Embracing the PBRN Model to Improve the Medication Use Process

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Contents

I. Abstract

Purpose: The goal of the conference, *Embracing the PBRN Model to Improve Medication Use*, was to provide a forum that would support breakthrough thinking and engage participants in focused discussions about the implications of using the PBRN model to improve medication use.
Scope: An interdisciplinary group of 80 leaders from dentistry, medicine, and pharmacy from 28 states and Puerto Rico convened in Charlotte, North Carolina, on February 22-24, 2007.
Methods: The conference planning group used the pre-work responses to assign discussions groups that were diverse and design group activities that could achieve breakthrough thinking and true progress during the working conference. Plenary sessions preceded three rounds of discussion led by trained facilitators. An assembly of participants, speakers, and planners produced a set of key strategies for implementing a research program on improving medication use based on the PBRN model.
Results: The conference resulted in a consensus that practice-based research networks were an appropriate model for studies that would improve medication use. Participants at the conference generated four key strategies, along with goals, actions, and tactics, for establishing networks for this purpose.
Key Words: practice-based research; research networks; PBRN; pharmacy; medication error; medication safety

II. Purpose of Conference

The overarching **goal** of the conference, *Embracing the PBRN Model to Improve Medication Use*, was to provide a forum that would support breakthrough thinking and engage participants in focused, interactive discussions about the implications of using the PBRN model to improve medication use.

Specific **objectives** of the conference were to:

- identify knowledge gaps that might be addressed by research networks in pharmacy settings.
- describe the education and training of people who will be effective collaborators in PBRNs.
- specify the infrastructure requirements necessary for PBRNs to create and sustain progress in research and education.

Baseline Assumptions

We used the following definition of a PBRN as a basis for discussion at the conference: A PBRN is a group with at least 15 practices and/or 15 clinicians devoted principally to the care of patients, affiliated with each other (and often with an academic or professional organization) to investigate questions related to practice.

Discussions at the conference about the role of PBRNs for the Study of Medication Use were based on the assumptions that

- research needed to improve medication use would involve pharmacists and pharmacy researchers.
- research should be conducted in settings where medications are prescribed, prepared, dispensed, or administered.

III. Scope

Background and statement of the problem

The Institute of Medicine (IOM) has identified practice-based research networks (PBRNs) as "the most promising infrastructure development to support better science" for identifying strategies and tools to increase quality in the healthcare system. The Agency for Healthcare Research and Quality (AHRQ) in turn supported the development of primary care practice-based research networks (PBRNs) and funded studies designed to translate scientific evidence into the routine practice of medicine.

In 2006, the IOM released a report, *Preventing Medication Errors*, which confirmed that drug-related morbidity had not diminished since the magnitude of this problem was quantified in 2000 an earlier report, *To Err is Human*. The IOM set a national research agenda in *Preventing Medication Errors* based on estimates of the incidence and cost of such errors and evidence on the efficacy of various prevention strategies.

A national, interdisciplinary conference was proposed to consider the PBRN model as a structure for implementing a research agenda that would prevent errors and improve the overall use of medication.

IV. Methods

Conference Participants
An interdisciplinary group of 80 leaders from dentistry, medicine, and pharmacy from 28 states and Puerto Rico convened in Charlotte, North Carolina, on February 22-24, 2007, for the conference. Collectively, there were representatives from 30 schools and colleges of pharmacy and two medical schools; seven foundations and associations, NIH, and AHRQ; and a variety of chain and independent pharmacies, health systems, and managed care organizations.

Participants reported variable levels of experience in practice-based research, both within networks and without. Nearly half were currently engaged in practice research of some kind. Twenty-two percent conducted research within their practice, and 18% reported being part of a small network. Most reported networks of fewer than 10 sites, although 13% were involved in networks of 15 or more sites. Thirty-nine percent of respondents were not engaged in practice research.

Pre-Conference Activities and Planning
Prior to arriving at the conference, participants received background information about PBRNs and contributed to conference plans through an internet-based survey. One month prior to the conference, the participants were asked to complete the background readings and a 10-item survey to share their pre-conference goals and expectations, perceived barriers, and potential strategies for improving the medication use process. There were 54 responses to the survey.

