MOSAIC combines the efforts of over a dozen PBRNs and other partners, such as the American Academy of Family Physicians and the DARTNet Institute, to stimulate cooperative research, increase the effectiveness of current research, and promote new research directions. MOSAIC aims to accelerate both the generation of new knowledge and a community of learning for primary care practices to improve quality, patient safety, and effectiveness of care. Through its work, MOSAIC advances the field of health information technology and Meaningful Use, engages patients in practice-based research, and provides support to new researchers to ensure the field of practice-based research continues to evolve and be vibrant.
Partnerships & Collaborations:
MOSAIC partners closely with its member PBRNs and other member organizations, keeping in touch electronically and through monthly meetings, where members collaborate to identify research priorities, funding opportunities, beneficial partnerships, and to facilitate knowledge, share resources, and connect researchers with one another. Members also share grant applications to receive feedback. Collectively, these activities work to enhance ties between networks and researchers and improve research studies.

“Meaningful patient engagement and health IT data are needed in care coordination.”
Drs. Kimminau and Scholle
PBRN Resource Center Webinar

Care Coordination Enabled by Health IT: What Will It Take?
A MOSAIC Partnership with NCQA and New York City
The Agency for Healthcare Research and Quality (AHRQ) funded a research program examining stage 3 of the Meaningful Use (MU) incentive program through studies that evaluate and propose strategies for EHR innovations to increase the value of the MU objectives. MOSAIC, in collaboration with the National Commission on Quality Assurance (NCQA) and the New York City Department of Health and Mental Hygiene, led one of the 12 projects.

The MOSAIC project aimed to:
- Assess the technical feasibility and clinical acceptance of the proposed MU Stage 3 objectives for care coordination in diverse practice settings, including reconciliation and tracking of referrals, managing the care transition record, and use of information technology for patient engagement and clinical decisionmaking.
- Identify organizational and contextual factors that distinguish practices with a higher versus lower level of implementation of EHR functionality and clinical workflows for care coordination envisioned by the proposed MU Stage 3 objectives.
- Explore methods for measuring and reporting on implementation of the proposed MU Stage 3 objectives.

The early and ongoing involvement of MOSAIC leadership helped incorporate practical knowledge from PBRNs into the study protocol, implementation process, and data analyses. MOSAIC worked diligently to engage member practices in the recruitment and site visit portion of the project.

Drs. Kimminau and Scholle presented findings from the project on a Webinar hosted by the PBRN Resource Center. Some of the conclusions they presented include:
- Standard workflows and enhanced interoperability are needed
- Practices need financial and technical support
- Engaging patient in care coordination should be a priority
Training & Education:
To achieve its goal of promoting new research directions among its members, MOSAIC developed a community of learning for primary care practices to improve quality, patient safety, and effectiveness of care. Areas of interest include:

- **Patient Engagement**: Facilitating opportunities to share successful models of patient engagement strategies in practice-based research. The availability of funding for research that involves the patient is increasing, and MOSAIC partners with its members to have a dialogue at monthly meetings about methods that can be incorporated into study design.

- **Grant Proposal Development**: MOSAIC serves as a facilitator to support practice-based research in the community and encourages researchers by offering access to leaders in the field for pre-proposal grant review. Investigators can reserve time with MOSAIC leaders to discuss ideas and models they want to include in grant applications in order to receive timely and priceless feedback. This process is a benefit to the researcher and the PBRN leadership and provides opportunities for partnership and ongoing collaboration.

- **Mentoring New and Expanding Existing PBRNS**: MOSAIC provides resources and mentorship to existing PBRNs who want to expand and to practices that want to join or start a new PBRN. The American Academy of Family Physician's National Research Network (AAFP NRN), MOSAIC’s lead PBRN, partners with networks to facilitate knowledge dissemination in areas such as information technology, network management, and communication. Training and expertise are provided to PBRNs such as the Kansas Patients and Providers Engaged in Prevention Research (KPEPR) Network, which wants to expand and ensure they are running their network efficiently. Some networks approach MOSAIC for simple advice, and others form a formal, ongoing partnership.

