommended quality standards. In reality, care may not always be provided as represented in the flowchart, but if the flowchart depicts a best practice, your initiatives are likely designed to ensure that care is provided (as frequently as possible) as depicted in the flowchart. The flowchart can serve as a reminder of what you are trying to achieve, as well as a tool for identifying where problems can occur.

  The following online resources provide more information about process flowcharts:

  — *Flowchart*. Institute for Healthcare Improvement, Cambridge, MA. http://www.ihi.org/resources/ Pages/Tools/Flowchart.aspx [free registration required]

  — *What is a Process Flowchart?* American Society for Quality. http://asq.org/learn-about-quality/process-analysis-tools/overview/flowchart.html

- **Root Cause Analysis.** Root cause analysis can be used during the initiative planning process to identify errors that contribute to the quality problem. This can also be linked to the process flow chart. The federal

PQCs have taken several different approaches to disseminating QI knowledge to their members:

- The Louisiana Birth Outcomes Initiative received several years of "coaching" from clinicians affiliated with the Institute for Healthcare Improvement's (IHI's) Perinatal Improvement Community to learn how to implement QI.
- In Ohio, the state replaced Regional Perinatal Education Coordinators with Quality Improvement Coordinators and assigned them to specific projects aimed at the leading causes of adverse health outcomes in the state. This model has been effective in many areas of health care, including perinatal projects with the Ohio Perinatal Quality Collaborative.
- The Tennessee Initiative for Perinatal Quality Care invested resources to allow its Project Director to become an IHI-certified Improvement Advisor. With that training, the director is able to provide QI coaching to hospitals throughout the state, and she has spoken at conferences or annual meetings of several other PQCs.

Agency for Healthcare Research and Quality defines it as a way to "identify underlying problems that increase the likelihood of errors while avoiding the trap of focusing on mistakes by individuals."[3]

Collaboratives may also find it useful to employ cause and effect diagrams to provide a visual representation of the results of their root cause analysis. A cause and effect diagram (also called a "fishbone diagram" or "Ishikawa diagram") shows the ultimate problem you are trying to improve, along with branches that represent potential causes.

The following online resources provide more information about root cause analysis (and cause and effect diagrams):

— *Root Cause Analysis*. Agency for Healthcare Research and Quality, Patient Safety Primer. https://psnet.ahrq.gov/primers/primer/10

— *Root Cause Analysis*. Department of Veterans Affairs, National Center for Patient Safety. http://www.patientsafety.va.gov/professionals/onthejob/rca.asp

- **Failure Modes and Effects Analysis (FMEA).** FMEA is another method suitable for use early in initiative planning. Similar to root cause analysis, FMEA is used for examining the causes of a quality problem, but this methodology takes a proactive approach to considering a process and attempting to identify the points where it might fail. It also attempts to pinpoint the potential effects of the identified failures.

  The following online resources provide more information about FMEA:

  — *Failure Modes and Effects Analysis (FMEA) Tool*. Institute for Healthcare Improvement, Cambridge, MA. http://www.ihi.org/resources/Pages/Tools/FailureModesandEffectsAnalysisTool.aspx [free registration required]

  — *Healthcare Failure Modes and Effects Analysis*. Department of Veterans Affairs, National Center for Patient Safety. http://www.patientsafety.va.gov/professionals/onthejob/hfmea.asp

  — *Quick Guide to Failure Modes and Effects Analysis*. iSixSigma. http://www.isixsigma.com/tools-templates/fmea/quick-guide-failure-mode-and-effects-analysis/

---

[3] *Root Cause Analysis*. August 2014. Agency for Healthcare Research and Quality, Rockville, MD. https://psnet.ahrq.gov/primers/primer/10

- **Run Charts.** A run chart is one of the most basic yet powerful tools to examine whether your initiatives are leading to improvements. It depicts one data point and shows how it changes over time. Collaboratives generally consider this type of chart to be essential for understanding whether an initiative is working as intended.