The conference planning group used the pre-work responses to assign discussions groups that were diverse and to design group activities that could achieve breakthrough thinking and true progress during the working conference. Pre-work responses provided insight into the perceived challenges to conference participants and potential strategies that could provide long-term solutions. The information also provided a snapshot of the experience and expectations of conference participants. Details of pre-conference responses may be found in Appendix B.

The conference, *Embracing the PBRN Model to Improve Medication Use*, convened at the Embassy Suites Hotel in Charlotte, NC, on February 22-24, 2007.

Conference Agenda
The conference agenda had three components: plenary sessions with background information and charge to the participants; breakout sessions engaged in creative thinking exercises led by trained facilitators; and a participant assembly for reporting, synthesis, and strategic planning.

The **Plenary Sessions** began on Thursday evening, February 22, with an interdisciplinary panel discussion. John Hickner, MD, lead consultant for AHRQ's PBRN Resource Center, gave an introduction to the practice-based research network model, AHRQ-sponsored activities, and resources. Dr. Hickner shared his experience as a network founder and director, and a panel of speakers added their experiences and perspectives on practice-based research. Panel members included a clinical pharmacist faculty member who is conducting practice research (Kelly Goode), an NIH project officer with oversight of dental research networks (Donald DeNucci), and the vice president of a regional pharmacy chain (Rebecca Chater).

The plenary sessions continued on Friday morning, February 23. Lucinda Maine, PhD, Executive Vice President of the American Association of Colleges of Pharmacy, presented the participants with their charge, describing the goals and expectations of the conference.

The keynote address*, 1.5 Million Reasons to Improve Medication Use,* was given by J. Lyle Bootman, PhD, Dean of The University of Arizona College of Pharmacy, Executive Director of the Center for Health Outcomes and PharmacoEconomic Research (HOPE Research Center), and co-chair of the IOM Committee on *Preventing Medication Errors (2006).* Dr. Bootman highlighted critical concerns in the medication use process and called for innovative approaches to address them, offering recommendations from the IOM report for research in practice to improve quality, safety, effectiveness, and efficiency of pharmacotherapy.

James W. Mold, MD, Professor and Director of the Research Division Department of Family and Preventive Medicine and Network Director of the Oklahoma Physicians Resource/Research Network, described the structure and interdisciplinary work products of existing PBRNs, drawing a distinction between research *on* practice and research *in* practice.

Grace Kuo, PharmD, MPH, Assistant Professor of Family and Community Medicine and Program Director of the Southern Primary-care Urban Research Network, provided examples of PBRN projects and resources assembled in support of them.

Lucy Savitz, PhD, MBA, Senior Associate at Abt Associates, Inc., offered her insights about the respective needs of researchers and practitioners who engage in collaborative research. She emphasized the need for balance between the demands of research and the care of patients as well as the balance between the rigor of research and applicability to routine practice.

Breakout sessions started after lunch following an introduction from Jann Skelton, RPh, MBA, Silver Pennies Consulting, and Patti Gasdek Manolakis, PharmD, PMM Consulting. They outlined the structure and process that would be used by the trained facilitators to stimulate creative thinking and generate innovative approaches.

Participants were divided to ensure diversity among each of four groups and engaged in activities to generate and prioritize strategies to improve medication use through practice-based research. A representative of each group summarized the outcomes of their small-group work. An expert panel presenters provided brief reaction to each group's outcomes, with opportunity for audience Q&A. The assembly was dismissed for an evening of fellowship and socializing.

Participants were given the chance to join a roundtable discussion over breakfast on Saturday morning, February 24, at which some recurring challenges for PBRN research were considered.

Small-group discussions lead by the facilitators resumed after the breakfast session. The facilitators had worked late the evening before and during the breakfast hour to collate the ideas from the individual sessions the previous afternoon. Whereas the first breakout sessions set the foundation for improving medication use, the second and third rounds aimed to generate action plans for organizing practice-based research. Although assigned to groups the previous day, the participants selected a groups for the follow-up sessions based upon their preferences and practice or research experience. After each small-group session, participants convened to hear reports from the groups, concluding with a question-and-answer session among participants.

