

**U.S. Department of Veterans Affairs  
Veterans Health Administration  
Office of Academic Affiliations**



**Centers of Excellence in Primary Care Education**

***Compendium of Five Case Studies: Lessons for  
Interprofessional Teamwork in Education and  
Workplace Learning Environments 2011-2016***

***A primer to curricular activities and strategies that can lead to the  
advancement of interprofessional Veteran and person centered care in  
clinical workplace education programs***



**BOISE: Interprofessional Case Conferences  
for High Risk/High Need Patients-The "PACT  
ICU" Model**

**CLEVELAND: The Dyad Model**

**SAN FRANCISCO: Huddling for High  
Performing Teams**

**SEATTLE: The Panel Management Model**

**WEST HAVEN: Initiative to Minimize  
Pharmaceutical Risk in Older Veterans  
(IMPROVE) Polypharmacy Clinic**

**Centers of Excellence in Primary Care Education (CoEPCE)  
VA Leadership in interprofessional Academic Patient Aligned Care Teams (iAPACT)**

***Compendium of Five Case Studies: Lessons for Interprofessional Teamwork  
in Education and Workplace Learning Environments 2011-2016***

**VA's Office of Academic Affiliations  
Developing the next generation of health professions' leadership**



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ISBN: 978-0-16-094202-0

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## ABOUT THE ENTERPRISE

VA launched the Office of Academic Affiliations Centers of Excellence in Primary Care Education in 2010 to accomplish several goals.

1. Establish clinical and educational infrastructure for optimal teaching, working, learning and leading in interprofessional care teams.
2. Attract, prepare and retain diverse health professionals prepared as leaders in collaborative interprofessional team-based practice.
3. Improve upon team-based teaching, learning, working and leading in support of Veteran and patient-centered care.
4. Work closely with Veterans, their families and caregivers to support necessary changes in policy and practice that improve Veterans safety, experience and well-being.

*"Remember that health professions education... all professions and especially in the last stages of preparation, is an apprenticeship model. The trainees are learners in our clinical environments... and are 'doing' while learning under supervision. That necessarily requires that clinical environment, the patients, the clinical staff, the institutions and systems in which we all work, to be (working) together."*

*Stuart Gilman, MD, MPH*

*"This program serves as an excellent example of how VA can lead the way in developing new and innovative training models that will help address the health care needs of our nation's Veterans and influence inter-professional training for years to come."*

*Malcolm Cox, MD*

## VA CoEPCE Case Studies Quality Improvement Questionnaire

The Centers of Excellence in Primary Care Education partner with Academic Institutions and public and other professional organizations to improve interprofessional education and collaborative practice.

We hope to better understand the usefulness of the case studies in this compendium in three areas:

1. **Dissemination** – Are efforts successful towards reaching a broad audience?
2. **Effectiveness** (Does the end-user perceive that this package will be/is/was useful and in what ways.
3. **Adoption/Implementation** – Does the end-user adopt or reproduce strategies within the document and were efforts to adopt or reproduce these strategies successful.

Please note: Information gathered in this assessment will be anonymous and information collected is intended for operational program improvement.

**Questionnaire Link:** <https://www.research.net/r/VA-CoEPCE-CASESTUDIES>

**Annette Gardner, PhD, MPH**

**Assistant Professor, Department of Social and Behavioral Sciences**

**Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco**

**Boise Case Study #1**

***Interprofessional Case Conferences for High Risk/High Need Patients-The “PACT ICU” Model***

William G. Weppner, MD, MPH; Janet Willis, BSN, RN; Jared Bernotski, BA

**Cleveland Case Study #2**

***The Dyad Model***

Laura Clementz, MA, MS; Renée H. Lawrence, PhD; Mary A. Dolansky, PhD, RN; Alli M. Heilman, NP; Anne R. Rusterholtz, MSN, NP; Simran Singh, MD; Matthew Sparks, MSN, NP; and Mamta K. Singh, MD, MS

**San Francisco Case Study #3**

***Huddling for High Performing Teams***

Rebecca Shunk, MD; Maya Dulay, MD; Anna Strewler, MS, AGNP-BC and Bridget O’Brien PhD

**Seattle Case Study #4**

***The Seattle Panel Management Model***

Catherine P. Kaminetzky, MD, MPH; Anne P. Poppe, PhD, RN; and Joyce E. Wipf, MD

**West Haven Case Study #5**

***Initiative to Minimize Pharmaceutical Risk in Older Veterans (IMPROVE) Polypharmacy Clinic***

John M. Thomas, MD; Marcia C. Mecca, MD; Anne Hyson, MD, MSc; Kristina M. Niehoff, PharmD, BCPS; Sean Jeffery, PharmD, GCP, FASCP, FNAP; John Sellinger, PhD; Rebecca Brienza, MD, MPH

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## Centers of Excellence in Primary Care Education

### ***FIVE CASE STUDIES: Lessons for Interprofessional Teamwork in Education and Workplace Learning Environments 2011-2016***

*Support for this compendium is through  
Department of Veterans Affairs, Office of Academic Affiliations.*



Robert Jesse, MD, VA Chief Academic Affiliations Officer  
2015 CoEPCE Annual Meeting, Dallas, TX

***"The goal of the Centers of Excellence in Primary Care Education is to  
transform the primary care workforce where healthcare begins...  
in the systems of teaching and training."***

***Robert Jesse, MD***



## The Centers of Excellence in Primary Care Education



The Boise CoEPCE PACT "ICU" Model



The Cleveland CoEPCE Dyad Model



The Seattle CoEPCE Panel Management Model



The San Francisco CoEPCE Huddle



The West Haven CoEPCE Polypharmacy Model





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**Foreword by Barbara Brandt, EdM, PhD**  
**for**  
**Department of Veterans Affairs Office of Academic Affiliations**  
**Centers of Excellence in Primary Care Education**

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**E**ver since the 1972 Institute of Medicine publication of *Educating the Health Team*, the field of interprofessional education (IPE) and collaborative practice (IPCP) has experienced the “long and winding road” of implementation (Hall & Weaver, 2001). Until the early 2000s, the progress in the field was “stuttering”. Early on, important environmental factors such as fee-for service reimbursement that favors physicians over other professions and teams, little interest in processes of health care, and the lack of evidence of team effectiveness produced barriers, hindering the full-scale adoption and mainstreaming of IPCP in United States (U.S.) healthcare (Brandt, 2015; Schmitt, Baldwin, & Reeves, 2011). In many ways, the hurdles in IPE such as scheduling times and classrooms for students to meet, siloed and rigid curricula in individual health professions schools, tensions between professions and specialties, and the lack of perceived value haunt the field to this day (Curran, Sharpe, & Forristall, 2007).

