

6-1-2017

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Cardarelli, Roberto; Workman, Charlotte Sue; Weatherford, Sarah; Whanger, Stacey; and King, Dana E., "Dissemination Approaches to Participating Primary Care Providers in a Quality Improvement Program Addressing Opioid Use in Central Appalachia" (2017). *Clinical and Translational Science Institute*. 662. <https://researchrepository.wvu.edu/ctsi/662>

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# HHS Public Access

Author manuscript

*South Med J.* Author manuscript; available in PMC 2018 June 01.

Published in final edited form as:

*South Med J.* 2017 June ; 110(6): 421–424. doi:10.14423/SMJ.0000000000000664.

## Dissemination Approaches to Participating Primary Care Providers in a Quality Improvement Program Addressing Opioid Use in Central Appalachia

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### Abstract

**Objectives**—Practice-based research networks (PBRNs) have been described as new clinical laboratories for primary care research and dissemination. PBRNs, however, have struggled to disseminate research results in a meaningful way to participating providers and clinics.

**Methods**—The Central Appalachia Inter-Professional Pain Education Collaborative was developed to work with PBRN clinics using quality improvement methods, deliver statewide continuing education activities to address the issue of opioid use in patients with chronic pain, and develop a multimodal mechanism to disseminate project results to clinics and participating providers.

**Results**—Successful change in the delivery of chronic pain care was dependent on the clinic’s commitment to a team-based, patient-centered approach. Statistically significant improvements were shown in 10 of 16 process measures, and 80% of the participants agreed that the quality improvement process activity increased their knowledge and would improve their performance in managing patients with chronic pain, as well as patient outcomes in their practice.

**Conclusions**—The Central Appalachia Inter-Professional Pain Education Collaborative project used an extensive and innovative dissemination plan under the rubric of “continual dissemination.” Unlike traditional dissemination efforts that focus on summary presentations, this initiative used a continual dissemination approach that updated participants quarterly through multiple means throughout the project, which improved engagement in the project.

### Keywords

chronic pain; dissemination; opioid; practice-based research networks; quality improvement

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Practice-based research networks (PBRNs) have been described as “new clinical laboratories for primary care research and dissemination.”<sup>1</sup> PBRNs increasingly are recognizing their potential to expand their purpose and are supporting quality improvement (QI) activities within primary care practices and the adoption of an evidence-based culture in primary care practice.<sup>2</sup> PBRNs, however, have struggled in regard to how to disseminate research results and study progress in a meaningful way. The Agency for Healthcare Research and Quality defines a primary care PBRN as a group of ambulatory practices devoted principally to the primary care of patients and affiliated in their mission to investigate questions related to community-based practice and to improve the quality of primary care.<sup>3</sup> Dissemination can be defined as “the purposive distribution of information and intervention materials to a specific public health or clinical practice audience.”<sup>4</sup> The Central Appalachia Inter-Professional Pain Education Collaborative (CAIPEC) was developed as a collaborative effort between the Department of Family and Community Medicine at the University of Kentucky College of Medicine and the Department of Family Medicine at the West Virginia University Health Science Center to work with PBRN clinics in this effort. They collaborated from March 2015 to May 2016 to facilitate toolkits and deliver continuing education (CE) activities that addressed the issue of opioid use in patients with chronic pain.

This article describes a successful mechanism that the CAIPEC program undertook to continually disseminate results and progress of the program to participating clinics and providers across the two PBRNs. We framed our approach following the *Agency for Healthcare Research and Quality Quick-Start Guide to Dissemination for PBRNs*.<sup>5</sup>

## Methods

Rates of opioid and benzodiazepine prescriptions are disproportionately high in the Appalachian region of the United States. A 2012 report ranked West Virginia third and Kentucky fourth in the country for the number of opioid pain-reliever prescriptions.<sup>6</sup> Other studies show that West Virginia leads the nation in the number of drug-overdose deaths.<sup>7</sup> At the core of these alarming statistics is the high prevalence of painful and disabling physical conditions in these states. In 2011, 15.8% of adults in Kentucky and 17.6% in West Virginia reported having a disability.<sup>8</sup> Because of the geography and geology of the Appalachian region, numerous health-related disparities are found, including a shortage of primary care providers.<sup>9</sup>

The QI process was facilitated in the Kentucky Ambulatory Network and West Virginia PBRN clinics through the use of practice facilitators and CAIPEC toolkits, which included tools and implementation workbooks to guide clinics in the planning and implementation phases. Successful change in the delivery of chronic pain care was dependent on a clinic’s commitment to a team-based and patient-centered approach. By using a chronic pain clinical guideline, a chronic pain guideline quiz, an organization readiness-to-change assessment, a participation and functioning teamwork survey, sample clinic workflows, and Plan-Do-Study-Act (PDSA) worksheets, the participants were able to evaluate their knowledge of care, readiness to change, teamwork values, and current clinic workflow. The use of the PDSA worksheets, with training and guidance by the practice facilitators, allowed the clinic

teams to reevaluate their implantation process and make improvements based on self-identified challenges and successes.