Patient Engagement in Practice-Based Research
MOSAIC is dedicated to identifying and disseminating meaningful and valuable ways to engage patients in practice-based research, including in the design, development, and implementation of studies. Educating patients on what practice-based research is and why it is valuable is key to understanding how researchers and patients can work together. At each monthly meeting, MOSAIC partners share strategies and lessons learned on engaging patients and hear presentations from local and national experts. Sharing these examples and bringing information to its members is a major focus of MOSAIC’s comprehensive approach to advancing PBRN work.

Patient Engagement: Models and Information Sources Gathered by MOSAIC

- **Patient/clinician dyad model from the North American Primary Care Research Group**

- **Role of patient advisors in practice (presentation by Dave deBronkart (ePatient Dave))**

- **Patient Centered Primary Care Collaborative** - Advancing an effective and efficient health system built on a strong foundation of primary care and the patient-centered medical home

- **Patient Voices Project** - A community of educated and involved patients working hand in hand with physicians in making decisions about their own health care (UNYNet PBRN in Buffalo, NY)

- **Patient Engagement Webinar by MOSAIC member PBRN UNYNet** - (PBRN RC)

- **Dr. Walter Calmbach from MOSAIC member network STARNet** gave a presentation on developing and maintaining patient advisory groups at the regional level
In the future, developing research projects that take the patient perspective into account will continue to be an area of focus for MOSAIC. The Center plans to work with member networks and other partners such as the North American Primary Care Research Group to:

- Develop standard operating procedures and a repository of resources for all PBRNs that want to better engage patients in research
- Promote the identification of a patient engagement model ideally suited to PBRN research

Clinician Sentiments from the UNYNet Patient Voice Project

“I learned to always stop and get to know your patients as a person rather than a ‘disease’.”

“It is important to take the time to involve the patient, listen to their concerns, and involved them in making decisions about their health care.”

Getting to Know MOSAIC’s Key Personnel

Kim Kimminau, PhD  
Research Director, MOSAIC

"Practices that participate in Practice-Based Research Networks and the MOSAIC Center of Excellence not only improve the practice of family medicine; they also inform patient-centered care, payment reform policy, and they accelerate comparative effectiveness research important to improving patient care."

Laura-Mae Baldwin, MD  
Director, WPRN

"The value of participating in MOSAIC for the WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) Region Practice and Research Network is the opportunity to learn about best practices, tools, and methods for conducting practice-based research, as well as to discuss the challenges that PBRNs face nationally and the creative solutions that they have developed to address them. We are then able to adapt these best practices and solutions to our WWAMI’s needs."

Chet Fox, MD  
Director, UNYNet

"The P30 Federal funding mechanism created eight unique Centers for Primary Care Practice-Based Research and Learning. These Centers, including MOSAIC, enhance practice-based research by providing both the scale and diversity of practices to answer critical research questions in primary care. Bringing together leaders and practices who focus on seeking solutions has resulted in synergy, collaboration, and success."
What is next for MOSAIC?

The MOSAIC Center for Primary Care Practice-Based Research and Learning is led by the American Academy of Family Physicians National Research Network (AAFP NRN), which is a professional, not academic, organization—an attribute that gives the Center a unique perspective. MOSAIC will continue to work with the AAFP NRN and other leaders in practice-based research to advance the field in several ways.

Patient engagement: Educate the AAFP and other MOSAIC members on how to integrate the principles of patient engagement into research and the development of tools and resources. The goal is to provide insight and direction for collaboration with patients and develop practical tools and resources such as a portal of information for patients, providers, and investigators on how to design collaborative and inclusive research projects.

Mentoring the next generation of researchers: Encourage leaders to provide one-on-one mentoring and support for grant application and pilot project development within their networks. The goal is to perpetuate the ideals and goals of practice-based research.