The Conference **summary session** had two parts. Marilyn Speedie, PhD, AACP President and Dean of the University of Minnesota College of Pharmacy, asked the participants for their input regarding how AACP could best meet the education and training needs of researchers,

practitioner collaborators, and future pharmacists as well as support the infrastructure needs of PBRN. Earlene Lipowski, PhD, Donald C. Brodie AACP Academic Scholar in Residence and Conference Chair, closed the meeting by reflecting on the accomplishments and outlining plans for the dissemination of conference products and future AACP programming.

Meeting Evaluation Methods
One week after the conference, the participants received an internet-based survey with 21 items for rating the pre-conference activities; the conference format, methods, and materials; and the program structure. Open-ended questions were used to solicit plans for PBRN research, the activities that might best support those plans, and other comments.

V. Results

Key Strategies
The first round of discussion groups identified actions needed to form a PBRN for the purpose of improving medication use. The facilitators worked with diagraphs and affinity diagrams generated by the groups to settle on a list of four key questions that were pursued by the second and third rounds of discussion. Each question was assigned to a small group that formulated goals, strategies, activities, and tactics in response the question.

The first key was to establish relationships with key stakeholders as a way to further PBRN development, which involves establishing relationships with key stakeholders and together creating a working definition of the desired PBRN. The second key was to develop a rigorous and robust PBRN research program of study with the aim of improving patient care. The drivers for this component were to identify funding sources, develop a research focus, and create an appropriate PBRN infrastructure to carry out the work. A third key was to empower and educate pharmacists for participation in practice-based research that would require forming a resource center for the PBRN, acquiring tools that facilitate collaboration, identifying and sharing best practices, as well as conducting the education and training needed to support research. A fourth key was to engage patients in practice-based research by building personal relationships with them and removing barriers to their participation in research.

Tables displayed in Appendix A show the key strategies with respective drivers, goals, actions and tactics given with increasing levels of specificity.

In the survey conducted before the conference, participants identified perceived barriers and precursors to adopting the PBRN model for research on medication use. Each was addressed by strategies and action plans within the conference work product.

Meeting Evaluations
The participant evaluations of the conference were overwhelmingly positive. Every aspect of the conference was rated positively by at least 70% of the participants. Ninety-five percent or more of the participants agreed or strongly agreed that the PBRN panel on Thursday evening and the opening plenary speakers on Friday increased their knowledge about PBRNs, sentiments that were reinforced in the open-ended comments. The same proportion reported that the background readings prepared them, they felt empowered to actively participate, they had opportunities to network with colleagues and the conference met their expectations.

Participants commented that the pre-conference assignment was a good strategy and provided them with good materials, although two participants noted problems in retrieving the electronic documents.

One week after the close of the conference, 54 participants reported taking a variety action steps toward initiating a practice-based research network. Nine had sought administrative endorsement approval for a PBRN initiative, eight had set up a meeting to consider the organizational structure, 14 had begun assembling a network infrastructure, 14 were recruiting network members and collaborators, and one was developing a practice research program for student pharmacists. Four persons said they either joined an existing PBRN or QI program or sought an affiliation, whereas eight more were engaged in educating their faculty and practitioner colleagues about PBRNs. Five individuals answered that they were investigating the PBRN concept further or considering their options for engaging in practice-based research.

When asked what type of supplemental programming on PBRNs might be valuable, 25 participants asked for more programming in a variety of formats, including progress reports and networking sessions, a follow-up conference, more educational sessions, roundtable discussions, teleconferences, poster sessions, and a resource list of experts and consultants. Other suggestions stressed the importance of maintaining collaborations with other disciplines and other PBRNs as well as the need for advocacy and promotion of PBRNs among professional associations and journal editors. When asked to designate two priorities for AACP, the answers were (1) to provide opportunities for communication and dialog about PBRNs; (2) to advocate to increase awareness and support for PBRNs; (3) to legitimize the research efforts of PBRNs through association publications and programs; (4) to offer funding or funding announcements; and (5) to develop a list of available consultants.

One participant summed up her impressions in a particularly poignant fashion: “You saved my life,” she said and then went on to explain that she had been feeling discouraged about the progress of her research. The conference introduced new ideas and a new approach; it brought a new mix of people together from multiple disciplines and the entire range of healthcare delivery settings. Overall, she found it was an invigorating experience. In addition, the conference produced tangible work products in the form of action plans that participants could implement immediately.