Bright spots in health teams have existed in such areas as rehabilitation, hospice, geriatrics, renal, intensive care and transplantation teams since the 1970s. Starting in geriatric care, the Veterans Health Administration healthcare system has been an important exception in their early, sustained and expansive commitment to team-based care and IPCP. Since 2000, after the publication of the Institute of Medicine *To Err is Human* and *Crossing the Quality Chasm*, interest in and momentum for IPCP has been exponentially growing in the United States. Many turn to the Veterans Health Administration for not only historic lessons learned about teams but more importantly the contemporary, bold initiative of deploying thousands of Patient-Aligned Care Teams (PACT) in new models of care throughout the U.S. (Rosland et al., 2013). Since 2010, building upon the well-known concept of patient-centered medical homes, staffed by high-functioning teams, PACT’s aim has been to redesign care that is patient-driven, proactive, personalized, team-based care focused on wellness and disease prevention resulting in improvements in Veteran satisfaction, improved healthcare outcomes, and costs (US Department of Veterans Affairs, 2016).

By 2010, the transforming U.S. healthcare system has renewed focus on IPE for IPCP, and the breadth of external drivers stimulating interest in IPE is impressive. Unfortunately, because the implementation of IPE has primarily been in the classroom and not practice, it has experienced ebbs and flows of interest over the past fifty years. The evidence of the effectiveness of IPE to patient and health outcomes is slim (IOM, 2015). Therefore, we are looking for models and solutions – and again turn to the VA for answers. With the deployment of the PACTs, the VA Office of Academic Affiliations had the foresight to understand that without investment in workforce development across pre-licensure, residency and current clinicians, they would fall short of their bold goals. To respond, in 2012 the VA

invested in five Centers of Excellence of Primary Care Education to serve as important incubators for not only implementing new models of care but also new models of learning in practice (Gilman, Chokshi, Bowen, Rugen, & Cox, 2014). *The Compendium of Five Case Studies: Lessons for Interprofessional Teamwork in Education and Workplace Learning Environments 2011-2016* is an important resource written from the voice of those implementing innovative IPE approaches in practice over the first five years.

The VA Office of Academic Affiliations and the staff of the Coordinating Center and sites of the VA Centers of Excellence for Primary Care Education are committed to and have been publishing their results in reputable peer reviewed journals. This *Compendium*, however, is different and the National Center for Interprofessional Practice and Education team is honored to have managed the peer review and serve as partners in dissemination. With this report, the CoEPCE team wanted to tell a different story – one rarely published in traditional academic venues. **When I first read the five cases, what impressed me was the reflection, the deeper story behind the story. We have the opportunity to learn about context and developmental issues from a national large-scale complex adaptive systems perspective.** This report provides important lessons of workplace learning while implementing IPE (Nisbet, Lincoln, & Dunn, 2013).

Since the publication of the IOM *Measuring the Impact of IPE on Collaborative Practice and Patient Outcomes* in 2015, we now place greater emphasis on continuing professional development and learning in practice than what happens in the classroom with pre-licensure students. We are learning that it is imperative to introduce entry-level students to IPCP. But we can only take students so far to prepare for the future if they enter traditional, hierarchical practices, or the “hidden curriculum on steroids”, during experiential rotations. Students and residents, rightly so, question whether classroom-only team problem-based learning, simulations, or activities represent authentic care experienced every day by health professionals and their patients. The CoEPCE programs hit these complex issues head on by focusing on improving patient care through improvement in interprofessional collaboration and teamwork (“Best Evidence Medical Education (BEME): report of meeting: 3-5 December 1999, London UK,” 2000; Hammick, Freeth, Koppel, Reeves, & Barr, 2007; Reeves et al., 2016)

The comparative analysis sheds light on the facilitating factors for advancing sustainable interprofessional collaboration models in diverse settings. What is particularly exciting is that the CoEPCE lessons learned in the first five years triangulate with emerging findings from the National Center scholarship as well as important work by Scott Reeves and his colleagues (F. Cerra, Pacala, Brandt, & Lutfiyya, 2015; Collaborative, 2014; Reeves et al., 2016). With findings and lessons learned from multiple projects, we can take what we know from different venues to educate senior leaders about what we are learning about models that work and the investments that are needed to support those on the ground in clinical settings, working to implement IPE in practice every day.

Two factors for success cut across all COEPCE cases: 1) center expertise—faculty and leadership and 2) logistics management – and the interaction between the two. It takes extraordinary facility leadership

commitment and support to address the chronic, daunting barriers that most do not have the appetite to address. For example, scheduling is key to executing the five initiatives. All sites have to work with diverse trainee schedules and integrate them with the clinic and curriculum schedules, while being careful not to affect direct patient care activities. In the National Center, we call this “the Nexus” – aligning interprofessional education with clinical practice redesign (Earnest & Brandt, 2014; Josiah Macy Jr. Foundation, 2013).

Second, sites described three CoEPCE program outcomes common to all the cases. Because these aligned tightly with other work in the IPE field, these findings are especially important:

The trainees from various health professions intentionally learn “with, from, and about” each other’s skillsets, roles, and responsibilities in practice, mirroring one of the four Interprofessional Education Collaborative (IPEC) four domains (Interprofessional Education Collaborative, 2017; Interprofessional Education Collaborative Expert Panel, 2011). Through experiencing the interfaces and tensions every day, all learned their own strengths and limitations and how to seek their input and new perspectives to benefit first and foremost, their patients.

All five sites reported increased integration of trainees into the PACT Team, creating a positive team dynamic. This finding is consistent with what National Center learned with the Patient-Centered Primary Care Collaborative interviews. We found that exemplary teaching sites that focus first on patients develop shared team understanding over time and rapid innovations introduced by any member of the team led to culture change (C. Cerra & Brandt, 2014).

Consistent with the IPEC competency domain and research in teamwork, trainees demonstrated increased communications, such as sharing of pertinent information or seeking a consult.

Finally, we commend the VA Office of Academic Affiliations and Veterans Health Administration senior leaders for their vision and investment in implementing national innovations sites through the U.S. Visible senior leadership engagement in IPE implementation and appropriate investment in resources are strong critical success factors (F. Cerra et al., 2015; Reeves et al., 2016). Without this strong and visible advocacy, IPE will fail –again, taking us down the long and winding road.

