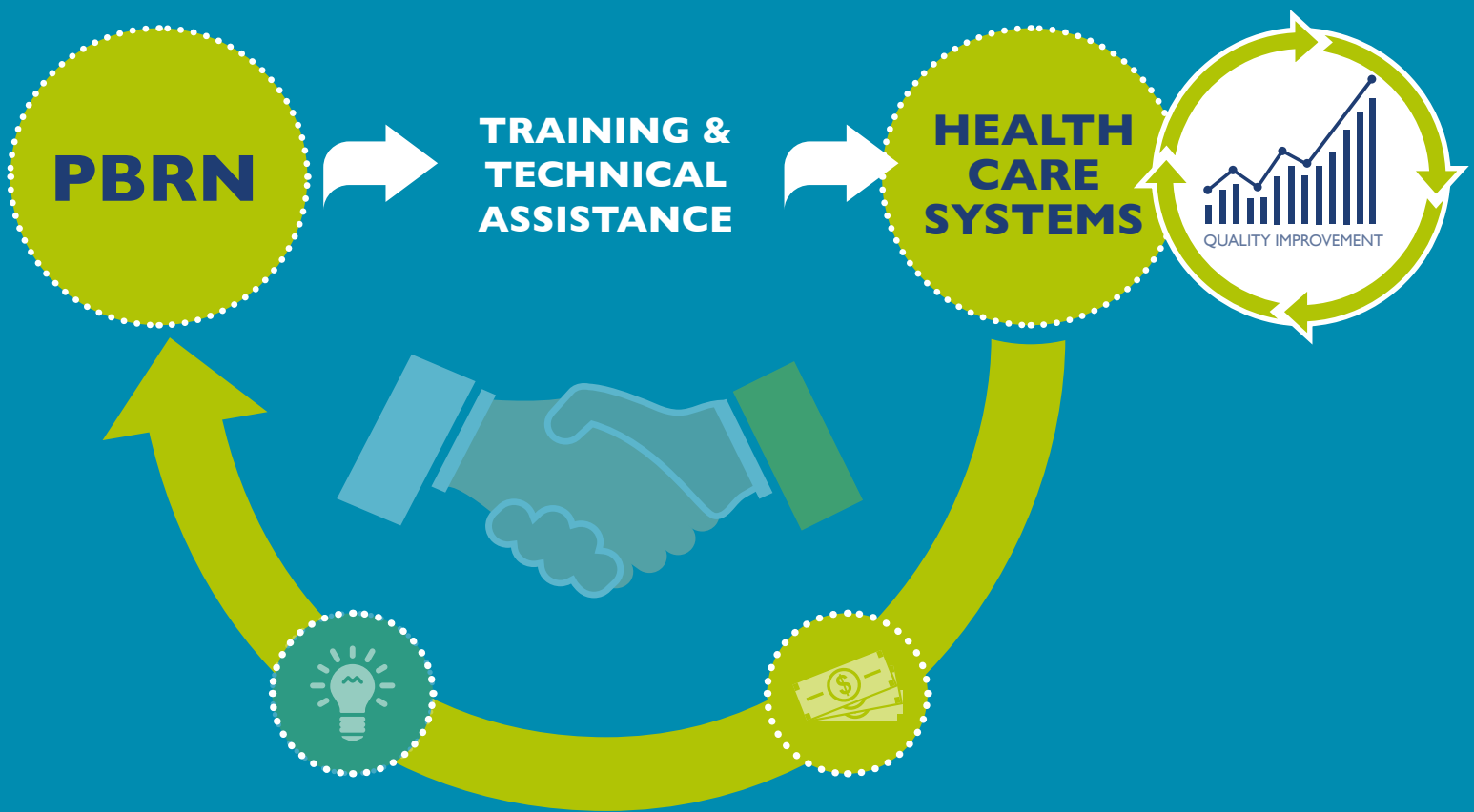


PRACTICE-BASED RESEARCH NETWORK BUSINESS OPPORTUNITIES WITH ACOs AND OTHER HEALTH CARE SYSTEMS:

Training and Technical Assistance



Agency for Healthcare Research and Quality
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Practice-Based Research Network Business Opportunities with ACOs and Other Health Care Systems: Training and Technical Assistance

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Preamble

Purpose of the Guide

This guide describes business opportunities for practice-based research networks (PBRNs) in the evolving health care landscape. Increasingly, accountable care organizations (ACOs), public health departments, and other health-related entities are required to initiate, assess, and report quality improvement (QI) efforts. ACOs and similar organizations are motivated to undertake QI by anticipated shared savings under Medicare programs; these savings require improvements to be demonstrated through quality metrics. PBRN investigators have experience designing, executing, and evaluating QI activities. PBRNs can provide their expertise to others via training or technical assistance by conducting QI exercises. PBRNs could use this expertise to help other organizations conduct QI activities and develop required deliverables such as timely assessments of QI efforts. Of note is the aptitude for PBRNs to provide contextual reflection in QI. This guide describes existing and anticipated QI synergies between PBRNs and ACOs and similar organizations (see Figure 1). It provides guidance and resources to facilitate the expansion of business relationships between PBRNs and ACOs and other health-related organizations.

The overall aim of this guide is to help PBRNs identify potential business arrangements for working with other health care organizations, including ACOs, and leverage their experience and skills to make the PBRN business models more robust. The guide has three specific objectives:

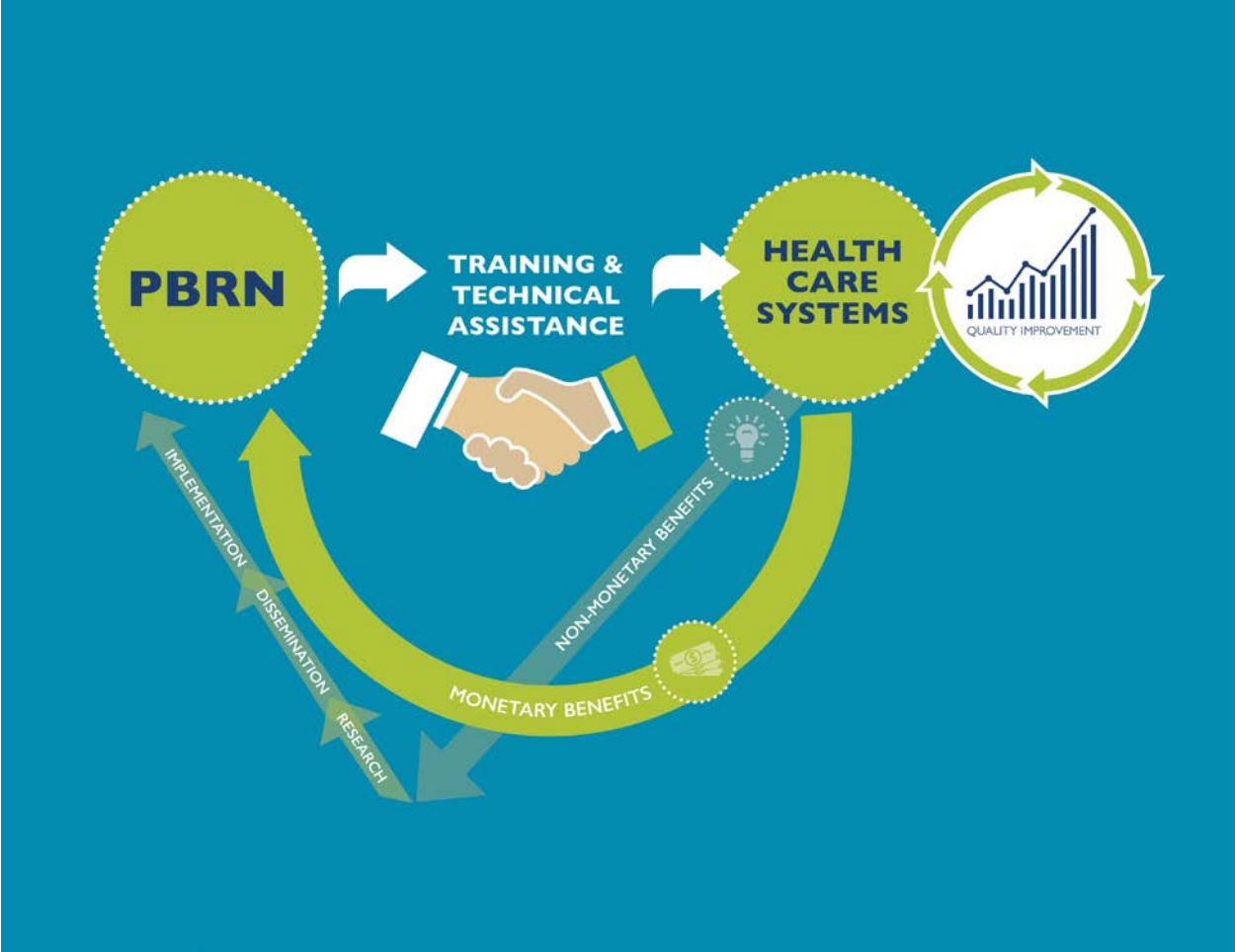
1. To acknowledge the capacity and experience of PBRNs to provide QI training and services to other entities including public health departments, other health care systems, and research organizations.
2. To encourage PBRNs to assess their interest in and the potential payoffs of offering QI expertise and services in addition to conducting research, and consider whether customizing the mix of activities could strengthen the self-sustainability of the PBRN infrastructure.
3. To promote ACOs and other QI entities to partner with PBRNs to meet increased expectations for QI capabilities including data analysis, standardized reporting, practice transformation, and payment reform.