Lessons Learned

The participant evaluations were quite positive, as evidenced by the response to the post-conference survey. The small-group sessions were very productive but intense. Some participants became fatigued. Given another opportunity, the planning group might invest a little more time explaining the creativity exercises to impart a better understanding of the process and clear expectations.

A few participants left the conference without a good grasp of the final work product. This occurred in part because poor weather and travel conditions forced some persons to leave unexpectedly early. For others, there simply was insufficient time to synthesize the amount of ideas and information that was being generated. For this reason, it would be advisable to place a higher priority on quickly providing a summary document to participants. This would require additional personnel to transcribe and rapidly collate the information and incur the risk of premature closure on the part of the conference implementation group.

Diversity was a key to the success of the conference, and the implementation team likely would endeavor to ensure/increase diversity at any future conferences. Practitioners would be one

group to recruit in greater number. The PBRN model represented a new concept, and practitioners particularly would need additional information and encouragement to join a network.

The participants were engaged by the pre-conference assignments, and this made an important contribution to the conference success. The pre-conference materials not only provided a common core of knowledge but also, through the pre-conference survey, allowed the implementation team to get a sense of participants' priorities, expectations, and experiences. The assignments of persons and activities for the first discussion sessions were based on information gathered from the survey.

Outgrowths of the Conference
Within 6 months after the conference, PBRN development activities were reported by conference participants from University of Colorado, Iowa, Connecticut, Wisconsin, and Texas Tech. Two institutions already affiliated with the PBRN in upstate New York, University at Buffalo and Albany College of Pharmacy, continued their efforts. The Virginia Commonwealth Pharmacy Education and Research Network officially registered as a PBRN with AHRQ.

VI. List of Publications and Products

Peer-Reviewed Publications
Dickerson LM, Kraus C, Kuo GM, et al. Formation of a primary care pharmacist practice-based research network. *Am J Health Syst Pharm*. 2007;64:2044-2049.

Lipowski, EE. Pharmacy practice-based research networks: why, what, who and how. *J Am Pharm Assoc* 2008; 48:142-152.

Kuo, G, Steinbauer JR, Spann SJ. Conducting medication safety research projects in a primary care physician practice-based research network. *J Am Pharm Assoc*. 2008; 48: 163-170.

Goode JVR, Mott DA, Chater R. Collaborations to facilitate success of community pharmacy practice-based research networks. *J Am Pharm Assoc*. 2008; 48:153-162.

Scientific and Technical Reports
Blouin RA, Bergstrom RF, Ellingrod VL, et al. The Report of the AACP Educating Clinical Scientists Task Force I. American Association of Colleges of Pharmacy. 2007 Jul.

Official Policy on Practice based research networks. 2008 Actions of the American Pharmacists Association House of Delegates. 2008 Mar.
http://www.pharmacist.com/Content/NavigationMenu3/AboutAPha/HouseofDelegates/APhA_House_of_Delega.htm

Carter BL, Blouin RA, Chewning BA, et al. Report of the AACP Educating Clinical Scientist Task Force II. American Association of Colleges of Pharmacy. 2008 Jul.

Electronic Resources
Bibliography for Practice-Based Research on Medication Use. Lipowski E. Web-based tool. http://www.aacp.org/Docs/MainNavigation/ForFaculty/8122_PBRNbibliographycategories.pdf

Presentations from the Conference, *Embracing the PBRN Model to Improve the Medication Use Process.* Streaming video and written transcripts. Hickner J. Introduction and overview of PBRNs; Hickner J, DeNiccui D, Goode K, Chater R. Interdisciplinary Panel Discussion on PBRNs; Bootman, JL. 1.5 million reasons to improve medication use; Mold JW. Experience with PBRNs: where we've been and where we're going; Kuo G. How a network is born and grows to maturity; Savitz L. Research to meet the needs of academia and practice. http://www.aacp.org/site/page.asp?TRACKID=&VID=1&CID=1400&DID=8104

News and Editorials

Sheffer J. PBRNs: a golden opportunity for pharmacy. *Pharmacy Today* 2008 (March): 52,54.