Barbara F. Brandt, PhD, Director  
National Center for Interprofessional Practice and Education  
University of Minnesota  
June 2017



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*In today's complex system of primary care*, it is increasingly important that the expertise and professional perspectives of all team members, along with the values and needs of Veterans, families, and caregivers are intentionally integrated to promote optimal outcomes for Veterans. Developing systems in which multiple professions learn, practice and communicate together is not a simple undertaking. In a nutshell, team members must continually improve their own practice, understand and be willing to seek out the contributions of other professionals and communicate and implement a plan that leads to safe and effective care for their patients. The VA Centers of Excellence in Primary Care Education<sup>1</sup> began educational activities in Academic Year 2011-2012 to improve primary care education, particularly to harmonize the education of clinician trainees with the emerging and future practice of primary care exemplified by patient centered care such as VA's Patient Aligned Care Team model for primary care delivery. This volume shares examples of educational strategies that have emerged from the first four academic years of the project, with each chapter being a case study from a participating site. Each case study reports on the implementation of a curricular element within their unique Center of Excellence. These case studies are intended to be of use to those interested in introducing curricular activities in accredited programs for health profession trainees that will lead to the advancement of interprofessional, Veteran/patient-centered primary care. These case studies also represent one component of the project's evaluation plan, designed by Annette Gardner, Ph.D. We have attempted to inform readers about the context of the institutions and readiness for change, the steps each program completed to design and develop strategies, gain leadership commitments, implement, and evaluate these interventions in the spirit of continuous improvement. Additional reports about the project have been published<sup>2</sup>, are in press, or are in the pipeline. Further, many of the references in this document have full-text available online. We have provided live links for ease of access to these additional resources.

In 2010, Veterans Health Administration (VA) began implementation of a version of the 'Patient Centered Medical Home' at all of the approximately 1000 points of care to serve over 5 unique million Veterans annually. VA called this new system of care Patient Aligned Care Teams (PACT)<sup>3</sup>. This transformation of VA's clinical system of care did not initially take into account VA's primary care settings in which health professions trainee education occurred. However, VA Office of Academic

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<sup>1</sup> [VA Centers of Excellence in Primary Care Education](#), U.S. Department of Veterans Affairs, Office of Academic Affiliations

<sup>2</sup> [Centers of Excellence in Primary Care Education/Interprofessional Academic PACT Publications and other scholarly work](#).

<sup>3</sup> [Patient Aligned Care Team \(PACT\) Home Page](#). U.S. Department of Veterans Affairs.

Affiliations (OAA)<sup>4</sup> recognized the need to concurrently transform VA's primary care teaching and learning environment to prepare future health professionals and leaders in VA and the community. It was important to address these educational needs for two reasons. First, the engagement of current trainees had to be taken into account as the clinics underwent PACT transformation. More strategically, the task was to optimize these transformed primary care clinics by developing practitioners across all relevant professions capable of entering the workforce ready to practice in these systems. This wasn't a simple issue: primary care education activities occurring in these transforming clinical systems had their own fragmentation challenges. First, there were challenges within professions as the inpatient/outpatient structure of health professions education often frustrated efforts to advance continuity of care between trainees and Veterans. Second, the primary care clinical educational experiences were too often failing to expose trainees to a positive primary care experience. In addition, there was seldom integration between the educational programs across professions in primary care, such as physicians, nurse practitioners, physician assistants, psychologists, pharmacists, social workers, and others. The result was that VA believed that the existing model of primary care education was failing to adequately prepare emerging health professionals for their practice in contemporary primary care settings, failing to adequately expose learners to the professional satisfaction possible in properly functioning primary care systems, and failing to adequately prepare them to participate in, lead, and improve the interprofessional teams which are a hallmark of effective modern primary care.

To address these challenges, VA funded the Centers of Excellence in Primary Care Education as a five-site demonstration project with a national coordinating center. The project required sites to develop curricula that would address the domains of shared decision-making, sustained relationships, interprofessional collaboration, and performance improvement (Table 1: Note from Editors). In addition, sites were expected to use instructional strategies that emphasized workplace learning techniques rather than classroom-based strategies. VA required selected sites to engage physician residents and nurse practitioner students for at least 30% of their total training time. Additionally, VA required co-leadership by physician and nurse-practitioner faculty co-directors. Other academic levels for these professions, and other professions were encouraged to be included.

Over 30 VA Medical Centers and their academic affiliates applied to participate. Ultimately, 5 sites were selected in Boise, Cleveland, San Francisco, Seattle, and West Haven. Over the first five academic years of the project nearly 1000 trainees of the above professions have participated in the program across these sites.

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<sup>4</sup> [Office of Academic Affiliations Home Page](#). U.S. Department of Veterans Affairs.

Though most of these initiatives took six months or less to design and implement initial versions, sites put a great deal of effort into development and improvement of complex curricula over time that integrate formal instruction, workplace learning and reflection. These emerging curricula are also intricate because some elements are intended to address the learning needs specific to a participating profession while other curricular elements are intended to facilitate interprofessional learning and practice. These case studies provide examples of a specific educational intervention that was part of the overall curriculum and either was itself successful or was felt to best illustrate the development process for interprofessional primary care instruction. The five sites participating in the Centers of Excellence in Primary Care project are modeling what VA has come to call interprofessional Academic PACT (iAPACT), based on principles described in a VA position paper <sup>5</sup> developed to guide system-wide transformation in primary care education. Interprofessional Academic PACTs (iAPACTs) are Patient Aligned Care Teams that have two or more health professions trainees collaboratively engaged in learning, working and teaching. This is and are the preferred model for VA Academic Primary Care PACTs. In 2016, two additional sites were competitively selected to join the project as the effort advances to the next stage.

We have chosen the case study approach to describe these activities in order to provide the reader with the broadest possible base of information about these interventions. The usual format of research manuscripts can minimize full descriptions of unique local opportunities and barriers as these are not generalizable factors- indeed such factors may be specified as 'limitations' to the report. From an implementation perspective, we believe it is vital to describe local factors where the innovation was adopted, as those who wish to reproduce these activities will likely want to compare their own current state with the starting state of the site during the intervention design.

The educational interventions selected for descriptions in this volume demonstrate their genesis in the curricular domains of the project. Readers will note that each example emphasizes workplace-learning <sup>6</sup> strategies to achieve at least one of the four curricular domains of shared decision-making, sustained relationships, performance improvement, and interprofessional practice. We recommend that readers

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<sup>5</sup> VA Whitepaper: "[Academic PACT: A blueprint for primary care redesign in academic practice settings](#)" (October 2013)

<sup>6</sup> Workplace learning in VA is contains an element of reflective practice and is learning "...that takes place as part of everyday thinking and acting in authentic clinical care delivery settings." "Academic PACTs will improve quality of Veterans care experience by enhancing workplace learning for all team members, patients, clinician, staff and students alike." (VA Whitepaper, 2013)



pay close attention to the development process for the interventions, noting the interprofessional faculty engagement in activity development, delivery, and evaluation. We would also suggest that readers note that these case studies are principally demonstrating innovations in educational processes and strategies on topics, and not a syllabus for instruction on points of clinical knowledge or skill. For example, San Francisco's example of the improved interprofessional academic PACT huddle describes how to use regular team meetings to support education and patient care, while Seattle's example engages an interprofessional teaching team to strengthen trainee knowledge and improve the skillset of clinical faculty using proactive population health strategies. Cleveland's descriptions of trainee dyads illustrate how synergies can be created in interprofessional learning and practice. Boise's and West Haven's cases provide examples of intricate blending of formal instruction with supervised clinical practice to accomplish the dual goals of learning, and improving patient care.

