Practice-Based Research Networks
Participatory Laboratories for Discovery, Dissemination and Implementation

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The Interacting Elements of Integrating Science, Policy and Practice*

- Assess Relevant Knowledge/Evidence
- Consider Multi-level Context
- Identify and Specify Problem
- Policy, Program & Practice Implementation
- Evaluation
- Refinement

Sustainable Ongoing Learning System

- Evidence from community or population
- Fidelity/Adaptation
- Types of Evidence
- Rapid Learning Systems

Policy, Program & Practice Implementation

- CER
- Complex Intrv.
- Evidence Reviews
- Evidence from Etiologic Research
- Interventions Evidence from Efficacy Studies, and Use of Theory to Fill Gaps
- Pragmatic Trials
- Designing for Diss.
- Cost Effect.
- Evidence from Etiologic Research
- Participatory Approaches
- Simulation Modeling
- Practice-based Research

Figure adapted with permission from Ward V, House A, Hamer S. Developing a framework for transferring knowledge into action: a thematic analysis of the literature. J Health Serv Res Policy 2009 14:156—164
Overview

- PBRNs as D & I Laboratories
- PBRN research approach
- D & I research examples from PBRNs
- How to work with a PBRN
- Take home lessons
Fig. Results of a reanalysis of the monthly prevalence of illness in the community and the roles of various sources of health care. (Green LA et al., *N Engl J Med* 2001, 344:2021-2024)
PBRNs - AHRQ Definition

• A group of ambulatory practices
• devoted principally to the primary care of patients
• affiliated in their mission to
  – investigate questions related to community-based practice
  – improve the quality of primary care
• Having a sense of
  – ongoing commitment to network activities
  – an organizational structure that transcends a single research project.
• often link practicing clinicians with investigators
PBRN Approach

• Engage clinicians on the frontlines of patient care
  – Develop or frame research questions
  – Gather data
  – Interpret findings
  – Implement findings

• Top down and bottom up research

• Translation of research into practice and practice into research, on the problems that most people have most of the time.

• Produce findings that are generalizable, transportable & readily translated into practice


Universe of Primary Care PBRNs

• More than 133 active in US
  – Diversity in size, location and focus
  – Estimated access to >10% of patients

• Federations of PBRNs*

• AHRQ-funded PBRN Resource Center**

• Funding by AHRQ, RWJF, NIH, CTSA, CCSGs


PBRNs Blur the Distinction Between

- Research and quality improvement*
- Researcher and participant**
- Practice & community**


D & I Studies in PBRNs
Women with a spontaneous abortion rarely need a D&C.

- Ambulatory Sentinel Practice Network (ASPN)
Antibiotics are not needed for all children with otitis media

- ASPN & International Collaborative Network


There is no need for regular b.p. checks for normotensive adults who don’t gain weight.

- Nijmegen University Academic Network Family Medicine (CMR/NMP)

Office systems & community intervention increases sun protection counseling.

- Dartmouth COOP


Tailored QI strategies lead to sustained increases in preventive service delivery…

• RAP


...and mixed methods approaches show how to contextualize interventions

• RAP


Brief interventions in primary care reduce problem alcohol use

- WReN


Practices can change to provide health behavior change advice

- 21 PBRNs


Changing individual practice

• ASPN / WReN

PBRN methodology findings
Patients in PBRNs are representative

- ASPN, NEON


Minimal differences in practice patterns of family physicians in a PBRN

- ASPN

PBRN weekly return cards are accurate.

