COMMENTARY

Praxis-based Research Networks: An Emerging Paradigm for Research That is Rigorous, Relevant, and Inclusive

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Practice-based research networks (PBRNs) have developed a grounded approach to conducting practice-relevant and translational research in community practice settings. Seismic shifts in the health care landscape are shaping PBRNs that work across organizational and institutional margins to address complex problems. Praxis-based research networks combine PBRN knowledge generation with multistakeholder learning, experimentation, and application of practical knowledge. The catalytic processes in praxis-based research networks are cycles of action and reflection based on experience, observation, conceptualization, and experimentation by network members and partners. To facilitate co-learning and solution-building, these networks have a flexible architecture that allows pragmatic inclusion of stakeholders based on the demands of the problem and the needs of the network. Praxis-based research networks represent an evolving trend that combines the core values of PBRNs with new opportunities for relevance, rigor, and broad participation. (J Am Board Fam Med 2014;27:730–735.)

For more than 30 years, practice-based research networks (PBRNs) have engaged clinicians in investigating questions to improve the quality of primary care.[1] This work initially involved developing guiding principles and supporting infrastructure to provide "laboratories" for primary care research.[2] As an extension of translational research, many networks have integrated quality improvement initiatives into their work, suggesting that PBRNs have the potential to become learning communities.[3] Research opportunities for PBRNs increasingly lie beyond the boundaries of practices and health care systems. Although increasing numbers of networks are conducting research on a broader scale,[4–7] many PBRNs lack the infrastructure and expertise to do so. The purposes of this article are to present the benefits and challenges encountered when PBRNs partner directly with diverse organizations, including public health departments, schools, patient advocacy groups, and nonprofit social service organizations, and to propose an approach to building research partnerships across organizational and institutional boundaries.

Environmental Shifts and New Opportunities

Unsustainable health care spending and unacceptable population health outcomes have spawned initiatives to transform the complex US health care system,[8–12] and PBRNs are challenged to configure themselves to effectively respond to the new opportunities that result. Although there are signifi-

This article was externally peer reviewed.

Submitted 17 January 2014; revised 29 July 2014; accepted 4 August 2014.

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Funding: This publication was made possible by the Clinical and Translational Science Collaborative of Cleveland through grant no. UL1TR000439 from the National Center for Advancing Translational Sciences (NCATS) component of the National Institutes of Health (NIH) and the NIH Roadmap for Medical Research, by the Collaborative Ohio Inquiry Network Center for Primary Care Practice-Based Research and Learning from the Agency for Healthcare Research and Quality (AHRQ), through grant no. P30HS021648–02, and by the Case Comprehensive Cancer Center support grant no. P30 CA-43703–23 from the National Cancer Institute of the NIH. KCS's time is supported in part by a Clinical Research Professorship from the American Cancer Society.

Conflict of interest: none declared.

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cant benefits to a population-based approach to primary care, the predominant fee-for-service payment model in the United States has not supported the development of an integrated primary care–public health system.[13–16] To address this issue, provisions in the Patient Protection and Affordable Care Act of 2010 are enabling the US Department of Health and Human Services to fund initiatives that bridge this longstanding separation.[10,17–19] Further, approaches to the integration of primary care, public health, and communities put forth in the 1967 Folsom Report[20] are being revisited[21] for their potential to address this division by embracing the community-oriented primary care model pioneered by Kark in the 1940s.[15,20–22]

Numerous research opportunities for PBRNs are resulting from these developments. The emergence of accountable care organizations provides opportunities to partner with health care systems and communities to work toward achieving the triple aim of improving patients' experiences of health care, improving the health of populations, and reducing the per capita cost of health care.[23,24] The development of the patient-centered medical home offers abundant opportunities for PBRNs to study and improve practice organizational factors, efficiency, patient satisfaction, and population health outcomes.[25,26] The Patient Centered Outcomes Research Institute (PCORI) supports patient- and community-guided projects that enable patients to make better informed health care decisions based on high-quality evidence and offers opportunities for PBRNs to link practices, patients, and communities for patient-centered research that improves health outcomes.[27,28]

Broadening the Paradigm

"We are not students of some subject matter, but students of problems. And problems may cut right across the borders of any subject matter or discipline."

—Karl Popper

Each of the opportunities described above sits at the margins of various stakeholder groups and institutions where innovative solutions to complex problems can be developed.[29–33] These opportunities beckon PBRNs to embrace the broader mission of improving the health of communities as they "investigate questions related to community-based practice and improve the quality of primary care," as described in the definition of a PBRN by the Agency for Health care Research and Quality.[34]

To capitalize on opportunities to address "wicked" health problems that often defy linear solutions,[35,36] PBRNs face the challenge of maintaining their strengths in practice-based research methods and implementation while developing the capacity to partner and innovate across the interfaces of primary care, public health, health care systems, patient groups, community agencies, business communities, and universities.[37] Although PBRNs operate in the space that touches many of these groups, organizations, and institutions, networks may lack experience in working across the margins.