A PBRN can have a business partnership with an ACO without becoming part of it. The expansion of ACOs presents many new opportunities for PBRNs to work with newly formed or struggling organizations on QI results.

This guide describes several existing business models that PBRNs have used to provide QI services to other organizations. Some examples involve contracts between PBRNs and State or county organizations that could be adapted to PBRN-ACO business partnerships. Other examples involve PBRNs within ACOs; these PBRNs have traditionally conducted externally funded research but also taken on quality improvement for their health care delivery system. We note that a positive business relationship between PBRNs and ACOs can exist without a PBRN being administratively part of an ACO.

Finally, this guide identifies PBRN expertise, strategies, and infrastructure that may be leveraged to investigate quality-of-care objectives for other health care organizations. Examples include database design, electronic health record (EHR) data extraction, statistical analytic design, and relationships with clinical staff implementing QI initiatives.

Figure 1. Quality Improvement Synergies and Mutual Benefits between PBRNs and Health Care Systems



1. How to Use this Guide

1.1 Target Audience

1.1.1 PBRN Administrators, Coordinators, and Principal Investigators

The primary audience for this guide is PBRN directors, coordinators, and investigators. The content is intended to help PBRNs expand the scope of their QI work to answer operational QI questions from ACOs and other integrated health care systems.

1.1.2 Leadership of ACOs, Public Health, and QI Organizations

The secondary audience for this guide is ACO directors and operational staff. The material describes specific activities such as rigorously designed project evaluations that PBRNs might provide on a contract basis. Section 5 contains a directory of PBRN contacts and their related expertise for ACOs and other organizations.

1.2 How to Use this Document

- [Section 2, Overview of Accountable Care Organizations](#), gives an overview of ACOs, including the genesis and types of ACOs, an overview of the Medicare Shared Savings Program (MSSP), and cost and quality metrics relevant to ACOs. Section 2 also gives an overview of ACO QI requirements.
- [Section 3, Why Should an ACO Pursue a Business Relationship with a PBRN?](#), describes how PBRN-ACO business relationships can be mutually beneficial, including alignment between PBRN skills and ACO QI needs. This section also describes funding mechanisms and limitations of PBRN-ACO collaborations.
- [Section 4, Case Examples](#), presents specific case examples of PBRN business relationships with other health care organizations including ACOs, health maintenance organizations (HMOs), State and local governments, physician associations, and independent physician practices.
- [Section 5, Directory of PBRNs Interested in Providing QI Services to Outside Organizations](#), provides a brief directory of PBRNs with experience and interest in providing QI services to outside organizations. The [AHRQ PBRN registry](#) also shows the breadth of PBRNs—many of which may be interested in being partners in QI activities.
- The [Appendix](#) provides references, literature, and other resources to facilitate the expansion of PBRN-ACO collaborations.

2. Overview of Accountable Care Organizations

2.1 What is an Accountable Care Organization?

The term “accountable care organization” was coined by Elliot Fisher of Dartmouth.¹ It refers to a variety of organizations whose mission is providing care to a defined population and being responsible for improving care quality and reducing total care costs. Importantly, “accountability” is defined by reimbursement levels, with higher revenue generated by providing better quality care rather than a higher volume of care—as is the case under traditional fee-for-service arrangements between payers and providers. Savings from reducing total care costs are shared between clinical ACO members and payers.

2.1.1 The Affordable Care Act

The Patient Protection and Affordable Care Act (ACA)² defines the establishment, eligibility, and requirements for Medicare ACOs in section 3022, “Medicare Shared Savings Program” (MSSP). In general, the ACA calls for the Secretary of Health and Human Services to establish a shared savings program that promotes accountability for a patient population, coordinates items and services under Medicare parts A and B, and encourages investment in infrastructure and redesigned care processes for high-quality and efficient service delivery.² Adherence to ACA requirements allows an ACO to participate in the MSSP and receive extra payments for improvements in care quality.

2.1.2 Types of ACOs

The ACA allows for “ACO professionals” in group practices, networks of individual practice, hospital-professional partnerships, and hospitals employing professionals to participate in the MSSP if they are responsible for at least 5,000 patients. The two general models for ACOs are physician-led and hospital-led. Muhlestein and colleagues³ developed the following taxonomy of ACOs:

- **Full Spectrum Integrated ACOs**—Organizations that provide all aspects of health care and most closely resemble what academics envisioned as ACOs.
- **Independent Physician Groups**—Organizations of smaller primary care practices that do not contract with other providers for additional services.
- **Physician Group Alliances**—Similar to independent physician groups, but usually multispecialty and without hospital affiliation.
- **Expanded Physician Groups**—Organizations that offer only outpatient services but contract with hospitals or other groups to provide additional services.
- **Independent Hospital ACOs**—Organizations that have a single owner, directly offer inpatient services, contract with outside providers for outpatient services, and do not offer subspecialty care.
- **Hospital Alliance ACOs**—Organizations with multiple owners providing inpatient services who contract for outpatient services. These ACOs tend to have many participants and be located in geographically large rural areas with small populations.

These different organizations have varying resources and needs for services that PBRNs might provide. For example, independent hospital ACOs usually have in-house QI staff and technical capabilities and are more likely to contract for intellectual services (e.g., rigorous program evaluation) than technical support for extracting data from their EHRs.

Many independent physician groups may require help extracting, organizing, and interpreting their data.

2.1.3 Overview of the Medicare Shared Savings Program

Most of the many commercial ACOs were established under the MSSP. Under this program, organizations can choose between two tracks: shared savings only during the initial 3 years, or both shared savings and losses. The percentage of shared savings is larger for organizations willing to accept the risk of losses.

The first step in the program is establishing benchmarks for the organization using the most recent 3 years of Medicare Part A and B data for fee-for-service beneficiaries assigned to the ACO. The benchmarks establish the baseline for measuring changes in quality and cost of care, and are weighted to the national average performance to establish a minimum savings rate (MSR). The MSR accounts for normal variation in expenditures: the ACO must produce average cost reductions greater than the MSR to receive shared savings. The same approach applies to minimum losses: the organizations are not at risk for losses within the minimum loss rate. Savings and losses are calculated by comparing average per capita Medicare expenditures (risk adjusted) in the current year to the ACO's updated benchmark. The organization must meet quality-of-care standards to qualify for shared savings.

2.1.4 Cost and Quality Metrics

In the one-sided model (only shared savings), the organization may share in savings up to 50 percent *if it meets minimum quality-performance standards*. In the two-sided model (shared savings and losses), the organization may share up to 60 percent depending on quality performance. Performance payments are up to 10 percent in the one-sided model and 15 percent in the two-sided model. The higher rates in the two-sided model are designed to encourage organizations to share the risk of losses.