## **The Editors**

**Stuart Gilman, MD, MPH, National Director**

**and**






**Laural Traylor, MSW, National Program Manager**

VA Office of Academic Affiliations,  
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Centers of Excellence in Primary Care Education

## PROGRAM EDUCATIONAL DOMAINS

*The Centers of Excellence in Primary Care Education enterprise efforts employ four basic concepts within teaching and learning in primary care clinical environments in the Department of Veterans Affairs.*

Table 1: Note from Editors

<p><b>CoEPCE Core Domains</b></p> <p><b>Shared Decision-Making (SDM):</b> Care is aligned with the values, preferences and cultural perspectives of the patient. Curricula focus is on communication skills necessary to promote patient's self-efficacy.</p> <p><b>Sustained Relationships (SR):</b> Care is designated to promote continuity of care; curricula focus on longitudinal learning relationships.</p> <p><b>Interprofessional Collaboration (IPC):</b> Care is team based, efficient and coordinated, curricula focus is on developing trustful, collaborative relationships.</p> <p><b>Performance Improvement (PI):</b> Care is designed to optimize the health of populations; curricula focus on using the methodology of continuous improvement in redesigning care to achieve quality outcomes.</p>	     <table><tr><td data-bbox="873 940 1166 1096">Shared Decision Making</td><td data-bbox="1188 940 1481 1096">Sustained Relationships</td></tr><tr><td data-bbox="873 1402 1166 1558">Interprofessional Collaboration</td><td data-bbox="1188 1402 1481 1558">Performance Improvement</td></tr></table>	Shared Decision Making	Sustained Relationships	Interprofessional Collaboration	Performance Improvement
Shared Decision Making	Sustained Relationships				
Interprofessional Collaboration	Performance Improvement				

## ACKNOWLEDGEMENTS

### **Annette Gardner, PhD, MPH**

The editors gratefully recognize the many contributions of Dr. Annette Gardner in leading the vision and development of these case studies.

### **Special thanks to Barbara Brandt, EdM, PhD**

Director of the National Center for Interprofessional Practice and Education (NEXUS)  
We salute Dr. Brandt for steadfast support, inspiration and encouragement of interprofessional practice and education, and through the elevation of this compendium by way of NEXUS coordinated peer review and community dissemination.

**Peer Review:** The NEXUS developed the peer review strategy for this anthology to assist VA in creating a practical tool for both VA and the community. Individuals selected for this review have diverse perspectives and expertise in interprofessional education and primary care and reviewed this compendium in draft form. Review comments and the draft manuscript remain confidential to protect the integrity of the process. Although the reviewers listed below provided constructive comments and suggestions, they did not see the final draft of the Case Studies before its release.

We wish to thank the following peer reviewers for their support and contribution:

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Sidney Kimmel Medical College at Thomas Jefferson University

## ACKNOWLEDGEMENT CONTINUED

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Boise State University School of Nursing  
Breen School of Nursing at Ursuline College  
California State University East Bay School of Social Work  
California State University Long Beach School of Social Work  
Case Western Reserve University School of Medicine  
Case Western Reserve University, Frances Payne Bolton School of Nursing  
Case Western University, School of Applied Social Sciences Social Work Program  
Cleveland Clinic Foundation  
Golden Gate Dietetic Internship  
Idaho State University College of Pharmacy  
Fairfield University School of Nursing  
Gonzaga University School of Nursing & Human Physiology  
Northwest Nazarene University  
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San Francisco State University School of Social Work  
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University of Washington School of Public Health Social Work Program  
Yale University School of Medicine, Department of Internal Medicine and Psychiatry  
Yale University School of Nursing

### VA Sponsored Programs

VA Office of Academic Affiliations supports post-doctoral clinical residencies for pharmacists, psychologists and other professions. These programs are coordinated at local medical centers with the program education director or designee in collaboration with VA's profession specific national offices.

## ACKNOWLEDGEMENTS CONTINUED

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## ACKNOWLEDGEMENTS CONTINUED

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### ***Special thanks***

***to all the many hundreds of faculty and staff of the  
Centers of Excellence in Primary Care Education  
for tireless contributions to this critical work.***



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# CASE STUDY #1: PACT ICU MODEL-INTERPROFESSIONAL CASE CONFERENCES FOR HIGH RISK/HIGH NEED PATIENTS

*Boise VA Center of Excellence in Primary Care Education (CoEPCE)  
Interprofessional Academic Patient Aligned Care Team (iAPACT)*

**Prepared by:** Annette L. Gardner, PhD, MPH, with Boise VA CoEPCE: William G. Weppner, MD, MPH; Janet Willis, BSN, RN; Jared Bernotski, BA.

**Academic Partners:** Boise State University School of Nursing; Gonzaga University School of Nursing; University of Washington School of Medicine; and Idaho State University School of Pharmacy

## SURVEY LINK

**Key Theme of the Innovation:** Practice-based trainee/faculty/staff didactics and workplace collaborative care opportunity. Curriculum includes pro-active identification of high risk, high need Veteran/patients on trainee panels as the foundation for bi-weekly case conferences and interprofessional team-based care planning activity.

## Goals:

- Improve quality and health of complex/high-risk Veterans
- Advance trainee interprofessional and clinical/patient centered care competency
- Enhance staff roles and team coordination and function
- Optimize system resources

**Trainees:** Nurse practitioner students and residents, internal medicine physician residents and students, pharmacy residents and students, psychology interns and postdoctoral fellows, nursing students.

**Faculty and/or Staff:** Internal medicine physicians, nurse practitioners, nurse care managers, pharmacists, psychologists, social workers, chaplaincy and ethics service.



Boise CoEPCE PACT ICU Session

## **SUMMARY**

This case study describes Boise Center of Excellence in Primary Care Education (CoEPCE, CoE or Center) Patient Aligned Care Team Interprofessional Care Update (PACT ICU), a bi-weekly, interprofessional patient case conference for intensive management of high-risk, high-needs patients. The PACT ICU is an interprofessional Academic PACT (iAPACT). VA defines an iAPACT as PACTs (or Patient Aligned Care Teams) that have at least two or more fields of health professions trainees engaged in learning, working and teaching. This is the preferred model for VA Academic Primary Care PACTs.

On a bi-weekly basis, physician and nurse practitioner trainees, Center faculty, and clinic staff develop a proactive, team-based, interprofessional care plan to address high-risk patients' unmet chronic care needs. In addition to training learners, established providers and staff across professions to work together to provide patient-centered care, this innovative, interprofessional education activity strengthens clinic communications and supports sustained relationships with providers and patients.

## **INTRODUCTION**

In 2011, VA's Office of Academic Affiliations (OAA) selected five VA Medical Centers to establish Centers of Excellence in Primary Care Education (CoEPCE). VA's New Models of Care initiative, through five Centers of Excellence (CoE's) (Boise, Cleveland, San Francisco, Seattle and West Haven) are developing, implementing, and evaluating curricula and best practices to prepare physician residents and students, advanced practice nurse and undergraduate nursing students, and other professions of health trainees (such as pharmacy, social work, psychology, physician assistants, etc.) for effective primary care practice in the 21st Century.