Collaboration among members and other researchers: The mutual support MOSAIC members offer one another is a hugely rewarding aspect of the P30 Center funding opportunity. The goal is continued collaboration in an effort to advance the field of practice-based research.

"MOSAIC’s partnerships with diverse national and regional PBRNs and the work they have accomplished demonstrate the critical role that the AAFP National Research Network plays in advancing primary care research. As more practices focus on how to best meet the needs of their patients and communities, MOSAIC’s work on including patient perspectives in practice is essential and is informing the entire AAFP’s position on this issue."

Dr. Julie Wood, Vice President for Health of the Public & Interprofessional Activities
American Academy of Family Physicians
## Get to Know the Member PBRNs and Organizations of MOSAIC

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<td><strong>Director:</strong> Laura Lee Hall&lt;br&gt;<strong>Location:</strong> National&lt;br&gt;<strong>Quality Improvement Organization</strong></td>
<td>ACP Quality Connect is a network of physicians interested in health care quality improvement. This network offers free QI programs on specific clinical conditions. The programs use a collaborative approach, bringing together ACP quality improvement experts and Quality Connect members around the country, to share expertise and support each other in quality improvement.</td>
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## MOSAIC: Meaningful Outcomes and Science to Advance Innovations Center of Excellence

### NURTURING PARTNERSHIPS IN RESEARCH, TRAINING, DISSEMINATION, AND IMPLEMENTATION

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**Collaborative Care Research Network (CCRN)**
http://www.aafp.org/nrn/ccrn

- **Director:** Rodger Kessler
- **Location:** National
- **Founded in:** 2012

The Collaborative Care Research Network (CCRN), a sub-network of the AAFP’s NRN, was created so that clinicians from across the country can ask questions and investigate how to make collaborative care work more effectively. The objectives of the CCRN are to support, conduct, and disseminate practice-based primary care effectiveness research that examines the clinical, financial, and operational impact of behavioral health on primary care and health outcomes.


Access the papers from the Collaborative Care Research Network Research Development Conference published by the Agency for Health Care Quality and Research: [A National Agenda for Research in Collaborative Care](http://www.aafp.org/nrn/ccrn)
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| **Connecticut Center for Primary Care (CCPC)**  
http://www.centerforprimarycare.org/ | The CCPC strives to preserve and strengthen the delivery of primary medical care services and the health of our communities. CCPC’s mission is to become a premier center for primary care research, for the translation of research into primary care practice, quality improvement and safety, and for the transformation of the Connecticut primary care system, catalyzing the care coordination of its various elements and sustaining change. | Visit the CCPC Web site for a full list of publications, including: Lynch J, Rosen J, Selinger HA, Hickner J. Medication management transactions and errors in family medicine offices: a pilot study. Advances in patient safety, new directions and alternative approaches. Rockville, MD: Agency for Healthcare Research and Quality. | Visit the CCPC Web site for a full list of projects, including: Reducing Adverse Self-medication Behaviors in Older Adults with Hypertension: CCPC is collaborating with UConn School of Nursing to reduce adverse self-medication practices in older adults via a computer program developed for older adults. |
### DARTNet Institute

**http://dartnet.info/**

**President, Board of Directors:**
John Turner White

**CEO:** Wilson Pace

**4,000 clinicians and more than 85 organizations**

**Location:** National

**Founded in 2007**

**Data Registry Organization**

DARTNet is a rapidly growing collaboration of practice-based research networks working to build a national collection of EHR data, claims data, and patient reported outcomes data. The networks seek to blend quality improvement, effectiveness and translational research with a data driven-learning system. The learning system includes advanced performance measures and assistance with the development and deployment clinical decision support systems.