The 2015 MSSP performance measures include 33 quality metrics across 4 domains that ACOs must assess in each of the 3 performance years (see Table 1).⁴ The measures include 8 for patient/caregiver experience, 10 for care coordination and patient safety, 8 for preventive health, 7 composite measures for at-risk populations (2 for diabetes, hypertension, ischemic vascular disease, heart failure [left ventricular systolic dysfunction], coronary artery disease, and depression).⁵ Data on quality measures are collected and reported through the Group Practice Reporting Option (a Web interface) as well as through Medicare administrative claims and a standardized patient experience of care survey—the Consumer Assessment of Healthcare Providers and Systems for ACOs.⁶

Pay for performance on quality measures is phased in over 3 years. In the first year, the organization is paid for reporting all 33 measures. In the second year, pay is for performance on 25 measures and for reporting on 8. In the third year, pay is for performance on 32 measures and reporting on 1 (a survey measure of patient functional status included in the patient-experience domain).

Table 1. 2015 Quality Performance Standard Domains

2015 Reporting Year: Total Points for Each Domain Within the Quality Performance Standard Domain	Number of Individual Measures	Total Measures for Scoring Purposes	Total Possible Points	Domain Weight
<i>Patient/Caregiver Experience</i>	8	8 individual survey module measures	16	25%
<i>Care Coordination/ Patient Safety</i>	10	10 measures, the EHR measure is double- weighted (4 points)	22	25%
<i>Preventive Health</i>	8	8 measures	16	25%
<i>At-Risk Population</i>	7	6 measures, including a 2-component diabetes composite measure	12	25%
Total in all Domains	33	32	66	100%

Pay for performance is assessed relative to national benchmarks or a flat percentage attainment (used when the 60th percentile of the distribution is greater than or equal to 80 percent attainment of the goal). Assessment is by a point system. Performance at or above the 90th percentile earns two full points for the measure with decreases of 0.15 points for each lower decile; performance lower than the 30th percentile receives zero points⁷. Total possible points by domain are 14 for patient experience, 14 for care coordination and patient safety, 16 for preventive health, and 14 for at-risk populations. Points are summed and divided by the total points available for each domain with equal weight given to each domain.⁷ The results determine the organization's performance score and shared savings rate. More detail is in the Centers for Medicare & Medicaid Services (CMS) document *Improving Quality of Care for Medicare Patients: Accountable Care Organizations* ([PDF – 1.6MB](#)).⁸ The [Appendix](#) includes links to 2014 quality metric benchmarks and 2015 Measures Information Forms.^{4,5,9}

2.1.5 ACO 2.0

The first phase of ACO implementation under MSSP (ACO 1.0) involves managing total costs and improving population health as measured by the 33 quality metrics. The second phase, ACO 2.0, follows once an organization completes the ACO 1.0 requirements. New ACOs will not be immediately subject to more stringent ACO 2.0 criteria. ACO 2.0 will involve new mechanisms and payment structures (such as bundled payments) to manage high-cost patients and prevent unnecessary health care utilization. Prevention approaches will require predictive modeling of patients likely to have high needs and utilization and testing of interventions to prevent acute episodes of high-cost care and ensure appropriate end-of-life care.

2.2 ACO QI Requirements and PBRN Established Areas of Expertise

Quality-of-care targets mandated under MSSP give ACOs strong incentives to improve quality and thereby increase shared savings. Some very experienced organizations (e.g., entities in the [Pioneer ACO pilot program](#)) have well-developed infrastructure and resources and experience managing quality. However, many organizations—particularly newly formed ACOs—have little or no experience managing population health. PBRN experience in conducting population health research could be highly valuable to organizations learning to manage care this way.

**“Mixed-methods analysis of ACO measures by PBRNs
can help organizations achieve quality improvement goals.”**

– Wilson Pace, MD, DARTNet Institute



Dr. Pace presented on a National Webinar in August 2015 titled “[DARTNet Guided Exploration of Linkages Between Existing Health Data, Patient Reported Outcomes and PBRN Research.](#)”

The webinar included a discussion of DARTNet’s collaboration with an ACO to improve adult immunization rates.

2.2.1 Data Extraction and Management

Incorrect data that does not reflect the true quality of care is one of the toughest challenges facing ACOs trying to meet quality targets. PBRN researchers are among the most sophisticated users of administrative claims data and data extracted directly from EHRs. Many newly established ACOs could benefit from the experience of PBRNs in aggregating and cleaning administrative claims data—especially across separate organizations and technological platforms. New ACOs could also use the technological experience of PBRN researchers as well as the software they have developed to conduct population-based QI analyses. PBRNs may be particularly effective at identifying local contextual issues. Contextual measures that PBRNs might help develop include unique local barriers to patients’ access to care, staffing issues, and cultural norms.

A recognized and valuable skill that PBRNs can offer is their experience in defining and reporting relevant contextual measures. If adequately monitored, data on contextual measures can facilitate an organization’s pursuit of effective QI strategies, driving improvement in pay-for-performance measures within an ACO. PBRNs could provide the necessary skills in detecting underlying reasons for QI performance issues and monitoring populations of at-risk patients.

2.2.2 Quality Measurement

PBRNs also have rich and diverse expertise in quality measurement. Although the 33 MSSP quality metrics are set by CMS and focus on outcomes assessment, investigators in PBRNs could provide valuable insights about establishing process quality metrics that lead to better outcomes; this assistance could support demonstrated improvement in the 33 MSSP measures. PBRNs could also help

ACO leaders break down MSSP measures (e.g., by clinic, group) to understand where improvements could be made. Assisting ACO leaders in understanding how data are generated (e.g., workflows, coding issues) would be helpful in conducting thorough quality measurement. All these skills are squarely within the domain of PBRN researchers.

Resources Demonstrating PBRN Expertise Relevant to CMS Quality Measure Domains


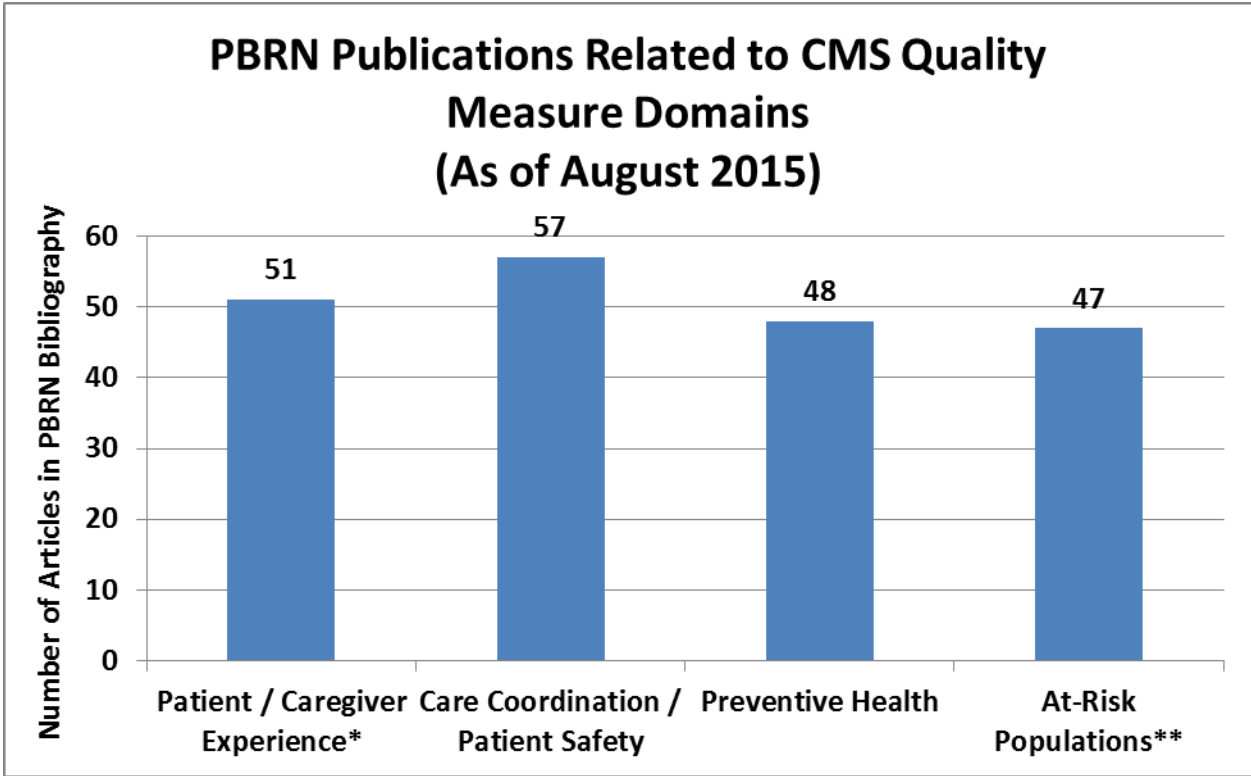
- The [PBRN Research Bibliography](#) includes nearly 200 articles relevant to the four CMS quality measure domains: patient/caregiver experience, care coordination/patient safety, preventive health, and at-risk populations (see Figure 2).
-  PBRN members presented on an AHRQ PBRN Resource Center webinar titled "[Patient Engagement in Primary Care](#)".
- The North American Primary Care Research Group selected "Engagement" as the theme of its [2015 PBRN Conference](#).