- ASPN


- Westfall JM, Zittleman L, Staton EW et al. Card Studies for Observational Research in Practice. *Ann Fam Med.* 2011;9:63-68. [www.annfammed.org/cgi/content/full/9/1/63](http://www.annfammed.org/cgi/content/full/9/1/63)
For accurate measurement: medical records for what clinicians do to patients; patient report for what they say

• RAP

Knowing and Working with PBRNs
Geography

- **International** International Collaborative Network, IFPBRN
- **National / bi-national** (ASPN), NatNet, PROS, PPRNet
- **State** WReN, MAFPRN
- **Regional** COOP, UPRNet, RAP
- **Single health care system** PPRG, Rainbow Network
- **Single community** HARNET
- **Consortium of Networks** FPBRN
Size / Participants

• A few practices - hundreds of practices
• Single specialty - multispecialty, PAs, NPs
Affiliations

• National Academy
  – PROS, AAFP Research Network

• State Academy
  – WReN, MAFPRN

• Academic Institution
  – RAP, NEON

• Hospital / Health System
  – PPRN
Initiating Vision or Event

- Individual/group with a bee in the bonnet
- Knowledge gap
- Belief in wisdom gained from practice
- Computer system
- Teaching mission
- Single question or idea
Governance

- Academy
- Board of Directors of participants
- Consensus (town meeting)
- Health system
- Academic partner
- Leader
Leadership

• Network
  – Top down
  – Bottom up
  – Coalition / whole system leadership

• Specific projects
  – Network leader(s)
  – Clinician member(s)
  – Outside principal investigator
Idea Generation

- Clinician’s practice
- Family practice department
- Academicians
- Content experts
- Funders
- Group process
Project Design/Refinement

- Small, transdisciplinary group
- Practitioner perspective
- Methods expertise
- Content expertise
- Access to literature
- Pilot testing
Funding

- Opportunistic, ad hoc
- Foundation grants
- Department grants
- Research grants
- Academic department underwriting
- Academy underwriting
Denominator

• Age/sex registries
  – Epidemiological/surveillance studies

• Representative samples of practices
  – Studies of clinician or practice behavior
Practices are Changing Rapidly
In 80 family practices in Northeast Ohio:

- 52% of all employees new within 2 years

- Staff duration
  - 1.8 yrs - network practice
  - 4.3 yrs - non-network practice

- Physician duration
  - 5.8 yrs - network practice
  - 11.3 yrs - non-network practice

Research Designs

• Descriptive studies - clinical trials

• Longitudinal studies

• Quantitative - qualitative - multimethod
Data Collection

• Data collection by
  – Practice
  – Research team
  – Health system

• Data collection method
  – “Weekly return” card
  – Computerized data
  – Medical record
  – Survey / interview
  – Direct observation
Data Analysis

- Network staff
- Investigator
Scholarly Output

- Academician or clinician
- Clinician - academician partnership
- Collaborators
- Writing / editing teams
- Participant reviewers
- Planned - evolutionary
- “Bigger pie” mentality
- Making time
- Write the abstract first
The Research Process

Take Home Lessons

• Consider PBRN work as partnership

• PBRNs are good partners if you want to
  – capture the wisdom of practice as well as
  – D&I the learnings of academia
  – Generate knowledge among less selected settings and people than in academia

• Look for emerging opportunities
  – IT, CTSA, health care system infrastructure
  – Funding
  – Growing community partnerships
References - General


• Green LA, Dovey SM. Practice based primary care research networks. They work and are ready for full development and support. BMJ. 2001;322:567-568.
References (continued)


- Green LA, Hickner J.A short history of primary care practice-based research networks: From concept to essential research laboratories. *JABFM*. 2006: 19(1): 1-10. [www.jabfm.org/cgi/content/full/19/1/1](http://www.jabfm.org/cgi/content/full/19/1/1)

References (Representativeness)


References (Methods/Logistics)


• Pace WD, Staton EW, Holcomb S. Practice-Based Research Network Studies in the Age of HIPAA. *Ann Fam Med*. 2005;3: S38-S45. [www.annfammed.org/cgi/content/full/3/suppl_1/s38](http://www.annfammed.org/cgi/content/full/3/suppl_1/s38).

• Green LA, White LL, Barry HC, Nease DE Jr, Hudson BL. Infrastructure Requirements for Practice-Based Research Networks. *Ann Fam Med*. 2005;3:S5-S11. [www.annfammed.org/cgi/content/full/3/suppl_1/s5](http://www.annfammed.org/cgi/content/full/3/suppl_1/s5).

References (new trends)