PBRNs are successfully spanning boundaries, however. PBRN-initiated partnerships to create "communities of solution"[21] using community-based participatory research methods have been described,[37,38] and a growing number of PBRNs are partnering across boundaries to address complex health issues.[6,39]

For example, the Oklahoma Physicians Resource/Research Network (OKPRN) is engaged in developing a primary care extension program to link primary care practices, public health departments, and academic centers to provide technical assistance, training, practice facilitation, and resources to address priority health needs and the social determinants of health.[40] At the county level, the extension program's health improvement organizations are collaboratives of nonprofit service organizations that connect primary care clinics to social services, public health departments, schools, tribes, hospitals, and mental health resources.[41]

In the Research Involving Outpatient Settings Network (RIOS Net), patients were recruited from diverse communities across New Mexico to participate in a study of community-level perceptions of low-risk health research, human research protection processes, and the ethical conduct of community-based research.[42] In collaboration with the PRIME Net PBRN collaborative, the network also conducted a project to identify strategies for successfully recruiting and retaining members of diverse racial/ethnic communities into PBRN research studies.[43]

In southern California, the independent nonprofit PBRN LA Net is partnering with federally qualified health centers, schools, and community organizations to reduce health disparities. The net-

work has engaged with community service organizations to conduct a series of studies aimed at reducing childhood aggression and violence through culturally appropriate, family-based interventions.[44,45]

The High Plains Research Network in Colorado is guided by a patient-comprised Community Advisory Council, which routinely guides the development and implementation of community-based participatory research projects. The PBRN has completed community-based studies to increase rates of health screening and improve self-management of chronic diseases. Effective local messages to promote screening for colon cancer and self-management of asthma and hypertension were collaboratively developed by >1000 patients and clinicians using a method, known as "boot camp translation," developed by the PBRN.[37,46,47] These highly collaborative, boundary spanning, community-oriented PBRNs are showing the way to a broad and inclusive PBRN model that may presage the future of practice-based research.

Reconceptualizing PBRNs

"Knowing is not enough; we must apply. Willing is not enough; we must do."

—Johann Wolfgang von Goethe

In light of the sweeping changes to our health care system, the corresponding research opportunities that favor community and cross-organizational partnerships, and the shifts in PBRNs toward the direct engagement of communities and diverse organizational partners, it may be useful to broadly conceptualize the PBRN as a multistakeholder learning organization that seeks to improve community health. This is being achieved by PBRNs through mutually beneficial partnerships for research, health care improvement, knowledge application, and learning. The role of community health care practices and clinicians as core PBRN stakeholders remains unchanged as networks flexibly engage and partner with relevant groups and organizations to improve the health of communities. By adaptively responding to opportunities in their environments, these networks have evolved the PBRN model from a practice-focused research organization to one that is significantly more broad and inclusive. Less clear are processes through which these networks can effectively create bridges and partner in pragmatic and creative ways to impact population health.

The term *praxis-based research network* is proposed as a name for the expanded PBRN model described here. The word *praxis* refers to pragmatically applying knowledge and theory, interpreting the meaning of experience, reframing problems in light of experience, and applying new solutions. Praxis takes the form of experiential learning, an evidence-based learning model that is widely used in research and education.[48,49] We propose that experiential learning is the central process by which PBRNs can develop cross-boundary partnerships that are productive, sustainable, and mutually rewarding.

Methods for Addressing Challenges

"Experience is the teacher of all things."

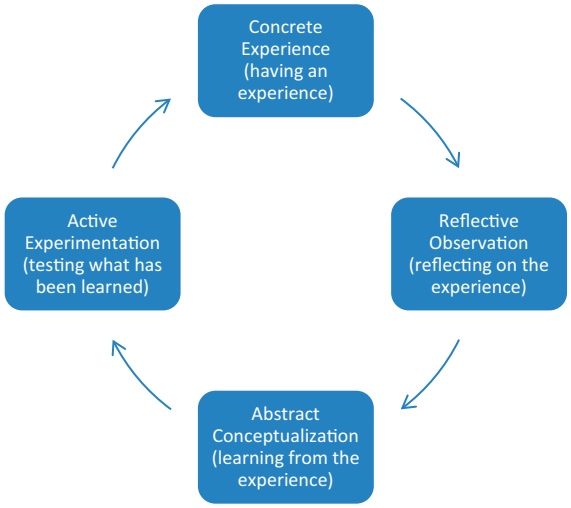
—Julius Caesar

Limitations in developing partnerships across boundaries involve 2 major challenges that can be met by praxis-based research networks: (1) developing an evolving co-learning process that bridges organizational gaps and meets both the short- and long-term needs of partnering organizations and (2) flexibly partnering to address the complex problems that cut across boundaries while maintaining integrity as a cohesive network.