The following online resources provide more information about run charts:

- *Run Chart Tool*. Institute for Healthcare Improvement, Cambridge, MA. http://www.ihi.org/resources/Pages/Tools/RunChart.aspx [free registration required]

- Poteet, J and Jeffers, D. *Understanding and Annotating Run Charts*. https://opqc.net/sites/bmidrupalpopqc.chmcres.cchmc.org/files/Learning%20Sessions/September%2028%202015%20Learning%20Session/130-215_Understanding%20and%20Annotating%20Run%20Charts_Poteet%20Jeffers_%20St%20Charles%20II.pdf

- **Statistical Process Control Charts.** Control charts function similarly to run charts, in that both look at data points over time. Where this chart differs, however, is with the addition of statistical decision limits (or control limits) that allow you to examine the variation that will occur within the data you collect. Some level of variation is natural and unavoidable; this is referred to as "common cause variation." The control limits help you determine when the data indicate a more alarming level of variation, called "special cause variation," which may indicate a problem. Control charts can also keep you from overreacting to changes by defining acceptable limits for data variation.

The following online resources provide more information about statistical process control charts:

- *Statistical Process Control*. American Society for Quality. http://asq.org/learn-about-quality/statistical-process-control/overview/overview.html

4.3   Resources

The following resources provide more information related to QI and conducting QI initiatives:

- *American Society for Quality*. http://asq.org/index.aspx
- *Associates in Process Improvement*. http://www.apiweb.org/
- *The Deming Institute*. https://www.deming.org/
- *Institute for Healthcare Improvement*. http://www.ihi.org/Pages/default.aspx
- *National Institute for Children's Health Quality* http://www.nichq.org/
- *Vermont Oxford Network*. https://public.vtoxford.org/

5.   Dissemination

Dissemination is one of the most important components to ensuring the success of a collaborative. From communicating action plans to the results of an initiative, the dissemination process needs to be well planned to maximize results and ensure sustainability of the collaborative. This chapter will outline various ways that collaboratives have approached developing dissemination plans; engaging and partnering with patients, family members, and other stakeholders; and customizing information for the needs of different audiences.

5.1   Components of a Dissemination Plan

While dissemination plans will inevitably vary depending on the needs of each collaborative, there are several components that should be included in any plan. Although some of these components will need to be refined over time, it is important to begin thinking about each of these components as early as possible to consider how they may evolve.

Key components of a dissemination plan include:

- **Project Overview.** For initiative-specific dissemination activities, you should include a description of the initiative and its goals. This overview should include information about what changes the project is aiming to accomplish and the value of the project for the collaborative. You should consider what you would like others to know about the initiative.

- **Dissemination Goals.** This section should outline what you are hoping to achieve through dissemination. It is important to identify and prioritize short-term and long-term goals. Short-term goals may include gaining feedback on future initiatives, engaging patients and families, educating hospital staff, enhancing collaborative learning, or informing providers about the value of QI work. Long-term goals may include affecting policy change, receiving future funding, or influencing sustainability of the collaborative. Different dissemination methods may be appropriate for different goals, and would likely involve different content, different channels for dissemination, and different target audiences.

- **Target Audiences.** It is important to define who you will target with your dissemination activities. You should be as specific as possible about who can benefit from the results of your work, and who you wish to reach. You will have multiple target audiences within your dissemination plan (even for one initiative), and it is essential to understand their information needs and how to communicate with each. It may also be helpful to define primary and secondary audiences and to allocate resources according to audience importance.

  Key target audiences to consider include:

  — Policy makers;

  — Funders;

  — Payers and purchasers;

  — Hospitals (or other participants);

  — Professional organizations;

  — Patients and families;

  — Stakeholders/partners;

  — State agencies (e.g., health departments, Medicaid offices, etc.);

  — Other collaboratives;

  — State hospital associations; and

  — The general population.