The CE activities were included in the CAIPEC program to improve the delivery of chronic pain management to the residents of central Appalachia through four state conference presentations focusing on opioid-prescribing education, eight community roundtable events, and online learning modules. Each interactive roundtable was facilitated by a physician, behavioral specialist, and/or massage therapist and focused on provider perspective and team-based approaches aligned with the CAIPEC module objectives. The eight learning modules on the CAIPEC Web site ([www.cecentral.com/caipec](http://www.cecentral.com/caipec)) covered the following topics:

- Epidemiology of chronic pain
- Biopsychosocial aspects of chronic pain
- Risk management
- Chronic pain history and shared decision-making approaches
- Examination and diagnostic testing in patients with chronic pain
- Nonpharmacologic and pharmacologic treatment options for chronic pain
- Practice enhancement in managing the chronic pain of patients through a team-based approach
- General drug information

Through the use of PBRN clinics for multiple studies, research facilities can build trust, increase efficiency, streamline communication, and improve the ability to adapt methods/protocols to different settings.<sup>10</sup> To increase efficiency and streamline communication, quarterly updates through the “Pain Pulse Newsletter” were disseminated to the 8 clinics and 20 healthcare providers participating in clinics in Kentucky and West Virginia. The newsletter was distributed to the participating clinic teams, PBRNs, Area Health Education Centers, and Clinical and Translation Science Institute listservs. Topics included in the newsletter were project, staff, and clinic introductions; time-line updates on toolkit implementation; and information on continuing education events, including roundtables, conferences, and CAIPEC webcast learning modules. In addition, explanations of the PDSA model in the toolkit, next steps in the project, including challenges and successes, pill counting and recognizing overdose tips, and community pain clinic model articles were discussed. As data analyses were completed for the project, the Pain Pulse Newsletter also became a beneficial dissemination tool for project outcomes.

Once the implementation process concluded, and to improve and sustain the quality of care and the ability to adapt methods/protocols to different settings, evidence-based results from the QI chronic pain toolkit interventions were disseminated to the clinics through outcome dissemination packets, a best practices share call, and a QI interventions share. The best practices share call included CAIPEC and PBRN staff members from Kentucky and West Virginia along with participating clinic team members. The discussion covered outcomes of the project and addressed data questions, as well as the sustainability of the QI projects in the participating clinics. To show appreciation to the clinics for their hard work and

dedication, a certificate of appreciation and a letter from the White House recognizing medical professionals and their service to keep our communities healthy were included in the outcome dissemination packets. The packets also included a cover page, overall outcome page, clinic-specific outcomes, and the CE analyses. A QI intervention share document was created with hyper-links to combine the QI evidence-based results and link them to the toolkit implementation forms on the CAIPEC site. The document included the intervention form used by the clinic, with a summary description regarding how the specific clinic used the document, the process measure used for evaluation, and results from baseline and 3-month postintervention with statistical significance. This QI intervention share document was included in the outcome dissemination packets given to the clinics, placed on the CAIPEC Web site for general access, and used as a discussion platform during a best practices share call among the PBRN clinics and research facilities. As a final dissemination method, the CAIPEC outcome results were presented at the statewide PBRN conference, the annual West Virginia Rural Health Conference, and through journal and newspaper publications.