Developing a co-learning process requires a flexible approach that rewards the investment of both the network and the partnering organization in the short- and long-term. Long-range objectives for PBRN partnerships include obtaining grant funding, completing research studies and quality improvement initiatives, and disseminating research findings. Grant proposals may have a relatively low probability of being funded, and dissemination activities often take place only after years of project development and data collection. Because of the amount of time until achievement and the low frequency of occurrence, the pursuit of high-stakes objectives alone may fail to sustain boundary-spanning partnerships over time. In developing partnerships, overreliance on "hitting a home run" can unnecessarily limit shared learning that can lead to practical short-term benefits and the identification of promising long-range opportunities.

To address this challenge, praxis-based research networks can use the experiential learning cycle[48] to enhance partnerships and create opportunities. As shown in Figure 1, experiential learning consists of experience, reflective observation, conceptual-

Figure 1. The experiential learning cycle. (Source: Kolb, David A., Experiential Learning: Experience as a Source of Learning and Development, 1st Ed., ©1984. Printed and electronically reproduced by permission of Pearson Education, Inc., Upper Saddle River, New Jersey)



ization, and experimentation. Using this model, partners interact around issues and activities relevant to the goals of the partnership. They observe and reflect on what has been learned during the experiential action phase, interpret the information from their distinct perspectives, and conceptualize how this can lead to short- and long-term solutions and collaborative opportunities. Partnering organizations that share their experiences benefit from the short-term solutions generated during the reflective observation and conceptualization phases, and all parties benefit by identifying research and quality improvement opportunities that increase the long-term value of the partnership.

Praxis-based research networks can meet the challenge of creating adequate breadth to address problems that cross boundaries by having selectively permeable network borders based on priorities and opportunities. Adequate organizational and conceptual space is needed to selectively include new stakeholders from diverse groups, with the understanding that the network and its collaborations will expand and contract as partnerships ebb and flow based on resources and shared opportunities. This flexible architecture allows networks to shift rapidly in response to opportunities for beneficial partnerships.

Organizational identity is particularly relevant to developing the flexibility to partner effectively. To maintain their organizational identity in partnerships, evolving PBRNs seek not only to maintain systems, processes, and strategies but also to develop their organization's core values over time.[50] In the context of environmental changes, PBRNs may in fact find that partnerships enable their organization's core values to be sustained[51] as the network continues to evolve. Finally, the choice of partnering organizations can be guided by the potential value of the outcomes the partners can achieve together. Pragmatic inclusiveness when partnering across the margins opens doors to countless possibilities for networks.

PBRNs are likely to benefit from an examination of their capacities for partnering. As smaller organizations, PBRNs often have a predominant informal organizational structure in which the pragmatics of getting the work done supersede the need for hierarchy, whereas larger organizations and governmental agencies may adhere to a more formal structure involving chains of command and procedural control. This mismatch can create problems in partnering if assumptions about collaborations are not made explicit.[50] Additional factors shown to affect the viability of partnerships include mutual trust, flexibility in dealing with one another, understanding organizational cultures, sharing power, having a shared mission, friendship, open communication and information sharing, and mutual commitment to the project.[52] PBRNs can weigh these factors by engaging in a thorough self-evaluation and an assessment of the prospective partner.

Accessing Resources

PBRNs may require training and assistance in spanning institutional boundaries and engaging community groups. Many institutional recipients of National Institutes of Health–funded Clinical and Translational Science Awards support shared resources for building community research partnerships. These shared resources may offer training in community-based research methods and provide linkages to community organizations. The Clinical and Translational Science Institute at the University of California, San Francisco, offers a series of online training manuals in community-engagedresearch(http://accelerate.ucsf.edu/research/community-manuals). Similarly, the 37 Centers for Disease Control and Prevention–funded Pre-

vention Research Centers across the United States have expertise in community-engaged research methods and may offer training and technical assistance. In addition, the PBRN Resource Center offers learning groups, webinars, and tool kits on a variety of important topics relevant to PBRNs (http://pbrn.ahrq.gov/resource-center). Finally, networks often learn best from one another. PBRNs that have excelled at community-engaged research may serve as exemplars in collaborating across boundaries.

Conclusion

Even as changes within the US health care system and the nation's research funding infrastructure create challenges for PBRNs, participatory collaborations are creating new opportunities. In response to changing environments, PBRNs are dynamically evolving to meet the needs of communities by partnering to generate new knowledge that can benefit community and population health. The praxis-based research network model facilitates adaptive partnering and provides a learning mechanism that enables the formation of new collaborations while remaining true to the core values of PBRNs.

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