For example, the Boise CoE developed and implemented a practice-based learning model. Nurse practitioner students and residents, physician residents, pharmacy residents, psychology interns, and psychology postdoctoral fellows participate in a comprehensive curriculum and practice together for one to three years. The goal is to produce providers who are able to lead and practice health care in patient-centered primary care and rural care environments. All core curricula are interprofessionally coauthored and co-taught. (Rugen, K.W., et. al, 2013).

## **METHODS**

In 2015, evaluators from VA's Office of Academic Affiliations reviewed background documents and conducted open-ended interviews with 10 CoE staff, participating trainees, VA faculty, VA facility leadership, and affiliate faculty. In response to questions focused on their experiences, informants described lessons learned, challenges encountered, and benefits for participants, Veterans, and the VA. Using a qualitative and quantitative approach, this case study draws on those interviews, surveys of PACT ICU participants, and analysis of presented patients to examine PACT ICU outcomes.

**THE ISSUE: LACK OF CLINICAL APPROACHES TO INTERPROFESSIONAL EDUCATION AND CARE**

A key CoEPCE program aim is to create more clinical opportunities for CoE trainees from a variety of professions to work together as a team in ways that anticipate and address the care needs of Veterans. This emphasis on workplace learning is needed since most current healthcare professional education programs lack settings where trainees from different professions can learn and work together with their clinic partners to provide care for patients. With the emphasis on patient-centered medical homes (PCMH) and team-based care in the Affordable Care Act, there is an imperative to develop new training models that address this gap in the preparation of future health professionals. Along with this imperative, clinicians are increasingly required to optimize the health of complex patients, who consequently require a multi-disciplinary approach to care, particularly high-risk, high-needs patients inappropriately using services such as frequent ER use.

**A Typical PACT ICU Case Conference** is a bi-weekly, one hour case conference that focuses on high-risk patients, that is attended by CoE trainees from multiple professions (RN, NP, MD, PsyD, PhD, PharmD), CoE faculty, and Silver Team clinic staff (RN Care Manager, LPN, Social Work). One Center faculty member facilitates the case conference and is responsible for applying the EFACT model and facilitating an interprofessional discussion, including the development of an interprofessional care plan. Two trainees—a physician and/or nurse practitioner—present a high risk patient from his or her panel selected from the top five highest-risk patients as determined by the Care Assessment Needs (CAN) registry. The trainees prepare prior to the presentation and complete a chart review and may consult CoE faculty. They provide a summary of the patient and his or her health issues. The other trainees from various professions provide input from their perspective, such as the dynamic between the provider and the patient and other VA resources, but do not present. Patient data from the electronic medical record is displayed on a large screen. The group performs an evidence-based gap analysis of the patient's care needs, how they can be addressed, and how to align patient values with obtaining care. All participants are encouraged to use a standardized worksheet to identify strengths, needs, and gaps in care. Each profession contributes recommendations to work towards improvement as an interprofessional team. At the end of the case conference, the presenting trainee summarizes the shared care plan, identifying specific action items for each member of the team, such as follow-up tasks for the RN Care Manager. In addition to physician or nurse practitioner interventions, action items commonly address a full range of biopsychosocial needs that often include pharmacy, social work and behavioral health referrals, coordinated future visits with warm hand-offs, nurse care management coordination, and non-traditional forms of care provision (e.g. telephone visits, home telemonitoring, and secure messaging). CoE trainees are mentored before they see a patient so they can tap in to the expertise and experience of their PACT team, which is particularly helpful for difficult patients. PACT ICU normalizes this support and provides psychological support and options in considering a treatment plan for what may be perceived as a dense problem. Ultimately, PACT ICU is designed to improve proactive and coordinated care, with the goal of minimizing emergency room and urgent care visits and maximizing continuity with the team as part of PACT-based care.

**EFACT Model = Elicit the narrative of illness, Facilitate a group meeting, Evidence-based gap analysis, Care plan and Track Changes.**



## **PROMISING SOLUTION: PACT ICU—A TEAM APPROACH TO ADDRESSING THE COMPLEX NEEDS OF VETERANS**

In 2010, the Boise VA worked towards developing such shared understanding by phasing in Patient-Aligned Care Teams (PACTs), the VA-mandated version of the Patient Centered Medical Home, which consists of a Primary Care Provider (physician or nurse practitioner), an RN Care Manager, a LVN (licensed vocational nurse), and an MSA (medical support assistant). Research shows that when trainees develop a shared understanding of each other's skillsets, care procedures, and values, patient care is improved (Billett 2013). To facilitate a move towards a care model featuring this shared understanding, the Boise CoE developed an interprofessional, bi-weekly case conference for the highest risk patients (who are also high utilizers) in the trainee panels. Patient Aligned Care Team Interprofessional Care Update (PACT ICU) focuses appropriate resources on patients with the highest need in clinic (e.g., high clinic/ER utilization, chronic pain, multiple co-morbidities or psychosocial impediments to care). PACT ICU also serves as a venue in which trainees and supervisors from different professions (internal medicine physicians, nurse practitioners, nurse care manager, pharmacists, psychologists, social workers, chaplaincy and ethics service) use a patient-centered framework to collaborate on these specific patient cases. PACT ICU is easily applied to a range of health conditions, such as diabetes, mental and behavioral health, lack of social support, and delivery system issues, such as emergency room (ER) utilization. The goals of PACT ICU are to:

- Improve the quality and satisfaction of patient care for high-risk patients;
- Encourage appropriate utilization of health care resources by prioritizing continuity with the PACT team; and
- Enhance interprofessional PACT team function, decreasing provider and staff stress in primary care.

## **PLANNING AND IMPLEMENTATION**

*"I think it represents a very high level of learning. I'm not just giving you the facts of what happens on the team and asking you to memorize them and get them back to me. And I'm also not asking you to apply them in the hypothetical situation so much. I'm asking you to live them out in the PACT ICU. I'm asking you to take that information, synthesize it and then make it live—I'm giving you a great need-to-know moment when you're on the PACT ICU. And I think that it's an incredible level of learning. It's so much more like practice than it is like for instance, reading it in a book."*

*Affiliate Representative*

In January 2013, Boise VA and the Caldwell community outpatient clinic (CBOC) implemented PACT ICU. Other non-teaching clinics followed later in the year. Planning and executing PACT ICU took approximately 10 hours of CoE staff time and required no change in Boise VA policy. Program leadership approval was necessary for participation of CoE residents and postdocs. Service-line leadership support was required to protect clinic staff time (nurse care manager, social workers,

chaplancy, and ethics service). At the Caldwell CBOC, the Section Chief granted approval for the program, and it took about one month to initiate a similar version of PACT ICU.