**Key publication**

Visit the DI Web site for a full list of publications, including:


**Recently funded project**

Visit the DI Web site for a full list of projects, including:

- Effect Rx: Integrating Patient-reported Outcomes and EHR Data to Improve Clinical Decision Support for Depression Treatment: DI is collaborating with Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Denver to collect depression severity and side effect tolerability information from patients in primary care being treated with an antidepressant, and integrate this information into a feedback report for clinicians to use at the point-of-care.
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| **Dental Practice-Based Research Network (DPBRN)**  
[http://nationaldentalpbrn.org/](http://nationaldentalpbrn.org/) | The DPBRN works to improve oral health by conducting dental practice-based research and by serving dental professionals through education and collegiality. | [Visit the DPBRN Web site for a full list of publications and presentations](http://nationaldentalpbrn.org/), including:  
Kakudate N, Sumida F, Matsumoto Y, Yokoyama Y, Riley JL III, Gilbert GH, Gordan VV. *Dentists' decisions to conduct caries risk assessment in a dental practice-based research network*. Community Den Oral Epidemiol 2015;43(2):128-34. | [Visit the DPBRN Web site for a full list on ongoing and completed studies](http://nationaldentalpbrn.org/), including:  
**Primary Care Management for TMJD Pain (CONDOR TMJD Study):** Determine the most practical approach to conduct a randomized clinical trial to evaluate initial interventions for patients with painful temporomandibular muscle and joint disorders (TMJD) in primary care clinics. |

| **Electronic National Quality Improvement and Research Network (eNQUIRENet)**  
[http://www.aafp.org/aafp/about/initiatives/nrn/enquirenet.html](http://www.aafp.org/aafp/about/initiatives/nrn/enquirenet.html) | eNQUIRENet, a sub-network of the AAFP NRN, is a federated network EHRs. Health information from 500 clinics around the country, representing more than 2,400 clinics and more than 4,000,000 patients is collected and used for research. | [Visit the AAFP NRN Web site for a full list of publications](http://www.aafp.org/aafp/about/initiatives/nrn/enquirenet.html), including:  
**CA-MRSA Infections:** Management by Primary Care Clinicians of Patients Suspected of Having Community-Acquired, Methicillin-Resistant Staphylococcus Aureus Infections |
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<td>Free Clinic Research &amp; Educational Engagement Network (FreeNet) &lt;br&gt; <a href="http://www.tatehealth.com/">http://www.tatehealth.com/</a></td>
<td>TATE seeks to inform, educate, and engage health care ecosystem participants, including but not limited to public health leaders, health system executives, health information technology professionals, government officials, academic faculty, physicians, and patient advocates in collaborative efforts to promote and advance initiatives in support of the National Health IT Agenda. FreeNet is a being developed at TATE in collaboration with the AAFP NRN.</td>
<td>Publications from FreeNet are forthcoming</td>
<td>Visit the Tate Labs page for more information on research being conducted.</td>
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<td>Director: Tom Gomez &lt;br&gt; 50 Clinicians in 24 Clinics &lt;br&gt;Lake: National, including Florida, Mississippi, Texas, Washington, Ohio &lt;br&gt;Founded in 2012</td>
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Director: Paul Meissner  
800 Clinicians in 38 Clinics  
Location: New York  
Founded on 2003  
NYC RING is PBRN sponsored by the Albert Einstein College of Medicine Department of Family & Social Medicine and focuses exclusively on the urban underserved. They strive define and strengthen the knowledge base and improve the practice of urban primary care.  
**Visit the NYC RING Web site for a full list of projects**, including: Acupuncture to Decrease Disparities in Outcomes of Pain Treatment (ADDOPT): This study is a repeated measures clinical trial assessing the adoption and implementation of acupuncture as a treatment for chronic pain in an urban primary care setting.
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| **Oklahoma Physicians Research/Resource Network (OKPRN)**  
www.okprn.org | OKPRN works to support primary care clinicians through a professional network for peer learning, sharing of resources for best practices, and practice-based research. | Visit the OKPRN Web site for a full list of research publications, including:  
Implementing a Sustainable Model for Delivery of Preventive Services in Rural Counties (2014 – 2018)  
IMPaCT: Primary Care Extension in Oklahoma: An Evidence-Based Approach to Dissemination and Implementation (2011 – 2013) |