Ried LD, Bennett M, Smith GH. Practice-based research networks: keeping the highway running through the pharmacy community (editorial). *J Am Pharm Assoc* 2008; 48:138, 141.

Ried LD, Lipowski EE. Practice-based research networks. *J Am Pharm Assoc* 2008: 48: in press.

Invited Presentations

Kuo G. Colleagues in Research, Annual Meeting of the American Pharmacists Association, Atlanta, GA: 17 Mar 2007.

Lipowski E. Research ON Practice vs. Research IN Practice, Southern Pharmacy Administration Conference, Little Rock, AR: 16 Jun 2007.

Clancy C, Johnson J, Doucette W. Translating Research into Policy and Practice to Enhance Safety and Quality. Annual Meeting of the American Association of Colleges of Pharmacy, Orlando, FL: 17 Jul 2007.

Angaran D. Practice Based Research Networks. Annual Meeting of the Federally Qualified Health Centers in Florida. Coral Gables, FL: 27 Jul 1007.

Chater R, Goode JV. Practice-based research networks. National Association of Chain Drug Stores Pharmacy & Technology Confrence. Boston, MA: 12 Aug 2007.

Lipowski E, Johnson P, Angaran D, McQuone M. Practice Based Research Networks. Annual Meeting of the Florida Society of Health-System Pharmacists, Orlando, FL: 16 Aug 2008.

Lipowski EE. Practice-based Research Networks: Research IN Practice *rather than* Research ON Practice. University of Florida College of Pharmacy Faculty Preceptors Annual Meeting. Orlando, FL: 21 Sep 2007.

Lipowski EE, Rickles NM, Raebel MA, Zgarrick DP. Colleagues in Research: Power in Numbers or How to Build Interdisciplinary Relationships to Advance Pharmacy Practice. Annual Meeting of the American Pharmacists Association, San Diego, CA: 15 Mar 2008

Lipowski EE. Translating evidence into practice: opportunities through practice-based research. American Pharmacists Association Self-Care Institute. Chicago, IL: 21 Jun 2008.

Appendix A

Conference Work Product

Key Question – How do you establish relationships with key stakeholders to further PBRN development?

Strategy 1 – Establish relationships with key stakeholders

Driver 1 – Identify Stakeholders

Goals	*Actions*
Cast a wide net to identify interest among prospective researchers/practitioners	□ Approach pharmacy organizations
	□ Approach pharmacy preceptors
	□ Approach school alumni
Identify consumer interests	□ Conduct brown bag sessions
	□ Meet with civic organizations
	□ Meet with advocacy groups
	□ Meet with public health groups
	□ Meet with government agencies
Identify resources	□ Research funding agencies
	□ Discuss with deans, department chairs
	□ Meet with government officials
	□ Forge partnerships (interdisciplinary, individuals)
Conduct brown bag sessions	□ Tie in with existing brown bag sessions
	□ Deliver well-created messages relevant to their needs
Partner with civic organizations	□ Get an invitation to speak
	□ Deliver well-crafted message
	□ High profile speaker
Partner with advocacy groups	□ Get an invitation to speak
	□ Deliver well-crafted message
	□ High profile speaker
Research public health/government sources	□ Know their agenda
	□ Understand which agency to contact
Approach pharmacy organizations and foundations	□ Conduct presentations at meetings
	□ Meet with leaders
	□ Communicate via e-mail; website; regular mail
Engage preceptors	□ Communicate via e-mail
	□ Support peer recruitment
Engage alumni	□ Communicate via e-mail
	□ Support peer recruitment
	□ Publish in newsletter

Driver 2 – Define the concept of the PBRN	
Goals	*Actions*
Develop a service description	Conduct a literature evaluation
	Gather opinions
	Solicit feedback
Design an organizational structure	Appoint an Advisory Board
	Develop governance and procedures
	Determine staffing and management
	Access legal consultations
Describe the purpose, goals, and scope	Define endpoints
	Identify measurement instruments
	Determine frequency of measurement

Key Question – How do you develop a rigorous and robust PBRN research program that studies and improves patient care?

