

An abstract network diagram featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of various sizes and colors, including dark blue, light blue, and grey. The lines are thin and grey, creating a dense, interconnected pattern. The background is white with faint, larger circular shapes in light blue and grey. The overall aesthetic is modern and technological.

PRACTICE-BASED RESEARCH NETWORKS: FEATURES AND BENEFITS

Anna Dania MPH, GMS MH, BSc Econ
PhD Candidate FHML, CAPHRI Institute,
Maastricht University

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PBRNs

Collaborations of researchers and primary care practitioners who are engaged in conducting research, addressing questions and problems that emerge from daily practice, translating research findings into evidence-based practice, and improving the quality of healthcare.

PRACTICE-BASED RESEARCH NETWORKS

Emerged from Family
Medicine/General
Practice



Expanded by
engaging all primary
care clinicians and
practice settings

ACKNOWLEDGMENTS

ORIGINAL RESEARCH

A Review of 50-Years of International Literature on the Internal Environment of Building Practice-Based Research Networks (PBRNs)

Anna Dania, MPH, Zsolt Nagykalai, PhD, Ari Haaranen, PhD, Jean W. M. Muris, MD, PhD, Philip H. Evans, FRCGP, MPhil, Pekka Mäntyselkä, MD, PhD, and Chris van Weel, MD, PhD

Purpose: Practice-based research networks (PBRNs) have developed dynamically across the world, paralleling the emergence of the primary care discipline. While this review focuses on the internal environment of PBRNs, the complete framework will be presented incrementally in future publications.

Methods: We conducted a scoping review of the published and gray literature. Electronic databases, including MEDLINE (PubMed), OVID, CINAHL (EBSCOhost), Scopus, and SAGE Premier, were searched for publications between January 1, 1965 and December 31, 2020 for English-language articles.

Rigorous inclusion/exclusion criteria were implemented to identify relevant publications, and inductive thematic analysis was applied to elucidate key elements, subthemes, and themes. Social network theory was used to synthesize findings.

Results: A total of 229 publications described the establishment of 93 PBRNs in 15 countries that met the inclusion criteria. The overall framework yielded 3 main themes, 12 subthemes, and 57 key elements. Key PBRN activities included relationship building between academia and practitioners and development of a learning environment through multidirectional communication.

Conclusions: PBRNs across many countries contributed significantly to shaping the landscape of primary health care and became an integral part of it. Many common features within the sphere of PBRNs can be identified that seem to promote their establishment across the world. (J Am Board Fam Med 2021;34:762–797.)

Keywords: Bibliometrics, Communication, Family Medicine, Practice-Based Research Network, Primary Health Care, Quality Improvement

ORIGINAL RESEARCH

A Review of 50 Years of International Literature on the External Environment of Building Practice-Based Research Networks (PBRNs)

Anna Dania, MPH, PhD, Candidate, Zsolt Nagykalai, PhD, Ari Haaranen, PhD, Jean W. M. Muris, MD, PhD, Philip H. Evans, FRCGP, MPhil, Pekka Mäntyselkä, MD, PhD, and Chris van Weel, MD, PhD

Background: This article is the second part of a novel scoping review of the international literature that presents those key elements that underpin the foundational activities of Practice-Based Research Networks (PBRNs). In this article, we examine the external environment and the intersection between the internal and external environment domains.

Methods: We searched electronic databases, including MEDLINE (PubMed), OVID, CINAHL (EBSCOhost), Scopus, and SAGE for publications in English between 1/1/1965 and 9/15/2021. We also searched reference lists of selected publications, gray literature and other online sources. Inductive thematic analysis was applied to construct the main themes, subthemes, and key elements from a scoping review covering up to 10 years of reported experiences of each of the 98 PBRNs that met the inclusion criteria.

Results: In this study we present 2 main themes: “Stakeholders at the Intersection Between the Internal and External Environment” and the “External Environment.” The first is linked to the subthemes “Patient and Community Stakeholders” and “Other Healthcare Stakeholders” and 11 key elements. The second relates to the subthemes “National Health System,” “Institutional/Governmental Support, National/State Policy and Regulatory Environment” “Professional Organizations,” “Leveraging Previous Research and PBRN Experience and Interacting with Other Networks” and “Health Information Technology (HIT) and HIT Vendors” and 21 key elements.

Conclusions: Despite variations in geography, time, and healthcare context, PBRNs shared many similar developmental experiences over the past 5 decades. Their external environment contributed significantly to their developmental trajectories during the first 10 years of their operation. (J Am Board Fam Med 2022;35:762–792.)

Keywords: Family Medicine, Practice-Based Research Networks, Primary Healthcare, Scoping Review

IMPORTANT SIMILARITIES AMONG THE PBRNS (1)

PBRNs share many similar characteristics, facilitators and barriers, across countries and contexts, even if they differ in their trajectory of development, maturity, sustainability and operational focus


IMPORTANT SIMILARITIES AMONG THE PBRNS (2)

As new PBRNs are created in an “evolved” PBRN environment, they still undergo their own stages of development, which sometimes assimilates the state of earlier PBRNs, albeit on a different timescale

The background is a complex, abstract network diagram. It consists of numerous nodes of varying sizes, some solid black, some solid teal, and some with a black center and a grey outer ring. These nodes are interconnected by a dense web of thin, light grey lines. The overall aesthetic is technical and modern, with a grey-to-white gradient background.