**Table 1: CoEPCE Core Domains**

**Shared Decision-Making (SDM):** Care is aligned with the values, preferences and cultural perspectives of the patient. Curricula focus is on communication skills necessary to promote patient's self-efficacy.

**Sustained Relationships (SR):** Care is designated to promote continuity of care; curricula focus on longitudinal learning relationships.

**Interprofessional Collaboration (IPC):** Care is team based, efficient and coordinated, curricula focus is on developing trustful, collaborative relationships.

**Performance Improvement (PI):** Care is designed to optimize the health of populations; curricula focus on using the methodology of continuous improvement in redesigning care to achieve quality outcomes.

### ***Curriculum***

PACT ICU is a workplace clinical activity with roots in the case conference model, specifically the EFECT<sup>7</sup> model (Bitton, et al., 2016). PACT ICU emphasizes a patient-centered approach to developing care plans. Staff review the five highest risk patients, who are identified by the VA Care Assessment Need (CAN)<sup>8</sup> registry. Physician and nurse practitioner residents select one of the five patients to discuss in PACT ICU, while the remaining four serve as case-control comparisons to examine long-term patient outcomes. All trainees, faculty, and staff are provided patient data that can be discussed on a VA-approved secure website.

PACT ICU combines didactic teaching with workplace learning. For example, the patient's medical issues may lead to a formal presentation about a topic such as secondary stroke medication prophylaxis. The workplace learning occurs as the trainees observe and participate in the decision making towards a treatment plan. Interprofessional interactions are role-modeled by clinical faculty and staff during these discussions, and the result impact the patients care. PACT ICU embodies the four core domains (Table 1) that shape the CoEPCE curriculum: Interprofessional Collaboration (IPC), Performance Improvement (PI), Sustained Relationships (SR), and Shared Decision Making (SDM). First, trainees learn IPC concepts, such as role clarification and how to work with an interprofessional team.

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<sup>7</sup> EFECT Model: Elicit the narrative of illness, Facilitate a group meeting, Evidence-based gap analysis, Care plan, and Track changes)

<sup>8</sup> VA CAN: Analytic tool available throughout VA, which estimates patients' risk of mortality or hospitalization in the next 90 days.

Second, CoE trainees work with data from the CAN registry to develop a care plan that includes a PI objective. Third, the huddle creates SR among team members while improving the quality of the clinic experience, as well as SR with patients through increased continuity of care. Last, PACT ICU strengthens communications, understanding of team roles, and system resources to support SDM.

There have been some changes to the PACT ICU model over time. Initially, conferences took place on a weekly basis, to build momentum among the team and to normalize processes. After approximately two years, this decreased to every other week, in order to reduce time burden. Additionally, the CoE has strengthened the “tracking changes” component of the EFACT model - trainees now present a five-minute update on the last patient they presented at the prior PACT ICU case conference. Most recently, psychology post-doctoral candidates have instituted a pre-conference call with the patients to further improve the teams understanding of the patients’ perspective and narrative.

### **Faculty Roles and Development**

*“I think the hidden curriculum in PACT ICU is kind of learning how to speak to a team that is coming from many perspectives, and I think that translates into the clinic.”*

*CoE Faculty*

CoE faculty who facilitate the PACT ICU participate in faculty development concerning facilitation of interprofessional meetings. All faculty are expected to role model collaborative behavior and mentor trainees on the cases they present.

### **Resources**

Space is an important resource in an interprofessional academic PACT. PACT ICU requires a room large enough to accommodate at least 12 people. One staff member is required to review patient cases prior to the case conferences (usually about one hour of preparation per case conference), while another staff person creates and shares an Excel spreadsheet stored with VA-approved information security with data fields to include the site, PACT ICU date, patient identifier, the CAN score and a checkbox for whether the patient was selected or part of a control group). Logistical support is required for reserving the room and sending information to presenters. A clinic-based registered nurse (RN) with training in interprofessional care case management uses a web-based schedule to facilitate selection and review of patients. RN care managers can use a secure management tool to track patient care and outreach. An example of the format of this locally developed website and tools can be seen at [Boise VA CoEPCE Courses](#) (Contact staff for access).

The nurse care manager also needs to be available to attend the PACT ICU case conferences. The CoE has built a website to share and standardize resources, such as an up-to-date presenter schedule, PACT ICU worksheet and provider questionnaire <http://boisevacoe.org/courses/course/view.php?id=29>. (Contact staff for access.) For the initial evaluation of impact, PACT ICU utilized staff data support in the form of a data manager and biostatistician to identify, collect, and analyze data. While optional, this was helpful in refining the approach and demonstrating the impact of the project. Other resource-related requirements for exporting PACT ICU include:

- Staff members, usually RN care managers, who coordinate meetings with participants and identify appropriate patients using a registry such as CAN
- Meeting facilitators who enforce use of the EFACT model and interprofessional participation to ensure that the interprofessional care plan is carried out by the presenting provider; and
- Interprofessional trainees and faculty, who participate in PACT ICU and complete surveys after the first conference.

### ***Monitoring and Assessment***

CoE staff are triangulating the evaluation of PACT ICU with participant self-evaluation, consultation referral patterns, and utilization statistics (composite ER, episodic care, hospitalization). The CoE is continuing to analyze utilization data. Pharmacy faculty are exploring the use polypharmacy registries and psychology will use registries of poor psychosocial function.

### ***Partnerships***

Beyond support and engagement from VA CoEPCE and affiliate faculty, PACT ICU has greatly benefited from partnerships with VA facility department and CBOC leadership. The CoEPCE co-director and faculty are in facility committees, such as the PACT Strategic Planning Committee.

The academic affiliates are integral partners who assist with nurse practitioner student and resident recruitment as well as participate in the planning and refinement of CoEPCE components. PACT ICU supports their mandate to encourage interprofessional teamwork. Faculty members from Gonzaga University (nurse practitioner affiliate) were involved in the initial discussion on PACT ICU and consider it a *“learning laboratory where the professions work together with knotty problems, with challenging problems.”* (Gonzaga Affiliate Representative). Gonzaga CoEPCE nurse practitioner trainees are asked to talk about their PACT ICU experience—its strengths, weaknesses and challenges—to other Gonzaga students who don’t have exposure to the team experience.

### **CHALLENGES AND SOLUTIONS**

The demand for direct patient care puts pressure on indirect patient care approaches like PACT ICU, which is a time intensive process with high impact on only a small number of patients. The argument for deploying strategies such as PACT ICU is that managing chronic conditions and encouraging appropriate use of services will improve outcomes for the highest risk patients and save important system resources

in the long-run, but in the short-term, a strong case must be made for the diversion of resources from usual clinic flow, particularly securing recurring blocks of provider time and clinic staff members. In addition, issues around team communication and understanding of appropriate team-based care can overflow to complex patients not presented in the PACT ICU conference. Providing a facilitated interprofessional venue to discuss how to appropriately coordinate care improves the participation and perceived value of different team members. This has led to improved engagement of the team for patients discussed in the PACT ICU, as well as in general care within the participating clinic. In the current iteration, the VA does not see a workload benefit, and participants do not get encounter credit.