Figure 2. PBRN Publications Related to CMS Quality Measure Domains (As of August 2015)






* Includes articles relevant to patient/caregiver experience and patient engagement, participation, or involvement.

**Includes diabetes, hypertension, ischemic vascular disease, and heart failure.

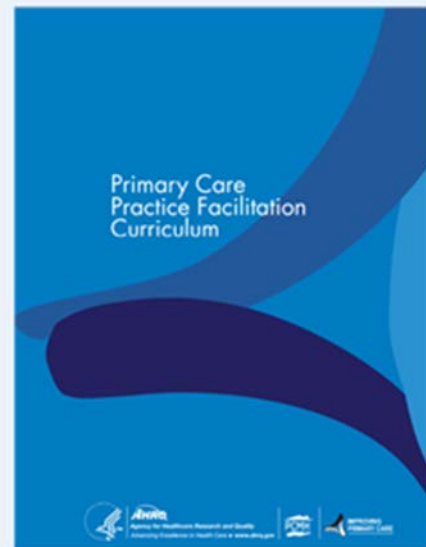
2.2.3 Practice Improvement Plans and Interventions

PBRN researchers have been intimately involved in helping practices improve quality. Indeed, Williams and Rhyné suggest renaming PBRNs “Health Improvement Networks” to acknowledge the expanding scope of PBRN activities. Strategies employed by PBRNs include practice facilitation,¹⁰⁻¹³ academic detailing,¹⁴⁻¹⁶ and leading learning collaboratives.^{10,17,18} PBRN researchers are also experts in planning and conducting evaluations of interventions designed to improve quality. Rigorous study design, minimizing bias in data collection, and expert statistical analysis are services needed by ACOs and other health care organizations.

Helpful resources related to Practice Facilitation:

-  [Frontline Innovation Video: Practice Enhancement Assistants](#) from the AHRQ Innovations Exchange
- [Implementing the Patient Centered Medical Home: Practice Facilitation How-To Guide](#) from AHRQ
- The [AHRQ Primary Care Practice Facilitation Curriculum](#)
-  [Practice Facilitation Webinars](#) from AHRQ
-  Webinar on [Exemplar Primary Care Practice Facilitation Training Programs](#), featuring Dr. Knox, LA Net

AHRQ Primary Care Practice Facilitation Curriculum Cover



3. Why Should an ACO Pursue a Business Relationship with a PBRN?

3.1 Alignment between PBRN Activities and ACO QI

PBRNs have been conducting QI research with frontline staff for decades. As part of this work, PBRNs have established working relationships with clinics and staff that are critical to successfully implementing new workflows and models of care. ACOs thinking about business partnerships with PBRNs should be aware of several assets and areas of expertise PBRNs might bring to the relationship. We highlight some of these assets and expertise below.

PBRNs also have much to gain from new forms of business relationships. As ACOs and other organizations expand and encounter new issues with delivering health care, researchers are in a position to turn these issues into novel research questions and submit grants to study potential interventions. Moreover, working with the delivery system is likely to generate preliminary data to make the ideas in grant submissions compelling. Thus, there is high potential for bi-directional and synergistic relationships between organizations delivering care and PBRNs.

Ways to Learn More about PBRNs:

- Visit the [PBRN Web site](#)
- View the [PBRN Registry](#) for a comprehensive list of AHRQ-registered PBRNs
- Peruse the [PBRN Profiles](#) to learn more about PBRN research and activities
- Search the [PBRN Research Bibliography](#) to find PBRN-relevant research articles
- Access PBRN Resource Center Webinars on the [PBRN YouTube Playlist](#)

3.1.1 Relationships

PBRN leadership with whom we conferred consistently highlighted that successful practice change requires relationship building and mutual trust between the people planning the changes and the people implementing the changes. Successful implementation depends on strong relationships that newly formed and maturing ACOs often do not have with their clinics. This may be particularly true for hospital-based ACOs that acquired clinics to meet the minimum number of covered patients for ACO accreditation. PBRN leaders know how to build solid relationships between organizational leadership and clinical staff and in many cases already have longstanding relationships with clinics. Because PBRN leaders know their clinics, the people who work there, and the patient population they serve, QI interventions can be appropriately tailored to the local environment, improving the likelihood of success.

3.1.2 Training and Technical Assistance

Historically, the grant-funded work of PBRNs has tended to focus on specific components of primary care practice change such as improving care for diabetes, chronic obstructive pulmonary disease, or multiple chronic conditions.¹⁹⁻²³ To achieve practice change, PBRN researchers have developed expertise in clinical training and providing technical assistance with data management to both clinical and administrative staff. For example, researchers at The Distributed Ambulatory Research in Therapeutics Network (DARTNet) can help ACOs extract, transform, and load data from multiple

different EHRs into a common data model.²⁴ Several ACO leaders reported that amalgamating data from new clinical partners in the ACO was a major hurdle to conducting QI activities. ACO leaders can leverage experience such as this and contract with PBRNs to conduct effective training and help clinics and managers solve technical issues. Again, PBRN expertise in adapting programs to local conditions and patient populations improves the likelihood of success.

Profiles of AHRQ Centers for Primary Care Practice-Based Research and Learning (P30 Center Grants)

Each P30 Center has a unique purpose and focus, but all share common objectives, including coalition building, training, and diverse technical assistance. More than 50 distinct PBRNs, roughly one-third of all registered Primary Care PBRNs, are members of a PBRN P30.

[Learn more about the P30 Centers as prospective business partners
and sources of diversified business models.](#)

3.1.3 Learning from the Practices

A fundamental tenet of practice-based learning, which occurs in the context of the workplace, is that frontline staff and clinic leaders know their patients and local context and have valuable information about what may or may not work in their setting. ACO leaders may find it useful to explore the potential for reciprocal learning. In some cases, clinics will benefit from programs or interventions that standardize practice (e.g., to reduce unnecessary, costly variation). In other cases, the larger organizations will benefit from the experience and knowledge generated from learning by doing. With a receptive organizational culture, these types of practice-based discoveries can be shared and disseminated throughout the ACO and other organizations.

3.1.4 Platform for Advancing Research

Working with a PBRN can be prestigious for an ACO. Some organizations have reported that their public image and attractiveness to purchasers is enhanced by a reputation for conducting research. Affiliations between health plans and academic institutions often figure prominently in marketing materials for the health plan. The relationship can also be beneficial for PBRNs. For example, data and tools built for operational needs may form the basis for subsequent grant applications by PBRN researchers. Data collected as part of an operational initiative could be used as preliminary data for grant proposals and graduate student dissertations.

3.2 Business Models for PBRNs to Assist in QI Measurement

ACOs and other integrated health systems can achieve their organizational goals by leveraging PBRN experience with QI work, population health, and training.

3.2.1 PBRN Business Models

At least two successful organizational models exist for PBRNs conducting contract-based work for other organizations. Both center around existing relationships.

First, many PBRNs contract with organizations with which they have no formal affiliation. These contracts most often arise from relationships from previous research projects or connections made at national conferences. Examples include state health department contracts to establish registries or surveillance programs and contracts to prepare Medicare claims data so an ACO can better understand how its Medicare population utilizes care.