- **Key Messages.** Once you have defined your target audiences and their needs (and when applicable, examined the results of your initiatives), you can consider the key messages that you would like to share. These messages should be easy to read and visually appealing, With a variety of target audiences, it is important to be transparent with communications and mindful of how communication intended for one group could be perceived by another. Communications are meant to bring value to all groups, not to antagonize them. For example, patients value transparency, but physicians may prefer that communications be more circumspect. It is important to strike a balance in what you release to be sure that your messages are valuable and not easily misconstrued. You should consider having your messages reviewed by members of your audience to ensure they are saying what you intend them to say.

> PQCs communicate with their stakeholders and target audiences in a variety of ways. Here are a few examples:
>
> - The Tennessee Initiative for Perinatal Quality Care sends a monthly e-zine to subscription holders and annual reports to stakeholders and members of the collaborative.
> - The Perinatal Quality Collaborative of North Carolina coordinates its social media posts on Facebook and Twitter. The pages post the same content on the same days.
> - The Massachusetts Perinatal Quality Collaborative and the Northern New England Perinatal Quality Improvement Network hold regular annual conferences for their membership.

- **Channels.** This part of a dissemination plan outlines the channels that will be used to effectively communicate with your target audiences. It is important to make a distinction between sources (e.g., websites, social media, etc.) and messengers (e.g., professional organizations, physician champions, etc.). When considering potential messengers, you first need to identify the individuals or organizations that are viewed as credible to your target audiences. You may also need to build relationships (if they don't already exist) to engage the help of these groups. Potential messengers include:

  - Professional organizations (e.g., local chapters of the American Congress of Obstetricians and Gynecologists, the American Academy of Pediatrics, etc.);

  - State health departments;

  - Hospitals; and

  - Community and family organizations that focus on maternal and child health.

  When deciding on appropriate sources, it is useful to consider how accessible the source is to your intended target audience, as well as the resources (both money and staff time) that will be needed to use the source. For example, effectively using social media requires that you maintain a consistent presence and post frequently. Potential sources include:

— Websites	— Twitter
— Facebook	— Listservs
— Email blasts	— Press releases
— Webinars	— Toolkits
— Journals	— Conferences

- **Timing.** Timing and frequency of dissemination will vary greatly by initiative and target audience. Collaboratives may have weekly, monthly, or annual communications with various stakeholders.

- **Responsible Staff.** It is important to designate staff to take responsibility for dissemination. In most instances, the collaborative's operational or administrative staff will handle these activities. Staff members could be responsible for creating the content, disseminating it through various channels, and checking the channels frequently (where applicable) to ensure that a consistent presence is maintained. Collaboratives with a significant community focus may wish to engage patients and families to serve as community advocates. These advocates can disseminate information at events and on social media, potentially reaching more patients and families.

- **Budget.** Budget requirements for dissemination are frequently underestimated. Effective dissemination can involve a significant investment of resources and planning. The budget should include plans for travel, layout and printing, space rental costs, conference fees, and other items. Media buys and advertisements, if your collaborative chooses to undertake these types of activities, can also be quite expensive. In-kind contributions from partners who can assist with promotion may be helpful.

- **Evaluation.** Evaluation is most effective when it is planned from the start. Decide early how you will evaluate the success of your dissemination efforts, selecting measurable criteria for each dissemination activity. While evaluation activities will depend on your budget and number of dedicated staff, there are several ways to build evaluation activities into your dissemination efforts. Google Analytics can be useful to determine reach of materials. It can track search terms, hashtag usage, or how many times a link was clicked. For example, the California Maternal Quality Care Collaborative used Google Analytics to gather information related to a toolkit release. It tracked how many times the toolkit was downloaded, from what states downloads originated, whether users opened the link from an email or online, and even whether users looked at the toolkit but did not download it. Follow-up surveys can also be useful to assess appeal of communications, preference of communication mode, and suggestions for improvement.