FEATURES

Articulation of mission, objectives and special focus (if any)



Examples of mission

“Virginia ACORN is a collaborative partnership between primary care practices and a multidisciplinary team of researchers devoted to evaluating and improving the quality of primary health care. Research results are intended to inform and influence decisions along the continuum of service to patients, from research to practice and policy.” (<http://acornpbrn.org/mission/> accessed 8-11-2019)

“SPUR-Net’s mission is to improve the quality and safety of health care in primary care settings by identifying and solving problems commonly encountered in practice”. (Kuo et al, 2008)

“Its [WestREN] mission is to support primary care research and education in order to improve the quality of care delivered to patients in the community in the West of Ireland”. (Kavanagh et al, 2010)

EXAMPLES OF OBJECTIVES

- “Overview primary care epidemiology; facilitate researchers' access to primary care — patient index for clinical research; train physicians in research methods; practice base for academic family physicians”. (van Weel, 2000)
- “The objectives are to co-ordinate research projects in general practice, to assist legitimate organizations and individuals undertaking research projects, to facilitate appropriate feasible and high-quality research being undertaken in practices, and to develop the skills and confidence of practices undertaking such research”. (Frew et al, 2001)
- “Create a usable CPCSSN database that will be a searchable data repository for primary care researchers and will be the basis for reports for government and others about chronic disease in Canada”. (Birtwhistle et al, 2009)

EXAMPLES OF FOCUSES

- “In our network the focus is on an intensive contact monitoring of patient diagnoses”. (Hak et al, 1998)
- “The PBRN....was housed at OCHIN to maximize its independence and focus on community-based research”. (DeVoe et al, 2011)
- “The SPAM network, with its focus on processes of care in PC and national representation, should be complementary to other efforts”. (Selby et al, 2015)

FEATURES

As the PBRNs worked toward accomplishing their mission, they developed

(1) relationships

- **long-term**
- **constructive**
- **collaborative**
- **synergetic**
- **reciprocal**
- **collegial**
- **mutual respect, trust, and appreciation between academics and practitioners**



FEATURES

(2) relationships with other healthcare stakeholder groups

- **Patient groups**
- **Community groups**
- **External partners: policymakers, health authorities, public health and government agencies, and social service providers**

FEATURES

(3) Properties helped sustain their internal environment

- **organizational infrastructure, including research data and databases**
- **new knowledge and innovation**
- **learning environment**



FEATURES



PATHWAYS OF ESTABLISHMENT

- Initiating networks with routine collection of data (data validation requested)
- Building networks doing research and engaging a number of practices
- Starting networks focusing on capacity building activities
- Initiating networks developing a survey (e.g., to identify research motivation, interesting topics for research, training needs and subsequent training, and creating a database of research interested practitioners)
- Creating networks leveraging health information technology (HIT) that enables data sharing or data repositories for research and quality improvement
- Initiating networks developing a patient cohort

PATHWAYS OF ESTABLISHMENT

- Sharing resources at various or multiple levels (e.g., developing a forum of intellectual exchange, developing a research panel, developing a forum of communication for potential researchers)

- Developing relationships and communication pathways (e.g., developing first, a peer network for implementation better practice and start a research with a big funded project)

- Linking residents or trainee doctors to practice-based research activity

- Leveraging links with previous PBRN practices and/or training and teaching practices

PATHWAYS OF ESTABLISHMENT

- Developing a patient-centered medical village (community centers network) and one shared EHR for all partners enabling data aggregation and co-learning

- Providing research capacity and infrastructure for smaller networks

- Creating collaborative management and problem solving for practices, and co-creating training

- Advancing implementation science with input from engaged stakeholders

- Creating a network with specific research focus (e.g., health disparities, special patient groups, clinical trials)

BENEFITS FROM PBRNs

PBRNs are the research laboratories of the academic departments, produce scholarly output for academic researchers, knowledge for the academic curricula, provide data to be used in higher degree education and healthcare research

PBRN research gave credibility to family medicine and changed the way the academic world sees the working field of General Practice and Family Medicine.

They were where the discipline emerged and its future lies. Their success and recognition prepared the ground for further funding.