Second, some PBRNs have contracts to perform infrastructure and analytic work for the operational arm of an organization to which they already belong. In these arrangements, researchers do operational QI work in addition to their externally funded grant projects. Work funded by grants is often highly beneficial to the organization. For example, a patient registry developed by a PBRN as part of grant-funded work could be used for operational infrastructure and QI monitoring.

The business model used by the PBRN will differ depending on the core capabilities and research expertise of the investigators. Most PBRN leaders make contacts with outside organizations at conferences or through grant-funded work. AHRQ hopes that this document, including the [Directory](#) in Section 5, will be another means for partnership building between PBRNs and outside organizations.

3.2.2 Business Models Differ by Stage of ACO Development

ACOs in the early stage of development need help with tasks such as data extraction from EHRs, analysis of claims data, infrastructure building, and defining populations of patients. ACOs at later stages of development may wish to contract a PBRN for help with designing interventions and programs as well as choosing rigorous methods for program evaluation.

3.3 Funding Mechanisms for QI Measurement and Evaluation

PBRN collaborations can be funded many ways, depending on the nature of the project. For example, hourly consulting fees are an appropriate mechanism for small projects or brief trainings. As the size and scope of the project increases, fixed-fee contracts are often used with aims and deliverables specified before work begins and the offerer assuming the risk for cost overruns.

One potentially novel funding arrangement is the “retainer” approach used by attorneys. In this arrangement, the contracting organization agrees to pay a fixed annual amount to the PBRN, but the particular training provided, projects, and scope of work are negotiated and renegotiated as the needs of the contracting organization evolve. This model has at least two major benefits. First, the PBRN receives a stable base of funding through the collaboration. Second, the contracting organization maintains the flexibility to fund projects that become priorities within the delivery system as the health care landscape evolves.

3.4 Challenges in Fostering New Business Collaborations

Recognizing the expectations and project management constraints among business partners is the first step to mitigating the impact of the constraints. Understanding differences in expectations about timeliness and factors that affect responsiveness is particularly important. A few challenges are noted below.

Timelines

- Representatives from ACOs indicated that business partners need to be able to deliver data and analyses with quick turnaround times. PBRNs doing contract work need to work with their partners on shorter timelines than traditional research projects. On the other hand, because of their knowledge of local practices, PBRNs may be extremely helpful in longer-term endeavors such as “drilling down” into apparent QI problems with the help of valuable insights from frontline staff. This drilling down may involve identifying contextual factors (e.g., cultural barriers) or workflow issues within clinics.

A second timeline issue is the need to align the strategic planning of the operational organization with PBRN research that needs to begin 2-3 years in advance to gather a base of preliminary evidence to inform the strategic plan. This alignment requires regular planning meetings between the PBRN and other operational entities so that answers to research questions (either operationally or grant funded) contribute to operational needs in a timely manner. It is necessary for ACO and PBRN leaders to allow enough time at the beginning of QI initiatives to develop a shared understanding of the vision of ACO leaders, as well as a set of feasible solutions to delivery system problems at the beginning of a project. In this way, operational and research goals are more likely to be closely aligned.

Balancing the Pursuit of Traditional Research and Quality Improvement Projects

- PBRN leaders who discussed their business models with us expressed a desire to balance time spent on traditional grant-funded research with providing operational QI services. Some PBRN leaders felt that without careful planning, the demand for QI services could overwhelm PBRN research. On the positive side, providing QI services can stabilize PBRN budgets because QI projects can be undertaken between grant funding cycles. Developing closer collaborative agreements with other organizations can also be a source of research ideas and preliminary data for research grants.

“If PBRNs are sufficiently staffed and have the resources to conduct QI projects, they can act quickly to fulfill ACO needs”.

– David Swieskowski, Mercy ACO

The exact balance of research and QI service will depend on the needs and priorities of each PBRN. Some leaders we spoke to thought that 80% research and 20% QI service would be the optimal division of work for the PBRN as a whole, while recognizing that balance needs to be maintained at both the investigator and PBRN level.

4. Case Examples

The following case examples highlight some of the business model configurations PBRNs can use to provide services to ACOs and other entities. The case examples below are a sample of real-world experiences and sentiments from leaders of a few of the more well-established PBRNs. The case examples are organized by the type of organization in the business relationship. The Lessons and Advice section of each case examples provides reflections about what the PBRN learned from the partnership. Collectively, we hope that their experiences in content areas, QI objectives, and types of partnerships will stimulate other researchers to form business relationships that apply PBRN research expertise to the pursuit of QI improvement and evaluation in other organizations.

4.1 PBRNs Offering Services to Other Entities

Some PBRNs are already offering QI and other services to outside entities. A directory containing additional references and descriptions of the PBRNs projects featured here is shown in [Section 5](#).

4.2 Working With State-based Organizations

4.2.1 Case Example: Optimize Personnel Preparation Time and Level of Staffing

The Oregon Practice-Based Research Network (ORPRN) contracted with the Oregon Health Authority (OHA) on developing the Behavioral Health Home Learning Collaborative.

- Nature of the contract.** This project focused on developing a learning collaborative for behavioral health agencies going through practice transformation. The goal of the work was to understand what could be written into a state-level application for recognition as a patient-centered medical home. ORPRN was asked to produce a budget and scope of work that included attending learning sessions and providing practice facilitation at two different times. ORPRN provided monthly facilitation (except for months with learning sessions), management for practice facilitators, two faculty members to attend curriculum planning meetings, written field notes, and a final report. Because overhead was capped far below the University's standard indirect rate, material costs and personnel were included "above the line" (i.e., as direct costs).

ORPRN had not previously worked with behavioral health agencies in Oregon around practice transformation, so negotiations around the scope of work focused on how ORPRN could build competency to understand this new field in addition to the parameters of the work. OHA had a firm idea of what they wanted. ORPRN gave a bid that met OHA needs, with adjustments from ORPRN, to improve the plan. ORPRN was eventually funded for a second project year in a negotiation process that was much easier because the project needs and mutual trust had been established.

- How did the project arise?** ORPRN was approached to work on this project because of their experience in facilitating primary care practice transformation and QI work and their multiple practice facilitators in the field. ORPRN had worked with OHA on a project studying medical homes for children, and the same principal investigator was involved in both projects. ORPRN also has a strong reputation for completing work, and ORPRN and OHA had previously gone through a contracting process. Further, ORPRN was able to begin work immediately on this project, which had already been delayed.

- **Lessons and advice.** ORPRN advised PBRNs developing similar contracts to negotiate for sufficient FTE to actively participate in curriculum design, have enough practice facilitation time for learning about the practice environment in advance (e.g., at the clinics whose learning sessions they will facilitate), and provide staff with time for field note review and project management.

ORPRN leadership strongly suggested that PBRNs think about how the work will advance the PBRN's goals and mission, negotiate for dissemination (e.g., manuscripts, presentations), be clear about how the work will help identify new members, and determine how data can be collected and used.

In addition, PBRNs should be aware that they may not own the work or resulting products. If the PBRN is seen as a vendor rather than a subcontractor, they may need to be careful to protect their expertise as they collaborate and conduct the project. The PBRN will need to balance their contribution to the larger community with the need to maintain their competitive advantage. PBRNs also need to be aware that contracts vary in length, with uncertainty about the next opportunity. Thus, an additional challenge is staffing to fulfill contract needs that have variable time frames and scales.

4.2.2 Case Example: Negotiate for Product Branding

In the mid-2000s, the Oklahoma Practice-Based Research Network (OKPRN) contracted with their state-based QI Organization, the Oklahoma Foundation of Medical Quality (OFMQ), to improve care for diabetes.

- **Nature of the contract.** The OFMQ had considerable QI expertise; however, they lacked access to primary care practices. OKPRN provided their network of primary care practices as a testing ground for the initiative. OKPRN was specifically contracted to: collect best practices from the primary care clinics, measure performance, identify exemplar practices, and help with implementation.
- **How did the project arise?** OFMQ recognized that OKPRN's network of primary care practices could be used as a learning laboratory. OKPRN also had expertise in registry building, which was critical to improving diabetes care, and possessed other unique technical capabilities. They provided programming that allowed practices to tailor registry implementation to each clinic's computing platform.
- **Lessons and advice.** The OFMQ diabetes project eventually led to the development of a best practices toolkit that was branded as belonging to OKPRN and was disseminated by them. This experience emphasizes that PBRNs should negotiate product ownership at the beginning of projects.