Other challenges include logistical challenges of finding appropriate patients and distributing sensitive patient information among the team. Additionally, PACT ICU has to wrestle with staffing shortages and episodic participation by some professions which are chronically understaffed. We have addressed many of these problems with the following solutions. First, achieving buy-in from leadership, who allow time for participation in clinic staffs' schedules, has been crucial. Second, gaining buy-in from participants, who have committed to participation in PACT ICU, has been vital. For example, we require each participant to recruit a substitute in case of a conflict.

*"It provides a space, you know, outside of clinic where everyone can sit down and really hear what the other professions have to say and offer, and I think there is a level of respect and appreciation that comes out of PACT ICU for all the professions because it's where the trainees realize a lot that you don't have to handle this really complex patient alone, and really you shouldn't be, and that the team can help."*

*CoE Faculty*

## **FACTORS FOR SUCCESS**

A realization of the value of coordinating care for high risk/high need patients is important for the success of a program. The commitment from the Boise VA facility, primary care clinic leadership and affiliated training programs to support staff and trainee participation has also been critical. Additionally, VA facility leadership commitment to ongoing improvements to PACT implementation was a key facilitating factor. Co-localization of trainees and clinic staff on the academic PACT Silver Team facilitates communications in between PACT ICU case conferences, while also supporting team dynamics and sustained relationships with patients presented in PACT ICU. Also, since many of these patients can and will typically seek care as part of this shared clinic, many of the staff and trainees already have "skin in the game" to motivate coordinated participation in a proactive manner. Last, this model has been successfully replicated and sustained at four of the five CoEPCE sites. As another example, the Caldwell clinic PACT ICU has been up and running for two years, and two other non-academic clinics have piloted PACT ICU managed care conferences.

## **ACCOMPLISHMENTS AND BENEFITS**

There is evidence that PACT ICU is achieving the desirable goals of both improving trainee learning and patient outcomes. Trainees are using team skills to provide patient-centered care; trainees are strengthening their overall clinical skills by learning how to improve their responses to high-risk patients. There is also evidence of an increase in interprofessional warm hand-offs within the clinic.

### ***Interprofessional Educational Capacity***

Unlike a traditional didactic with classroom case conferences on interprofessional collaboration, PACT ICU is an opportunity for health care professionals to work together to provide care in clinic. Moreover, co-location of diverse trainee and faculty professions during the case conferences better prepares trainees to work with other professions and supports all participants to work and communicate as a team.

*“One of the biggest advantages to doing this is that the trainees from the different disciplines are getting to know each other, getting comfortable talking with each other and the also knowing—getting a much better perspective of what each other’s roles are.”*

*CoE Staff*

### **Participant Knowledge, Attitudes, Skills, and Competencies**

CoE staff have assessed PACT ICU educational outcomes before and after attendance in PACT ICU. On average, trainees (n=30) said they found the PACT ICU case conferences to be “very helpful” (at the top of the Likert scale) in developing treatment plans. Second, trainees reported increased understanding of the elements that should be considered in developing a care plan and the variety of roles played by team members in providing care to difficult or complex patients (Table 2).

**Table 2.** PACT ICU Evaluation Summary (Weppner, et al.)

Trainee survey question pre and post-involvement in a PACT ICU session (n=30)	Pre	Post	P-value
“My understanding of all the elements (biological, social, psychological) that must be considered in the patient’s care” (1-5)	2.9	4.5	p<0.01
“My understanding of the roles that each of the team can play in hard to manage patients like this one.” (1-5)	3.0	4.4	p<0.01

### **Participants’ Interprofessional Collaboration (IPC)**

*“I guess I didn’t really know all the resources I had available until I went to PACT ICU, and I’ve never really worked on a collaborative approach like that with so many different disciplines even the physicians and nurse practitioners and nurses in the room had different levels of experience.”*

*CoE Nurse Practitioner Resident Trainee*

Teambuilding and co-locating trainees, faculty and clinic staff from different professions is a primary focus of PACT ICU. PACT ICU case conferences are intentionally designed to break down silos and foster a team approach to care.

Trainees learn how the team works and the ways other professionals can help them take care of the patient. For example, trainees learn early about the contributions and expertise that the pharmacist and psychologist offer in terms of their scope of practice and referral opportunities. Additionally, the RN nurse care manager increases the integration with the PACT clinical team by sharing pertinent information on individual patients. Based on recent trainee survey findings, the CoE has observed a positive change in the team dynamic and trainee ability to interface between professions. PACT ICU participants were more likely to make referrals to other members within the PACT team, such as a warm hand-off during a clinic appointment, while they were less likely to seek a consult outside the team (Weppner, W.G., et. al, 2016)

*“...the provider will come back with another patient shortly after and ask me to do a medication reconciliation, even if it’s a separate patient the PACT ICU still has reminded them of what pharmacy can do, which for me is a huge accomplishment of what PACT ICU achieves.”*

*CoE Pharmacy Trainee*

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PACT ICU is an opportunity for a trainee to increase clinical expertise. It provides exposure to a variety of patients and their care needs and serves as an opportunity to present a high-risk, challenging patient to colleagues of various professions. As of January 2016, 48 physician resident and nurse practitioner residents have presented complex patient cases.

In addition, a structured forum for discussing patients and their care options strengthens team clinical performance, which supports people to work to the full scope of their practice. Trainees learn and apply team skills, such as communication and the warm handoff<sup>9</sup>, which can be used in other clinical settings. An interprofessional care plan that is delineated during the meeting supports the trainee and is carried out with help from consultants as needed. These consultants often facilitate plans for a co-visit or warm handoff at the next clinic visit, a call from the RN care manager, a virtual clinic appointment, or other non-traditional visits. The clinic staff can get information from providers about patient’s plan of care, and providers get a more complete picture of a patient’s situation (e.g. history, communications, and life-style factors). In addition, surveys of PACT ICU participants suggest the curriculum’s effectiveness at encouraging use of PACT principles within the clinic team and improving appropriate referrals to other members of the PACT team, such as pharmacy and behavioral health.

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<sup>9</sup> A warm handoff is often described as an intervention in which: “a clinician directly introduces a patient to another clinician at the time of the patient’s visit, and often a brief encounter between the patient and the health care professional occurs” (Cohen, et al., 2015).



### **Participants' Satisfaction with Interventions**

*"They walk away with a clear 'Here's what I'm going to do for this patient.'"*

*CBOC Representative*

Patients presented at PACT ICU can be particularly challenging, so there may be a psychological benefit to working with a team to develop a new care plan. Providers who feel they are overwhelmed and have exhausted every option step back, get input and look at the patient in a new light.