5.2 Resources

The following resources and articles provide more information related to dissemination:

- Carpenter D, Nieva V, Albaghal T, et al. Development of a Planning Tool to Guide Research Dissemination. In: Henriksen K, Battles JB, Marks ES, et al., editors. *Advances in Patient Safety: From Research to Implementation* (Volume 4: Programs, Tools, and Products). Agency for Healthcare Research and Quality, Rockville, MD. 2005 Feb. http://www.ncbi.nlm.nih.gov/books/NBK20603/

- Randall, Susannah (2005). *Using Communications Approaches to Spread Improvement*. The Health Foundation. http://www.health.org.uk/publication/using-communications-approaches-spread-improvement

6.   Sustainability

Two types of sustainability are most relevant to a PQC: sustainability of the collaborative itself, and sustainability of the results of your initiatives. In this chapter, we focus on the sustainability of the collaborative. The goal of this chapter is to provide information on how to plan for sustainability, as well as what supports may be helpful for long-term collaborative sustainability.

6.1   Sustainability Planning

Planning for sustainability is critical, but it doesn't require a written plan. More important than having a formal, written plan is ensuring that the right people are involved in the sustainability planning process, that you start planning at an early stage (soon after your collaborative begins implementing initiatives), and that you frequently revisit your needs for sustainability.

Here are some issues to consider when planning for sustainability:

- **Priorities for Sustainment**. It's helpful to plan for a future with different funding levels – either less or more – than you currently have. Accordingly, it's useful to prioritize which operations of your collaborative need to be sustained in order for it to function. These core operations need to be defined, and around that core, you can identify the supports needed to continue your work. Your collaborative may also find it helpful to prioritize in tiers. For example, you could prioritize a small core of operations to sustain with very little funding, a larger set of functions for a medium level of funding, and a broad set of functions with a large amount of funding.

- **Funding.** Determining the level of funding that your collaborative needs to operate may be part of the process of identifying priorities for sustainment. The priorities that you identify will dictate the level of funding that the collaborative needs to function, as well as where the funds will be used. It's helpful to begin considering and seeking new funding sources before they will be needed. Possible funding sources may include:

  - **Public Funding, from Federal, State, or Local Sources.** These are the sources that most commonly support PQCs. Some PQCs receive funding through grants, contracts, or cooperative agreements, while others are supported through these sources because they are housed within organizations such as state health departments. Examples of public funding sources that support PQCs include CDC, state departments of health, and state Medicaid authorities.

- **Private Funding, from Payers, Foundations, and Organizations with an Interest in Perinatal Care.** Similar to public funding sources, some PQCs receive their funding through traditional contractual or grant arrangements, while others are housed within private organizations, such as hospital associations. Examples of private funding sources that support PQCs include state hospital associations and March of Dimes.

- **Membership Fees or Dues.** Several PQCs receive funding from collaborative members who pay membership fees or dues. This approach provides an ongoing funding source that is controlled by the collaborative.

> The Northern New England Perinatal Quality Improvement Network, the California Perinatal Quality Care Collaborative, the Florida Perinatal Quality Collaborative, and the IHI Perinatal Collaborative all charge membership fees.

■ **Staffing.** A collaborative relies on many people, including a large number of volunteer staff. You should try to identify the staff positions – both paid and volunteer – that need to be filled in order for your PQC to function. Different strategies are needed to sustain staffing for paid versus volunteer positions. For paid positions, sustainability will depend mostly on funding. For volunteer positions, sustainability will depend more on relationship building. Volunteers will be more likely to spend their free time on QI activities if they feel the collaborative is making an impact on important issues and if they feel valued. Types of collaborative staff include:

- **Collaborative-Level Leadership.** These are the leaders who provide oversight for the entire collaborative. This level of leadership probably includes the collaborative's executive director, as well as an oversight committee with representatives from key stakeholder organizations.

- **Initiative-Level Leadership.** A collaborative also relies on clinical, operational, and administrative staff to lead initiatives. Depending on the number of ongoing initiatives within your collaborative, the executive director may fill this role or others who are passionate about the initiative may lead it.

- **Operations.** Staff are also needed to run the collaborative on a day-to-day basis. Operations staff include those who coordinate meetings, run websites, collect and manage initiative data, and develop marketing and dissemination materials, along with other activities.