Strategy 2 – Develop a rigorous and robust research program that studies and improves patient care

Driver 1 – Identify funding sources	
Goals	*Actions*
Identify seed funding for development	Leverage institutional resources
	Rely on donors/membership fees
	Inquire about local foundation or organizations
	Apply to AHRQ, HRSA
Identify funding for ongoing infrastructure support	Leverage institutional resources
	Draw on donors/membership fees
	Approach local foundations/organizations
	Apply to AHRQ, HRSA
	Initiate large-scale studies (NIH)
Identify funding for pilot studies	Leverage institutional resources
	Apply to NIH/AHRQ for R03 awards
	Seek support from PhRMA companies
	Ask foundations
	Seek state funds (tobacco)
	Approach professional organizations
	Seek program pilot funding (NIH)
	Affiliate with an NIH CTSA
Identify funding for large-scale studies	Apply to NIH/AHRQ for R01 awards
	Seek a center grant
	Ask foundations
	Research CDC, CMS, HRSA project grants

Driver 2 – Determine topic focus	
Goals	*Actions*
Perform needs assessment and gap analysis	Perform literature review
	Identify and consult thought leaders
	Survey patients and providers
	Mine secondary data
Assess feasibility	Assess unique population characteristics
	Consider duration of study/create timelines
	Gauge provider and researcher availability
	Plan and budget resources
Consider agency funding priorities	Conduct grant search (NIH; foundations; national, state, and local, organizations)
	Make personal contact with key funders
	Seek collaborations/consulting with colleagues

Driver 3 – Develop PBRN Structure	
Goals	*Actions*
Identify leaders	Find existing experts
	Collaborate with national organizations
	Identify a home for PBRN activities
Identify stakeholders and partners	Network with other healthcare professionals
	Collaborate with other networks
	Recruit pharmacy practitioners
	Collaborate with state/national organizations
	Develop relationship with relevant IRB
Create vision statement, mission, and bylaws	Conduct a retreat for leaders and stakeholders
	Develop a catchy acronym
	Create a marketing plan
	Define scope of PBRN
Secure resources	Locate space, technology, personnel
	Seek out funding groups
Establish communication procedures	Establish access to an IT group
	Assess communication resources of network participants
	Determine data flow
	Communicate responsibilities/expectations
	Ensure secure communication and storage of data

Key Question – How do you empower and educate pharmacists to participate in practice based research?

Strategy 3 – Empower and educate pharmacists to participate

Driver 1 – Develop a resource center for PBRN	
Goals	*Actions*
Develop an internet-based tool kit	Include protocols
	Solicit and post documentation tools
	Develop and distribute data collection tools
	Provide a source of drug information
Provide access to clinical guidelines	
Research potential funding avenues	Provide listings of potential funding sources
	Send funding leads via blast e-mails
Develop policies and procedures for PBRNs	Post job description templates
	Develop and post model agreements for authorship
	Develop and post model agreements for financial agreements
	Research responses to IRB issues

Driver 2 – Develop tools to facilitate networking	
Goals	*Actions*
Develop a listserv	
Host an annual conference	
Develop a monitoring system	Implement a mini-sabbatical
Institute a visiting practitioner/scientist program	

Driver 3 – Identify and disseminate practitioners best practice models	
Goals	*Actions*
Publish examples of best practices	Work with AJPE to include a section partner with JAPhA's pharmacy media
Develop a list of experts as a resource	

Driver 4 – Develop education and training	
Goals	*Actions*
Develop human subject training	
Develop training on disease management/clinical skills	
Develop training on research methods	
Develop training on grant writing	
Involve students in training programs	
Develop advocacy information to support funding requests	