The benefits of partnerships between PBRNs and outside organizations go beyond financial compensation and include opportunities to develop and disseminate branded products.

4.2.3 Case Example: Align Medicaid QI Work With Broad PBRN Objectives

The Oklahoma Health Care Authority (OKHCA) contracted with OKPRN to monitor and provide feedback on the quantity and quality of early periodic screening and diagnostic testing services.

- **Nature of the contract.** OKPRN was contracted to develop best practices for well-child visits. OKPRN investigators developed a curriculum and performed training in academic residency settings, teaching clinicians the techniques for turning “sick” visits into well-child visits, and implementing screening tools.
- **How did the project arise?** OKHCA knew of OKPRN’s track record in this area and wanted to gain from their expertise.
- **Lessons and advice.** OKPRN leaders stressed the importance of alignment between the contract QI work and the PBRN mission and values. Grants will follow from contracts when this congruence exists—especially when the analytic results from QI contracts can be used for grant applications and graduate student dissertations. (Note that insight and data generated through Federal contracts belongs to the Federal Government, so permission is required to retain and use the data for purposes outside the contract.)

One barrier identified by OKPRN leaders is potential conflict between investigators’ academic appointments and contract-type work. Academic institutions may be concerned that faculty time is not being used appropriately. Therefore, OKPRN established itself as a 5013c nonprofit organization. This legal structure allows OKPRN to receive and manage funds directly from government agencies and other organizations.

OKPRN leaders encouraged PBRN leaders to think about the balance between academic research and contract QI work. Investigators need to make a plan for maintaining scholarly activities which traditionally do include QI work.

4.2.4 Case Example: Consider the Potential for Quality Improvement Work to Lead to Sustainable Funding

- **Nature of the contract.** In 2003–2004, OKPRN received a contract from the State health commissioner to develop an electronic surveillance system for influenza-like illness. OKPRN implemented syndromic surveillance with daily reporting at 30 clinics across the State. Data were translated into a report describing events at the State level and estimates of how well vaccines and antiviral medications were working.
- **How did the project arise?** At the time, public health departments were receiving weekly reports from hospitals and other institutions but had no data from primary care clinics or community health. Data from primary care clinics were needed to improve the quality of surveillance.
- **Lessons and advice.** Ultimately, the project turned into a 6-year contract to develop and maintain the surveillance system. While contract QI work does not always lead to publications, successfully completed contracts often lead to long-term stable funding from ACOs and other organizations when PBRN capabilities become evident.

4.3 PBRN Researchers Working Within ACO Systems

The cases below pertain to PBRNs that are already embedded within an ACO system. PBRN researchers embedded within an organization often have the advantage of experiencing barriers to quality improvement first hand as part of their own clinical practice and are aware of potential solutions and resource limitations. Embedded researchers often have strong ties to delivery system

management and, therefore, have trust and rapport with the leaders trying to improve quality. While the research projects of these PBRNs may have been focused on issues not directly or immediately relevant to their organization in the past, the skills and knowledge developed can be turned inward to work closely on quality improvement endeavors. ACO leaders can leverage this experience and contract with PBRNs to conduct effective training and help clinics solve QI issues. PBRN expertise in adapting programs to local conditions and patient populations improves the likelihood of success.

4.3.1 Case Example: Negotiate Up Front for Resource Sharing and Support

The Massachusetts General Primary Care (MGPC) PBRN arose from the development of hospital primary care infrastructure. MGPC PBRN is wholly contained within the Partners HealthCare system. Because the structure of the PBRN mirrors the operational structure of the organization, the PBRN is in a good position to meet the clinical research needs of both the hospital and Partners HealthCare.

- **Nature of the contract.** The PBRN was attractive to operational staff because of the network's experience conducting population-based research. The Partners organization was inexperienced in population health management because they had contracts with multiple payers such as Blue Cross Blue Shield, Medicare, and other managed care organizations. This fragmented their understanding of provided health care and outcomes across several organizations. PBRN investigators provided a variety of services including developing an algorithm for attributing patients to clinicians, refining and upgrading disease registries, and developing custom software to predict patients with potentially high utilization.
- **How did the project arise?** Operational staff were familiar with the population health work and technical capabilities of MGPC from overlapping clinical and research roles and the reputation of the research group within Partners. These factors led the delivery system's physician organization to approach the PBRN to learn about population health management.
- **Lessons and advice.** Leaders at MGPC reported that negotiating a relationship with an operational partner can be complicated. Agreements around resource sharing should be discussed up front. Similar to the experience of other PBRNs, MGPC was concerned that tools and infrastructure developed by the PBRN could be taken by the health care network without benefits flowing back to the PBRN.

To manage the relationship, MGPC PBRN leaders met with operational leaders once per week to discuss funding clinical research and primary care administration. Combining these discussion topics allowed the organization to move from a pay-for-performance model to a population health model.

Investigators at MGPC PBRN emphasized that PBRNs must develop their value proposition to ACOs and other organizations. PBRNs that can conduct research that answers strategic questions for ACOs in 2–3 years have a clear value proposition. Showcasing existing resources or products from grant-funded work demonstrates capabilities. MGPC investigators also emphasized the need to balance short-term QI activities with longer-term PBRN and ACO needs.

4.3.2 Case Example: Contract With State Medicaid: Rainbow Research Network

The PBRN Rainbow Research Network (RRN) is a consortium of 216 pediatric primary care physicians in 81 practices affiliated with Rainbow Babies and Children's Hospital of Cleveland and the University Hospitals Rainbow Care Connections ACO. Their example highlights the new opportunities that health

care reform is creating for PBRNs. RRN participated in the Medicaid Technical Assistance and Policy Program (MEDTAPP), a university-Medicaid research partnership with Federal and nonfederal funding to support the efficient and effective administration of the Medicaid program. In this case, participation in MEDTAPP allowed RRN to receive a CMS innovation grant to start a pediatric ACO with a subset of RRN members.

- **Nature of the contract.** MEDTAPP focuses on workforce development, QI initiatives, and rapid technical/clinical consultation.
- **How did the project arise?** The RRN PBRN developed expertise in tailoring interventions to Ohio practices in a research project that involved direct observation of primary care.
- **Lessons and advice.** The RRN MEDTAPP work shows that QI contracts can arise from many sources and involve diverse partners, with new opportunities continually appearing as health care undergoes reform. QI contract work can also lead a PBRN in new directions. Although PBRNs do not need to become ACOs to contribute to QI work, RRN had knowledge about and a relationship with their members that provided a strong basis for creating their pediatric ACO. Seed funding from the Ohio governor's office and Ohio Department of Medicaid was also instrumental.

4.3.3 Case Example: Contract With Industry: Rainbow Research Network

In addition to academic contracts, RRN has experience with industry contracts.

- **Nature of the contract.** PBRN clinics were recruited to participate in clinical trials for drug and device studies.
- **How did the project arise?** RRN was contracted by the Ohio State Governor's office as part of an economic development plan to increase medical device and pharmaceutical research in Ohio.
- **Lessons and advice.** Contracting with government entities and offices can assist in building the political capital to advance the mission of the PBRN. Infrastructure and resources acquired and built as part of industry research can be leveraged to conduct subsequent population health research.

4.4 ACO Leader Experiences

We spoke with several ACO leaders to obtain their insights about how ACOs and PBRNs could work more closely on contract QI work. Since these leaders are potential PBRN clients, we were interested in identifying their perceptions of gaps in their own capabilities and awareness of PBRN capabilities. The examples below highlight some ways that ACOs have reached out to PBRNs to perform QI work.

4.4.1 Case Example: Consider Differences in Desired Data

The University of Wisconsin (UW) Health ACO partners with the UW Health Innovation Program to investigate a variety of operational questions.