■ **Organizational Home.** It's worthwhile to consider possible alternatives for the collaborative's long-term home. Although it may not be possible to locate your PQC within an ideal home, it's still helpful to consider what an ideal home might be. You should also consider the stability of your current arrangement, and

whether that organization is able and/or willing to continue hosting your collaborative in the future. If a different organizational home would provide more stability for your PQC, you should try to develop partnerships that could allow the collaborative to move if the opportunity arises. Another option may be establishing the collaborative as an independent organization, such as a 501(c)(3) non-profit.

- **QI Capacity.** Another factor that can impact your collaborative's ability to operate is the capacity of local sites (hospitals, etc.) to participate in QI projects. "QI capacity" refers to local expertise in conducting QI. Staff from existing PQCs note that QI expertise varies from hospital to hospital, and it's likely that a collaborative will encounter sites that have never done systematic QI work before. If you can invest in growing QI capacity within your state, this knowledge base can support the sustainability of your collaborative by making it easier to build support for and launch future initiatives.

6.2   Supports for Sustainability

Throughout the life of your collaborative, you will probably carry out activities that can support you in your future efforts if you conduct them strategically and keep sustainability in mind. These activities include:

- **Engaging Participants, Patients, and Family Members.** To sustain your collaborative, it's important to build a base of engaged participants by conducting initiatives that are important for your state, supporting and recognizing participant successes, and providing opportunities for collaborative learning. These participants, who understand the benefits of a PQC and who have seen the positive impact of your work, can support sustainability by creating a demand for what you do. Additionally, patients and family members may be able to advocate for policy or financial support at the legislative level in ways that other PQC staff and stakeholders cannot. They can also serve as powerful advocates by writing letters of support to accompany grant applications and other funding requests.

- **Developing Key Partnerships.** It's important to develop partnerships with key organizations that have a stake in perinatal care quality. These organizations – such as March of Dimes, payers, state health departments, etc. – might be involved in steering the direction and priorities of the collaborative. Creating ties with relevant stakeholder and family organizations, and aligning your initiatives with their priorities, can support your sustainability. Stakeholders may be sources of funding or other resources, can help spread the word about your work, and can help your collaborative remain relevant to a variety of potential constituencies.

- **Building on Successful Initiatives.** Your collaborative's successful initiatives, beyond making an impact on perinatal care quality, can also help demonstrate the value of your work and attract future participants. It may be possible to use

data collected during your initiatives to examine their broader positive impact. For example, you could conduct economic analyses to show interested audiences (such as payers) the money saved through your QI efforts. Seeing the broader impact of your work may also attract new hospitals to participate in your future initiatives by demonstrating that these QI projects can succeed and positively impact the quality of care.

- **Dissemination and Marketing to Key Audiences.** Chapter 5 of this document provided a thorough discussion related to dissemination and dissemination planning, so that will not be discussed in detail here. It's important to note, however, that dissemination – particularly when targeted to those audiences who can support your collaborative in the future – is one of the most critical components of sustainability.

6.3 Sustainability Case Studies

In Chapter 1, we provided examples of four collaboratives that launched with different funding levels – minimal, limited, moderate, and substantial. Here, we revisit those same PQCs to show how they are continuing to fund the work they started.

- **Minimal Funding (under $10,000) – Neonatal Quality Improvement Collaborative of Massachusetts (NeoQIC)/Massachusetts Perinatal Quality Collaborative (MPQC).** After first developing a foundation of collaboration between the level III NICUs in the state that were the initial NeoQIC members, NeoQIC gradually developed partnerships with other state agencies, including the Massachusetts Department of Public Health, the Massachusetts Hospital Association, and the March of Dimes of Massachusetts. Through a forum provided by the Vermont Oxford Network, NeoQIC also developed partnerships with other state collaboratives, including groups from California, North Carolina, Ohio, Tennessee, New Jersey, Michigan, Illinois, and others. These partnerships and the success of early NeoQIC projects soon led to opportunities for additional funding. In 2011, NeoQIC joined a two-year multi-state project focused on NICU central line-associated infections led by the North Carolina collaborative. This project included funding from the state hospital association which, for the first time for NeoQIC, provided some financial support to participating NICUs. In 2012, the March of Dimes of Massachusetts joined with NeoQIC in organizing and supporting the first New England Neonatology Quality and Safety Forum. This annual conference, focused on QI education and sharing of local QI initiatives, continues with March of Dimes support to this day. In 2012, the Massachusetts Department of Health agreed to support a new NeoQIC initiative focused on Neonatal Abstinence Syndrome. This was the first NeoQIC project that was open to level I and level II centers in addition to level III NICUs, and over 40 hospitals in the state joined. Funding for this project from the state continues as well. In 2011,