Key Question – How do you engage patients in practice-based research?		
Strategy 4 – Engage patients in practice based research		
Driver 1 – Build relationships with patients		
Goals	*Actions*	*Tactics*
Develop and reinforce one-on-one patient-pharmacist relationships Nurture the relationship of patient with practice site	Create stability	Demonstrate consistent and high-quality care
		Have standardized training and expectations for pharmacists
	Build trust	Demonstrate respect and reliability (e.g., know names)
		Be responsive
	Foster communications	Communicate frequently and routinely
		Demonstrate empathy
		Provide a conducive environment
Create public awareness of the value of the profession	Develop a consistent message	
	Engage in marketing to communicate the message	Advertise
		Influence one person at a time through personal selling
		Conduct PR (e.g., health fairs)
		Use direct marketing (e.g., mail, bag stuffers)
		Have a crisis management plan for negative PR
Driver 2 – Remove barriers to participation in research		
Goals	*Actions*	*Tactics*
Facilitate patient enrollment	Use technology to simplify the process	Facilitate scheduling
		Facilitate patient eligibility/selection
	Train/educate staff	Develop and implement procedures
		Explain purpose/benefits of research
		Develop inclusion criteria
		Explain global knowledge of research project structure
	Involve stakeholders	Identify potential patients
		Advertise the study
		Enroll on site of employer
Integrate research into the pharmacy experience	Involve practice site in research design	Ensure practice drives research instead of research driving practice
	Use technology	Educate patients/staff on use of technology
		Make technology part of normal practice
Reinforce and ensure safety and minimize risk	Inform patients of IRB oversight	
	Inform patients of emergency plans/ monitoring	
	Educate patients about <u>possible</u> risks	

Appendix B

Pre-Conference Participant Activities and Perceptions

In early February, the participants were asked to complete the background readings and a 10-item survey to share their pre-conference goals and expectations, perceived barriers, and potential strategies. There were 54 responses to the survey.

Expectations. Participants were asked to share three expectations they had for the PBRN conference. Most commonly the participants expected to:

- Acquire knowledge about developing and participating in PBRNs and to learn how to overcome perceived barriers.
- Identify funding opportunities
- Build relationships with other researchers and practitioners for future collaborations.

Barriers. Reported barriers to conducting practice-based research through networks included:

- Time—constraints within community pharmacies to conduct research and to establish and maintain practice-based research networks.
- Funding—a perceived lack of resources and limited access to available resources.
- Training—traditionally, pharmacists have not been educated or trained to participate in practice-based research. As a result, pharmacists must receive education and training to engage in research; likewise, researchers and organizers must understand the unique methods, administration, and related processes required to conduct research in these settings.
- Lack of infrastructure or a critical mass of committed academicians and practitioners–resulting in recruitment, retention, and operational challenges.

Strategies. Four common themes emerged among strategies suggested for using PBRNs to improve the medication use process:

- Define a research agenda and national standards.
- Collaborate with physicians and others in conducting practice-based research.
- Focus on patient safety issues and patient outcomes by identifying high-risk patients, including the uninsured, Medicare beneficiaries, those with certain chronic diseases, and those limited health literacy.
- Improve communication and electronic sharing of information among pharmacies, prescribers, and other points of care through e-prescribing, real-time electronic communication.

Research Experience/Activities. Participants had variable levels of experience in practice-based research, within networks and independently.

- Nearly half of all conference participants who submitted pre-work were currently engaged in practice research of some kind.
- Twenty-two percent conducted research within their practice, and 18% reported being part of a small network.
- Most reported networks of fewer than than 10 sites, although 13% were involved in networks of 15 or more sites.
- Thirty-nine percent of respondents were not engaged in practice research.

Conference Evaluation

Pre-Conference Activities
Participants commented that the pre-conference assignment was a good strategy and provided them with good materials, although two participants noted problems in retrieving the electronic documents

Conference Expectations, Methods, Materials and Program Structure
Any specific comments you wish to share about any of the sessions, speakers, and/or facilitators?

1. Excellent conference (N=6)
   Positive: Exceptionally well organized; informative and challenging
   Negative: Nothing new; same old stuff; not consistent with theme
2. Speakers good-excellent (N=9) and interdisciplinary (N=2)
3. Roundtable discussions good (N=2) – need more
4. Breakout sessions (N=7)
   Negative: Needed more explanation; not enough expertise in groups; prefer assigned rather than self-selected groups; too much time consumed for benefit derived
   Positive: Not enough time here; active, stimulating; good facilitators although variable

Looking Ahead
One week post-conference, participants reported taking 64 action steps.
Please outline your personal "first step(s)" you will take following the PBRN Conference.