Develop a category of real-life researchers who produce research being in direct communication with the patient and the community they serve

PBRN research evidence developed a growing culture for practice-based research out of the discipline

BENEFITS FROM PBRNs

Result in evidence-based practice, structural changes in healthcare delivery, quality improvement of practice with positive community impact

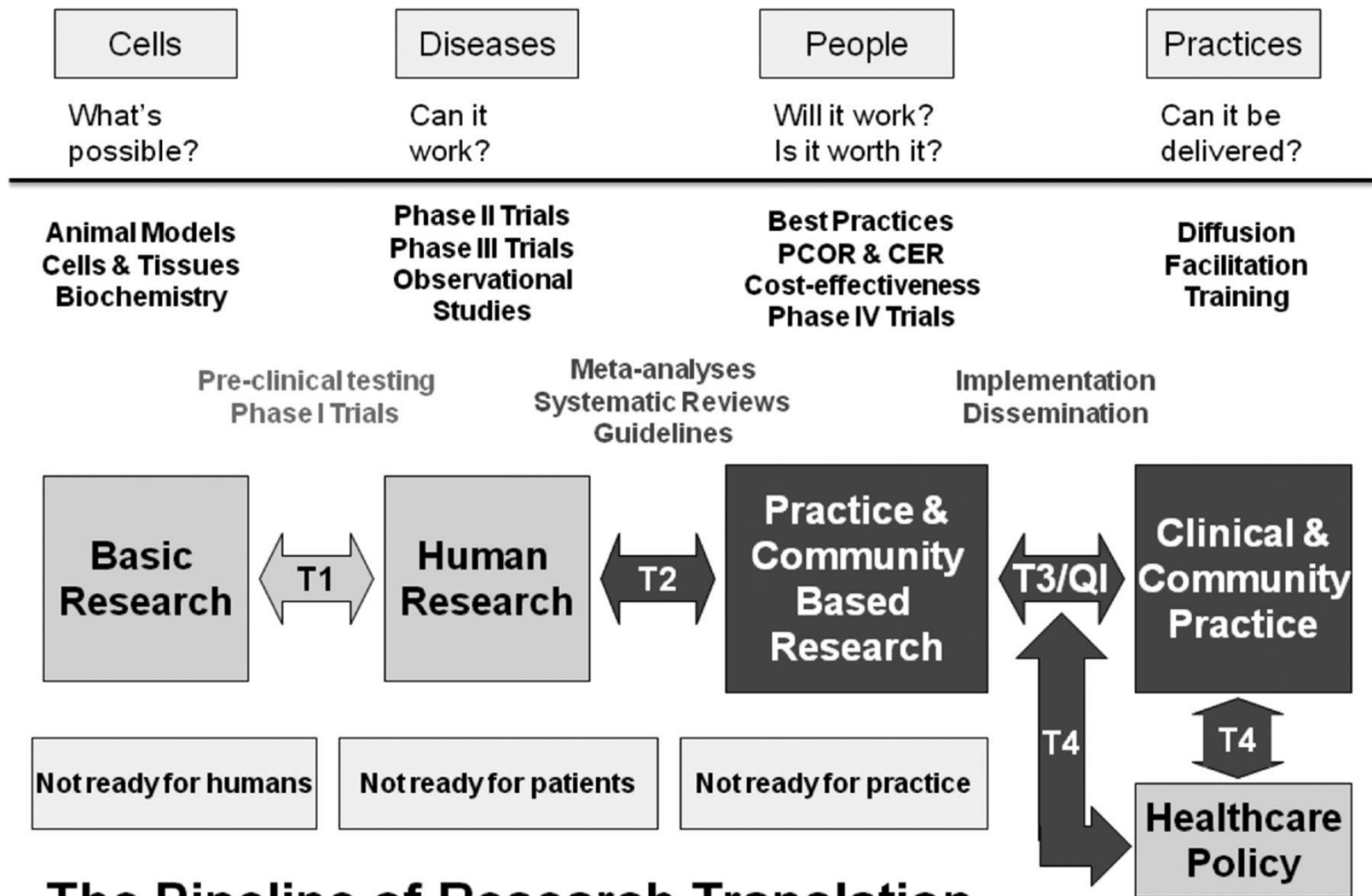
Increase the critical capacity and upgrade skills among the practitioners in the field through the intellectual exchange with the academia and research

Provided academic benefits and career development

The networks were very formative in changing the aspirations and attitudes of policy-makers, academics and medical students.

PBRNs set goals to provide information to policy-makers and health authorities and influence their healthcare plans

PBRNs collaborate with health institutions and provide outcomes informing and influencing political decisions



The Pipeline of Research Translation

SUPPORTIVE ENVIRONMENT



Training and research go hand-in-hand in the academic curriculum

The job description of the family doctor combines care, research, and education

Strong relationships exist between universities, their networks, and the professional organization

Recognition of the value and quality of the network's data

When various stakeholders have tangible reciprocal benefits from the PBRN activity

SUCCESS ELEMENTS

- Research that matters to practices and patients → research that has implementation as an aim → learning health system
- The PBRN value propositions for → clinicians, practices, patients, communities, voluntary organizations, researchers and new knowledge seekers, policy-makers, funders, health systems



The background is a solid blue color with a complex network of thin, light blue lines connecting various circular nodes. Some nodes are small and dark, while others are larger and have a light blue outline. The overall effect is a sense of interconnectedness and digital communication.

THANK YOU