- **Nature of the contract.** The UW Health ACO sets aside a fixed amount each year to have the UW Population Health Institute on retainer. During the year, projects are proposed and scopes of work refined to meet operational needs. Deliverables are flexible during the course of any budget year.

UW Health ACO was first attracted to the arrangement because of the university's research expertise in acquiring, cleaning, and analyzing Medicare claims data. The ACO had diffuse data reporting across multiple analytic teams, and university-based researchers assisted in integrating the data and used them to develop population denominator definitions.

The university-based group is not set up to conduct clinical program evaluations in an ad hoc way. Rather, ACO operational staff develop health services research questions and partner with the university to answer them.

The arrangement is now so advanced that the university-based group receives a live Medicare data feed for the ACO. The group also has direct (read-only) access to EHRs for the UW ACO. This high level of integration permits rapid and rigorous programmatic work and statistical analysis. Future work will include the development of predictive models to prevent unnecessary utilization by patients who may to become more severely ill.

- **How did the project arise?** ACO and university leaders established the Population Health Institute specifically to perform QI work for the ACO and simultaneously start a research program.
- **Lessons and advice.** Leaders identified a cultural difference between ACO leaders and PBRN leaders around the need for “perfect” data. ACO leaders stressed that for QI work, the higher priority is being able to make timely clinical decisions. A similar minor disconnect between researchers and ACO leaders can occur when clinical organizations have ad hoc requests. Again, ACO leaders stressed the importance of timeliness over perceived publication-ready answers.

ACO leaders noted that university-based researchers have many good ideas about interventions to test and policies to implement that health systems simply are not ready to test. PBRN awareness of the operational needs and capabilities of an organization is critical to providing relevant services. Health care systems can't pay for tools they are not ready to use.

In the UW Health ACO-UW Population Health Institute partnership example, the relationship is sufficiently mature that the partners are questioning whether the university or the health system is the appropriate place for the data infrastructure. The ACO supported the development of data infrastructure that might be more efficiently maintained in-house, so that infrastructure may be moved back to the health system at some point.

5. Directory of PBRNs Interested in Providing QI Services to Outside Organizations

The examples identified in this guide highlight the growing business opportunities between PBRNs and other entities such as government agencies and ACOs. The range of possible contracted activities is diverse and includes evaluating QI programs, assisting with technical capabilities, conducting population health surveillance, and serving as research sites for industry-funded grants. The expansion of business relationships between PBRNs and these types of organizations has the potential to both stabilize funding for PBRNs and expand their resources and capabilities for conducting grant-funded research. In this regard, business relationships between PBRNs and contracting organizations are mutually beneficial.

The goal of ACO measures is accountability. The value-add of PBRNs is analyzing and applying the measures using mixed methods, to help organizations reap the rewards of quality improvement.

The directory on the next page provides an initial list, as of the writing of this document, of PBRNs with experience and interest in providing QI services to ACOs and other outside organizations. In addition to PBRN contact information, the directory identifies the type of organizations for which each PBRN has provided QI services, the categories of services provided, and the nature of the contractual relationship between the PBRN and the outside organization. We hope this directory will be a useful tool to foster ongoing and new business relationships, building on the expertise and experience of the PBRNs and the needs of ACOs and other organizations.

Directory of PBRNs Interested in Providing QI Services to Outside Organizations

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships	Experience in QI Relationships With Outside Organizations		
		Name and Email	<u>Type of Outside Organization(s)*</u>	<u>Description of Technical Assistance (TA) and Training Services Provided**</u>	Nature of Business Arrangement
Brigham and Women's Primary Care PBRN http://www.brighamandwomens.org/research/depts/medicine/general_medicine/PBRN/default.aspx	All 50 states and international locations	Jeffrey A. Linder, MD, MPH, FACP jlinder@partners.org	Range of organizations	<u>TA</u> : A, O <u>Training</u> : G, H, M, O	Grants and Contracts
Care Coordination Institute (CCI) http://pbrn.ahrq.gov/pbrn-registry/care-coordination-institute	Georgia, North Carolina, South Carolina, Tennessee	Rob Davis, MS rdavis@ccihealth.org	Accountable care organizations	<u>TA</u> : A, B, C, N, O, P, Q <u>Training</u> : D, H, L, M, N, O	Contracts
			Clinically integrated network	<u>TA</u> : A, B, C, N, O, P, Q <u>Training</u> : D, H, L, M, N, O	Contracts
Continuity Research Network (CORNET) http://www.academicpeds.org/research/research_CORNET.cfm	All 50 states	Nui Dhepyasuwan, MEd nui@academicpeds.org	Developing PBRNs	<u>TA</u> : A <u>Training</u> : G, H, I	Volunteered information to developing PBRNs, collaboration with other PBRN for work through subcontract or grant
			Hospital systems	<u>TA</u> : A <u>Training</u> : G, H, I, L, M	---
			Public health agencies (State and Federal)	<u>TA</u> : A <u>Training</u> : E, G, H, J, M	Grants
			Quality improvement organizations (QIO)	<u>TA</u> : A <u>Training</u> : G, H, L, M	Subcontracts
			Universities	<u>TA</u> : A, D <u>Training</u> : G, H, L, M	Subcontracts

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships Name and Email	Experience in QI Relationships With Outside Organizations		
			Type of Outside Organization(s)*	Description of Technical Assistance (TA) and Training Services Provided**	Nature of Business Arrangement
DARTNet Institute http://www.dartnet.info	All 50 states	Wilson Pace, MD wilson.pace@dartnet.info	PBRNs	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			ACOs	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			IPAs	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			Individual practices	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			Hospital owned systems	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			Academic researchers	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			FQHCs	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
			Private industry	TA: A, B, C, D, F, N, O, Q Training: G, I, L, N, O	Grants, Contracts, and Purchased services
Frontier and Rural Innovations Network http://frontierrural.org/	Colorado, Kentucky, Mississippi, Montana, Washington, West Virginia	Joel Dickerman, DO joeldickerman@c-ahead.org	Accountable care organizations	TA: C Training: G, H, I,	Grants
			Medical residencies	Training: I	Grants
			Universities	TA: C Training: G	Grants
Holistic Healthcare and Research Centre http://www.holistichealthcarerc.in/	South East Asia, India	Sreedhar Tirunagari, MD vathsatirunagari@gmail.com	Hospital systems	Training: G, H, J, S	Nongovernmental organizations (NGOs)
			Organizations seeking patient-centered medical home certification	Training: H	NGOs
			Universities	Training: H	NGOs

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships Name and Email	Experience in QI Relationships With Outside Organizations		
			Type of Outside Organization(s)*	Description of Technical Assistance (TA) and Training Services Provided**	Nature of Business Arrangement
Kentucky Ambulatory Network https://familymedicine.med.uky.edu/kentucky-ambulatory-network-kan	All 50 states	Roberto Cardarelli, DO, MPH Roberto.Cardarelli@uky.edu	Developing PBRNs	TA: C, O Training: E, I, L, M, O	---
			Hospital systems	---	---
			Organizations seeking meaningful use certification	---	---
			Organizations seeking patient-centered medical home certification	---	---
Military Primary Care Research Network (MPCRN) http://www.mpcrn.org/	All 50 states	Christopher Bunt, MD, FAAFP christopher.bunt@usuhs.edu	Hospital systems	Training: G, M	Federal Government (military) facilities
			Public health agencies (State and Federal)	Training: G, M	Military treatment facilities
			Universities	Training: G, M	MPCRN central hub is at Uniformed Services University of the Health Sciences
Neurology Practice Based Research Network http://www.northshore.org/neurological-institute/	All 50 states	Demetrius M. Maraganore, MD dmaraganore@northshore.org	Hospital systems	TA: A, B, C, D, K Training: E, G, H, I, J, L	Other: software licensing agreements, data use agreements
			Independent physician associations	TA: A, B, C, D Training: E, G, H, I, J, L	Other: software licensing agreements, data use agreements, sharing structured clinical documentation support toolkits built into the EHR for sharing de-identified data