| **Residency Research Network of Texas (RRNet)**  
http://iims.uthscsa.edu/RRNeT/home | RRNet strives to improve family physicians' interest and skills in research, and to find answers to clinical questions that are relevant to family medicine patient populations in Texas. | Visit the RRNet Web site for a full list of presentations, including:  
Young RA, Bayles B, Hill JH, Kumar KA, Burge S. [*Family physicians' opinions on the primary care documentation, coding, and billing system: a qualitative study from the residency research network of Texas*](https://journals.ama-assn.org/article/10.4115/fmed.14.46.378). Fam Med 2014;46(5):378-84 | Visit the RRNet website for a full list of projects, including:  
**Patients' Understanding of Their Disease:**  
Examines the correlations between patients' understanding of their disease, their readiness or motivation to self-manage their disease, their self-management behaviors (adherence and activation), and their disease outcomes. |
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<td><strong>Scalable Architecture for Therapeutic Inquires Network (SAFTINet)</strong>&lt;br&gt;Director: Lisa Schilling&lt;br&gt;100 Clinics&lt;br&gt;Location: National, including California, Colorado, Tennessee, Vermont&lt;br&gt;Founded in 2010</td>
<td>The mission of SAFTINet is to establish and maintain a multi-state consortium of stakeholders dedicated to generating, implementing and disseminating evidence to enhance the quality and value of health care for safety net and underserved patient populations.</td>
<td>Schilling LM, Kwan BM, Drolshagen CT, Hosokawa PW, Brandt E, Pace, WD, Uhrich C, Kamerick M, Bunting A, Payne P, Stephens WE, George JM, Vance M, Giacomini K, Braddy J, Green MK, Kahn MG. <a href="https://doi.org/10.1002/egms.265">Scalable Architecture for Featured Translational Inquiries Network (SAFTINet) technology infrastructure for a distributed data network</a>.</td>
<td>SAFTINet's initial project included studies to identify and assemble the following condition cohorts: asthma (both pediatric and adult), hypertension, and hyperlipidemia.</td>
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**South Texas Ambulatory Research Network (STARNet)**<br>[http://iims.uthscsa.edu/STARNet/home](http://iims.uthscsa.edu/STARNet/home)<br>Director: Walter Calmbach<br>60 Clinicians in 40 Clinics<br>Location: Texas<br>Founded in 1992 | STARNet works to conduct and disseminate practice-based research that results in new knowledge and improves the health of patients in South Texas. | [Visit the STARNet Web site for a full list of publications](http://iims.uthscsa.edu/STARNet/home), including: Patel NK, Parchman ML. [The chronic care model and exercise discussions during primary care diabetes encounters](https://journals.ama-assn.org/article/10.1377/jamafamilymed.2011.0581), J Am Board Fam Med 2011;24:26-31. | [Visit the STARNet Web site for a full list of projects](http://iims.uthscsa.edu/STARNet/home), including: AS Pirin in Reducing Events in the Elderly: A National Institute on Aging clinical trial to test whether taking aspirin contributes... |
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| **Upstate New York Network (UNYNet)**  

**Director:** Chet Fox  
**211 Clinicians in 49 Clinics**  
**Location:** New York  
**Founded 1994**

| **WWAMI Region Practice and Research Network (WPRN)**  

**Director:** Laura-Mae Baldwin  
**760 Clinicians in 45 Clinics**  
**Location:** Alaska, Idaho, Montana, Washington, Wyoming  
**Founded in 2008**

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[AHRQ Agency for Healthcare Research and Quality](www.ahrq.gov)  
[PBPRN Practice-Based Research Networks](pbrn)