as NeoQIC continued to grow, several groups came together to form the MPQC, including the Department of Public Health, the March of Dimes, the Massachusetts chapter of the American Congress of Obstetrics and Gynecology, and key obstetric leaders from across the state. The MPQC initially functioned primarily through two large statewide summits; funding and administrative support was provided by the March of Dimes. In 2014, Massachusetts was successful in obtaining CDC funding for state perinatal quality collaboratives. The Massachusetts PQC is a partnership of NeoQIC, MPQC, Department of Public Health, and March of Dimes.

- **Limited Funding ($10,000-$100,000) – Florida Perinatal Quality Collaborative (FPQC).** The FPQC is approaching sustainability because of strengthening working partnerships and successful completion of a series of initiatives and activities. In this new phase, they are: 1) evolving into a more formal organizational structure with the steering committee and other operational committees; 2) providing a core set of activities, including quality initiatives, an annual conference, quality training workshops, a hospital QI data indicator system, and periodic newsletters and website services; and 3) developing leaders, volunteers, and staff. The continual pursuit of funding has been essential. Most funding is provided through grants and contracts to provide specific statewide services, including support from the state Title V agency and the March of Dimes, as well as others, such as federal grants, foundations, and health plans.

- **Moderate Funding ($100,000-$499,999) – Illinois Perinatal Quality Collaborative (ILPQC).** As ILPQC moves forward and continues to implement new initiatives, the collaborative is also focusing on building relationships with key stakeholders and identifying new sources of funding in order to sustain its work. The initial Children's Health Insurance Program Reauthorization Act funding that they used to develop their collaborative ended in late 2015, and although they successfully applied for a CDC grant aimed at supporting PQCs for three years, they recognize the need to find additional short-term funding to supplement the CDC grant, as well as long-term partners to support and fund the collaborative's work going forward. In order to identify potential sustainable funding sources, ILPQC staff conducted a telephone survey with existing collaboratives to learn how they were funded. With the information they received, they began conducting targeted outreach to the types of organizations that provided funding to other PQCs, such as state agencies, insurance companies, and foundations with similar missions. ILPQC staff also conduct ongoing searches for new grants and other funding opportunities. All of these efforts to build new relationships and secure new funding sources have been bolstered by the fact that the collaborative has data to show that its initiatives have made a positive impact.

- **Substantial Funding ($500,000+) – California Perinatal Quality Care Collaborative (CPQCC).** CPQCC is funded primarily through dues from member hospitals. They were able to achieve stability in this funding source when California Children's Services (a state-run program that provides healthcare to children up to age 21) mandated that the hospitals they approve join CPQCC. The relationship between California Children's Services and CPQCC was facilitated by the outcomes data that CPQCC provided. This data was quite valuable to California Children's Services because it helped to show the impact of their healthcare expenditures. CPQCC also hired a business consultant to specifically help them address sustainability issues. This consultant helped them to develop strategies for continuing to fund their work, as well as identifying new stakeholders to approach (such as health insurers) who may be able to provide funding in the future.

6.4 Resources

Other PQCs are the best resource to learn more about how collaboratives sustain their efforts over time. You can find contact information for other PQCs on CDC's website: http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PQC-States.html

This includes a 2013 webinar on Building and Sustaining a Collaborative: https://www.youtube.com/watch?v=IEKMNzCB1Hk