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships Name and Email	Experience in QI Relationships With Outside Organizations		
			<u>Type of Outside Organization(s)*</u>	<u>Description of Technical Assistance (TA) and Training Services Provided**</u>	Nature of Business Arrangement
Neurology Practice Based Research Network, continued			Neurology departments	<u>TA</u> : A, B, C, D <u>Training</u> : E, G, H, I, J, L	Other: software licensing agreements, data use agreements, sharing structured clinical documentation support toolkits, sharing de-identified data for QI and practice-based neurology research using the EHR
			Universities	<u>TA</u> : A, B, C, D <u>Training</u> : E, G, H, I, J, L	Other: software license sharing agreements, data use agreements, sharing structured clinical documentation support toolkits for de-identified data for QI and practice-based neurology research using the EHR
OCHIN Practice-Based Research Network (formerly SafetyNet West) https://ochin.org/ochin-research/about-ochin-pbrn	All 50 states	Jennifer Devoe, MD, DPhil devoej@ohsu.edu	Organizations seeking patient-centered medical home certification	<u>TA</u> : A, C, D, Q <u>Training</u> : E, G, H, J, L, N	Grants
Oklahoma Physicians Resource/Research Network (OKPRN) http://www.okprn.org/	Oklahoma	Margaret Walsh, MS Margaret-Walsh@ouhsc.edu	Independent physician associations	<u>TA</u> : A, B, C, D, Q <u>Training</u> : E, G, M	Contracts
			Public employees insurance program	<u>TA</u> : A, C, Q <u>Training</u> : G, H	Contracts
			Public health agencies (State and Federal)	<u>TA</u> : A, B, C, D, Q <u>Training</u> : E, G, H, L, M	Contracts
			QIOs	<u>TA</u> : A, B, C, D, Q <u>Training</u> : E, H, M	Contracts
			Universities	<u>TA</u> : A, B, C, D, Q <u>Training</u> : E	Subcontracts

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships Name and Email	Experience in QI Relationships With Outside Organizations		
			Type of Outside Organization(s)*	Description of Technical Assistance (TA) and Training Services Provided**	Nature of Business Arrangement
Portland Research Network http://pbrn.ahrq.gov/pbrn-registry/portland-research-network	All 50 states	Tanveer Bokhari, MBBS tbokhari@portlandipa.com	Accountable care organizations	TA: A, B, C, D, F Training: E	Contracts
			Independent physician associations	TA: A, B Training: E, G, H, I	Grants
			Organizations seeking patient-centered medical home certification	Training: E	Grants
Practitioners Engaged in Applied Research & Learning (PEARL Network) http://www.pearlpbrn.com/	Connecticut, Maryland, Massachusetts, New Jersey, New York	Frederick A. Curro, DMD, PhD fac3@nyu.edu	Developing PBRNs	TA: B Training: G	Subsidiaries
Primary (Care) Practices Research Network (PPRNet) http://academicdepartments.musc.edu/pprnet	All 50 states	Steven Ornstein, MD ornstesm@musc.edu	Accountable care organizations	TA: A, B, C, O, Q Training: E, O	Grants
			Independent physician associations	---	Grants
			Organizations seeking meaningful use certification	TA: N	PBRN members
			Organizations seeking patient-centered medical home certification	TA: O	PBRN members
			Universities	TA: A, B, C Training: I	PBRN members
Southeast Wisconsin Alliance for Translating Research into Practice https://ctsi.mcw.edu/investigator/cbrn9/	All 50 states	Jeff Whittle, MD, MPH jeffrey.whittle@va.gov	Faculty active in internal QI activities and research. PBRN director is former officer with Medicare QIO in Pennsylvania (KePRO, Inc.)	TA: D Training: G, M	Hourly consultation

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships Name and Email	Experience in QI Relationships With Outside Organizations		
			Type of Outside Organization(s)*	Description of Technical Assistance (TA) and Training Services Provided**	Nature of Business Arrangement
State Networks of Colorado Ambulatory Practices & Partners (SNOCAP) http://www.ucdenver.edu/academics/colleges/medicalschoo/departments/familymed/research/PBRN/SNOCAP/Pages/SNOCAP.aspx	All 50 states	Donald Nease, MD donald.nease@ucdenver.edu	Coordinated care organizations	TA: A Training: E, G, H	Contracts
			Developing PBRNs	Training: I	Consultation
			Independent physician associations	TA: O, Q Training: E	Contracts
			Public health agencies (State and Federal)	TA: B Training: I, M	Grants
			QIOs	TA: R Training: I	Consultation
University of Toronto Practice Based Research Network (UTOPIAN) http://www.dfcm.utoronto.ca/research/UTOPIAN.htm	United States, Canada, United Kingdom, Brazil, Ethiopia	Ivanka Pribramska, PhD dfcm.utopian@utoronto.ca	Developing PBRNs	TA: A, C, D Training: E, G, H, I, L, M	Grants
			Hospital systems	TA: A, C, D Training: G, H, L, M	Contracts
Upstate New York Practice based Research Network (UNYNET) http://fammed.buffalo.edu/unynet/	New York	Chet Fox, MD chetfox@gmail.com	Developing PBRNs	TA: B, D Training: E, I	Collaborative learning and mentoring
			Organizations seeking meaningful use certification	TA: B, D Training: E	Subcontracts
			Organizations seeking patient-centered medical home certification	Training: E, I	Subcontracts
			Robert Wood Johnson Aligning Forces for Quality community, New York State e-health collaborative	Training: E, I	Subcontracts
Virginia Ambulatory Care Outcomes Research Network (ACORN) http://www.familymedicine.vcu.edu/research/fmresearch/acorn/	All 50 states	Paulette Lail Kashiri, MPH acorn@vcu.edu	Hospital systems	TA: A, B, C, D, F, K, N, O, P, Q Training: E, G, H, I, J, L, M, N, O, S	Subcontracts
			Independent physician associations	TA: Q Training: L	---

PBRN Name and Web site	Location(s) Where Services Could Be Provided	Primary Contact at PBRN for Potential Business Partnerships Name and Email	Experience in QI Relationships With Outside Organizations		
			Type of Outside Organization(s)*	Description of Technical Assistance (TA) and Training Services Provided**	Nature of Business Arrangement
Weitzman Institute Safety Net PBRN (WINS PBRN) http://chc1.com/WeitzmanInstitute/	All 50 states	Patti Feeney, MBA FeeneyP@chc1.com	Community health centers, other primary care practices, Visiting Nurses Association	TA: R Training: E, G, I	Contracts
			Organizations seeking patient-centered medical home certification	TA: R Training: E, G, J	Contracts
			QIOs	Training: G, M	Contracts

Table Notes:

*Types of Outside Organizations:

- i. Accountable care organizations
- ii. Coordinated care organizations
- iii. Developing PBRNs
- iv. HMOs
- v. Hospital systems
- vi. Independent physician associations
- vii. Organizations seeking meaningful use certification
- viii. Organizations seeking patient-centered medical home certification
- ix. Public health agencies (State and Federal)
- x. Quality improvement organizations (QIO)
- xi. Universities
- xii. Other

**Description of TA and Training Services Provided:

- A. Analyses and quality reporting (data analyses)
- B. Benchmarking performance to other organizations
- C. Construction and maintenance of population registries (e.g., diabetes, hypertension)
- D. Data extraction, synthesis, and validation from EHRs or administrative claims
- E. Practice facilitation and/or coaching
- F. Tested and implemented Triple-Aim (better health, improved experience, lower cost) Model for complex Medicare Advantage patients within an ACO contract
- G. Advice about rigorous study design and statistical analysis regarding intervention or program evaluation
- H. Advice to organizations on how to generate meaningful data summaries and/or reports
- I. Mentoring organizational or expertise development such as providing services for new PBRNs and self-sustaining PBRN management
- J. Training operational staff
- K. Structured clinical documentation support, clinical decision support in the EHR
- L. Programming to create standardized quality and performance reports
- M. Full scale and/or pilot evaluation and rapid cycle research
- N. Guidance/conduct on requirements for demonstrating compliance for meaningful use of EHRs
- O. Guidance/conduct on requirements for receiving patient-centered medical home designation
- P. Public health reporting
- Q. Monitoring and managing patients for receipt of recommended preventive services
- R. Other designation requirements
- S. International Conference on Harmonization Good Clinical Practice training

Appendix: Literature and Resources

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