1. Get administrative approval or buy-in (N=9)
2. Set up an organizational meeting (N=8)
3. Create PBRN infrastructure (N=14)
   Including select a leader; design structure and plans; determine resource and funding needs; seek funds; operationalize existing plans; set research agenda; revise existing research plans
4. Recruit network members and collaborators (N=14)
   Based on geographic area, practice specialty, professional associations, academic settings, and create a network of networks
5. Initiate involvement at QI interface
6. Seek a mentoring relationship with existing PBRN
7. Join an existing PBRN
8. Apply findings of practice based research to practice
9. Report back to colleagues (N=7)
10. Develop PBRN education program for pharmacists
11. Develop practice research program for student pharmacists
12. Investigate the PBRN concept further to learn more and evaluate options

What types of supplemental programming on PBRNs would be valuable to you and/or your organization?

1. Programming formats and content (25 comments), including poster sessions; educational programs on grant writing, implementation strategies, funding sources and research methods; roundtable discussions; progress reports; networking session and holding a follow-up conference or teleconferences
2. Supporting collaborations (3 comments)
   Among PBRNs and other disciplines and AHRQ and other funding agencies
3. Advocacy and promotion (2 comments)

with other pharmacy associations and with journal editors, supplying a list of qualified reviewers

What do you consider to be the top 2 priorities for AACP to pursue in support of participants' PBRN efforts over the coming year? Please add any additional thoughts or comments you wish to share. (57 total comments)

1. Provide ongoing opportunities for communication and dialog (N=23)
   Specific suggestions included a website, a learning community or listserv, and special programming at AACP meetings.
2. Advocacy – increase awareness and support for PBRNs (N=18)
   Specifically mentioning federal agencies, national pharmacy associations, existing PBRNs, pharmacists, and pharmacy management
3. Legitimize research efforts of PBRNs (N=10)
   by cultivating publications and fostering institutional collaborations
4. Identifying funding sources (N=4)
5. Providing a list of consultants (N=2)

Table 2. Participant Evaluations One Week Following the Conference (N=54)

A. *Pre-Conference Activities*	**Agree/Strongly Agree**	**Neutral**	**Disagree/Strongly Disagree**	**Missing**
1. The conference application process was fair.	**43**	**10**	**1**	
2. The background readings helped prepare me for the conference.	**51**	**2**	**1**	
3. The pre-work activities were helpful in preparing me to participate onsite.	**43**	**10**	**1**	
4. Conference organizers were responsive to questions and problems I encountered during the application, registration, pre-work process.	**48**	**6**	**0**	
B. *Conference Expectations, Methods, and Materials*				
6. The conference met my expectations.	**51**	**0**	**3**	
7. Conference objectives were clearly stated.	**47**	**3**	**4**	
8. Collectively, the plenary session speakers increased my knowledge of PBRNs and related issues.	**53**	**0**	**1**	
9. The breakout group exercises were explained clearly.	**47**	**3**	**4**	
10. I was empowered to actively participate in the activities.	**51**	**3**	**0**	
11. The small-group exercises resulted in the development of action plans.	**38**	**8**	**8**	**2**
12. As a result of participating in the 2.5-day conference, I feel more prepared to engage in practice-based research through networks than I was before the conference.	**49**	**3**	**2**	
13. The conference handout materials were useful.	**51**	**3**	**0**	
C. *Program Structure*	**Valuable/Extremely Valuable**	**Neutral**	**Little/No Value**	**Missing**
15. Thursday Pre-Conference PBRN 101 and Interdisciplinary Panel (Speakers: Hickner, DeNucci, Goode, Chater)	**50**	**1**	**1**	**2**
16. Friday Opening Session (Speakers: Bootman, Mold, Kuo, Savitz)	**51**	**2**	**1**	
17. Friday Breakout Session I w/Activities	**42**	**6**	**6**	
18. Friday Group Reports Session With Reactor Panel	**38**	**6**	**10**	
19. Saturday Breakfast Roundtable Discussions (Leaders: S. Speedy, Isetts, Mold, Carter, Reeder, Kuo, DeNucci)	**45**	**4**	**2**	**3**
20. Breakout Session II w/Activities	**39**	**10**	**5**	
21. Saturday Group Reports	**34**	**9**	**9**	**2**
22. Saturday Closing Presentations (Speakers: M. Speedie, Miller, Lipowski)	**37**	**9**	**1**	**7**
23. Opportunities throughout the conference to network with colleagues about PBRNs	**51**	**1**	**1**	**1**