## Results

The CAIPEC project was a strong collaborative effort on the part of the universities, the Kentucky Ambulatory Network, and West Virginia PBRN clinic teams, which resulted in positive outcomes. Overall, there were statistically significant improvements in 10 of 16 process measures, and 7 of 8 clinics significantly improved in at least one (if not all) of the process measures that they chose to use for QI. The clinic teams chose a QI process to implement based on their self-reflected areas of need and after reviewing gold-standard processes based on opioid recommendations issued by state and federal governments. Examples of chosen interventions to improve upon included implementing controlled medication policies; using controlled medication agreements; implementing a urine drug screen plan; using opioid risk, pain assessment, and documentation tools; and using functional assessments. More than 700 eligible chart reviews were completed based on patient age older than 21 years, patients examined in clinics 3 times in the past 12 months for chronic pain, patients currently treated with an opioid medication, and the clinic provider serving as the primary manager for chronic pain. The 10 process measures that showed improvement from baseline to the 3-month post-intervention included use of a clinic workflow (91%), urine drug test within the last 12 months (12.9%), a controlled medication agreement in chart (10.7%), use of nonopioid adjuvant medication (11.8%), use of alternative therapies (8.5%), referral to other specialists (16.1%), use of a mood disorder tool (8.2%), use of a risk assessment tool (11.9%), documentation of a pain measure (15%), and use of a functional assessment (16.2%). No significant changes in overall patient pain levels from baseline to the 3-month post-QI intervention were noted. This is believed to be secondary to a short 3-month interval period, which did not allow adequate time to appreciate any potential changes in pain level; however, 80% of the participants agreed that the QI process activity increased their knowledge, would improve their performance in managing patients with chronic pain, and would help improve patient outcomes in their practices. A majority of the participants had been in practice for 6 to 15 years, 80% of the respondents reported prescribing schedule 2 or 3 medications, and more than 75% had

prescribed at least 1 extended-release/long-acting opioid prescription in the past year. Knowledge and competence in chronic pain management were evaluated using an 18-question multiple-choice knowledge test that addressed chronic pain management, aberrant drug-behavior risk, and appropriate opioid administration. The test was provided before implementation and then again post-implementation and was compared with a control group. This assessment demonstrated significant positive changes in scores of 10.6% between groups. Team functions survey scores underwent the largest increases with “I can comfortably disagree with others” (1.67%) and “I frequently interpret information” (1.03%). Overall scores from the organization readiness-to-change assessment showed indifference regarding the need to change in chronic pain management at baseline, but increased by 0.8 points postimplementation to show participants strongly believed that there is evidence for the need for chronic pain management; 65% stated they intended to make changes. More than 1219 participants accessed the roundtables, conferences, or webcasts for CE activities, and a total of 958 hours of CE credit was requested. These numbers included 270 participants who accessed the online clinical toolkit.

## Discussion

The CAIPEC project used an extensive and innovative dissemination plan under the rubric of continual dissemination. Unlike traditional dissemination efforts that focus on summary presentations and manuscripts after the completion of the project, this initiative used a continual dissemination approach that, in addition to summative presentations, updated participants quarterly through multiple means throughout the length of the project. This information is extremely valuable to clinical providers and staff as they use these techniques to better manage patients’ chronic pain and integrate a team-based approach in deciding what and how to implement change. Continual dissemination to the PBRN sites allows the opportunity to troubleshoot implementation issues as the project progresses to achieve the best results, to understand the impact on their own clinic, and to receive guidance based on the successes experienced by other clinics and how to overcome challenges. These strategies also help PBRNs disseminate information to all network members and inspire others to implement these evidence-based practices into their own workflow.

## Conclusions

The CAIPEC educational and implementation research program aims to serve as a sustainable resource for providers and an exemplar dissemination model for PBRNs. CAIPEC was developed to educate and facilitate a QI intervention that addressed disproportionately high opioid prescribing rates and overdose deaths in the US Appalachian region. The collaboration resulted in process measure improvement and increased knowledge and competence in chronic pain management through multiple dissemination techniques. It reached physicians, nurse practitioners, nurses, physician assistants, massage therapists, physical therapists, behavioral specialists, and other health professionals (eg, health services administrators).

## Acknowledgments

The project described was supported in part by the Independent Grants for Learning and Change through the Pfizer Consortium and National Institute of General Medical Sciences, grant no. U54GM104942.

R.C. and S. Weatherford have received compensation from the Pfizer Grants for Learning and Change. S. Whanger is the manager of the WV Practice-Based Research Network. D.E.K., and C.S.W. have received compensation from the Central Appalachia Inter-Professional Pain Education Collaborative, subcontract from the University of Kentucky Pfizer Foundation award. Accepted January 23, 2017.

We thank our study partners: the University of Kentucky with the Kentucky Ambulatory Network, West Virginia University and the WV Practice-Based Research Network, and the Kentucky All Schedule Prescriptions Electronic Reporting Agency, the Kentucky College of Osteopathic Medicine, and the Kentucky and West Virginia Area Health Education Centers.

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### Key Points

- Benefits of working with practice-based research networks to implement quality improvement toolkits.
- Discuss continual dissemination approaches to improve intervention engagement.
- Identify continuing education activities to address the issue of opioid use in patients with chronic pain.