*"But definitely in health care, we can't be solo in our delivery model anymore. Patients expect more. Staff can't do it alone. And so, I think from the collaborative approach in knowing there are resources and if I just have to do this part and there's other people to do other parts of the health care delivery, then I think that lightens the load of the specific individual provider, as well as team members."*

*Caldwell CBOC Representative*

### **CoEPCE Function**

PACT ICU is flexible and has been adapted to different ambulatory care settings within the Boise VA. Currently, PACT ICU case conferences take place at the VA facility and two VA community-based outpatient clinics (CBOC) in Caldwell, Idaho and more recently at a smaller CBOC in Burns, Oregon. The PACT ICU structure is slightly different in the two clinic settings since the VA primary care clinic has different resources to draw upon, such as hospital and specialty services. The Caldwell CBOC was unable to protect time for providers, so it holds a monthly PACT ICU case conference.

PACT ICU is continuing under Stage 2 of the CoEPCE program, which is described in the Future section. In addition to continuing expansion in other non-academic PACT clinics and collaboration with other CoEPCE sites, work is underway to disseminate generalizable principles for interprofessional education, as well as exporting the model for implementation in non-VA settings.

### **Primary Care Delivery System**

PACT ICU is part of a system wide transformation to provide team-based, patient-centered care to Veterans. The staffs' efforts to provide a team-based, real patient learning experience have the potential to hasten this transformation while improving relationships and quality of care.

### **Primary Care Services**

PACT ICU has the potential to create efficiencies in busy clinic settings. It strengthens communication between providers and is an opportunity to touch base on the patient, delegate care, and keep track of high-risk patients who might otherwise receive attention only when having an acute problem. Nurses gain a deeper understanding of the patients presented at PACT ICU.

*"...we're all coming together for this one patient, that at the end of the day it's this one patient who's the center of our mind, we're all just there to help, which is awesome for me."*

*CoE Pharmacy Trainee*

PACT ICU's benefits to primary care are that it leverages and builds on existing PACT resources in an achievable and sustainable manner. CoE trainees, who are part of the Silver Team, tap into the information that Team nurses gain from checking in with these high-risk patients biweekly. Moreover, the integration with the Silver Team improves continuity, which helps enhance a patient's level of trust. The relationship strengthened between primary care and behavioral health at the Caldwell CBOC, providing improved patient access and increased professional sharing.

### **Patient Outcomes**

*"You know, the nurse practitioner may say, well, 'this is a whole patient, this isn't a patient that just has hypertension. They do fit into the age group of hypertension, this into the population, it is the most likely diagnosis, but have you thought about the patient being homeless...?'"*

*Affiliate Representative*

PACT ICU provides a forum to invite perspectives beyond the primary care provider's. This feature results in a more robust treatment plan than might be developed by individual providers, who might not have time to consider options that are outside their scope of practice. Formulating an enriched care plan, informed by multiple professions has the potential to improve utilization and provide better care.

PACT ICU has presented 117 patients as of May 2015. While clinical outcomes data are difficult to collect, the CoE has data on utilization differences on all patients presented at the PACT ICU case conferences. This includes 4 control patients from the same provider, with similarly high risk based on CAN scores at the time of selection. A single control patient is selected based on gender, closest age and CAN score; this serves as a comparator for subsequent utilization.

*"What makes it really stick is when it's a real patient and you're actually truly applying the information and what you're saying could have a true impact."*

*CoE Pharmacy Resident*

Data from the first two years of this study demonstrate that although PACT ICU did not show an increased number of visits with the PCP compared to a high-risk control group. However, there was an increase in contacts with PACT team members including behavioral health, clinical pharmacists, and nurse care management, persisting up to 6 months following the PACT ICU presentation. This was associated with an improvement in chronic disease quality metrics related to diabetes and hypertension, as well statistically significantly decreased hospitalizations and a trend towards decreased ER visits. These findings persisted when compared to controls in the PCP's panel with similar CAN scores, making "regression to the mean" often seen in these studies much less likely.

Analysis of early patients in the project suggests the possibility of improved glycemic control in diabetic patients and improved blood pressure control in hypertensive patients presented at the PACT ICU, compared to non-PACT ICU patients. Buu, J., Fisher, A., Weppner, W., Mason, B. (2016).

*“I think that the big thing is everyone is kind of more aware of the patient. And I think we work together as a team to help that patient. That’s what I’ve enjoyed of it, getting to know the different, you know, like what psychology can do for them, what pharmacy can do for them, and just getting different perspectives to help the patient meet their goals. So it definitely spills into the team.”*

*RN Care Manager*

Another potential benefit includes better team-based coordination. Because the patient now has a team focusing on care, this new dynamic results in improving outreach, identifying patients who could receive care by a telephone and better preparing team members to establish rapport when the patient calls or comes in for a visit. Although the numbers are too small for statistical inference, there is a perception at the Caldwell CBOC that there has been a reduction in patients’ low-acuity use of ER visits.

## **THE FUTURE**

Under Stage 2 of the CoEPCE program, a multi-site trial of PACT ICU is underway to better understand which elements are critical to success, with the goal of facilitating broader exportability. The multi-site PACT ICU trial will focus on three intertwined elements: structure, delivery, and evaluation. Using local implementation and the multi-site trial, the most effective practices will be documented as part of an implementation kit. The goal of the implementation kit is to facilitate step-by-step implementation of PACT ICU to other settings beyond the multi-site study. Since PACT ICU’s open-ended structure enables accommodating different professions and/or specialties beyond the Boise model’s participants, it could be easily adapted to potentially support a variety of implementations elsewhere.

Another opportunity for expansion is increased patient involvement. Currently, PACT ICU patients have the opportunity to review and ask questions about their multidisciplinary care plans before starting. Patients know they have a team working on their behalf but there are opportunities for more follow-up, including presenting patients who are seen by other providers outside the CoE, such as the attending physician who may also have challenging patients.

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## RESOURCES

National VA CoEPCE Websites: <http://www.va.gov/oaa/coepce/>

National VA APACT Website, Publications, Executive Briefing Videos: [Academic PACT Videos](#)

Boise CoEPCE web and video: <http://www.va.gov/oaa/coepce/boise.asp>

PACT ICU Course materials: <http://boisevacoe.org/courses/course/view.php?id=29>

(Guest password required – contact staff for access) or <http://boisevacoe.org/products/pact-icu/>

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## CASE STUDY #2: THE DYAD MODEL

### *Louis Stokes Cleveland VA Medical Center: Center of Excellence in Primary Care Education (CoEPCE) Interprofessional Academic Patient Aligned Care Team (iAPACT)*

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**Academic Partners:** Case Western Reserve School of Medicine, Francis Payne Bolton School of Nursing at Case Western Reserve University, Cleveland Clinic Foundation, The Breen School of Nursing at Ursuline College

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**Key Theme of the Innovation:** This workplace learning strategy employs practice partnerships between students and residents. Nurse practitioner students and advanced physician residents are highlighted in this model.

**Goals:**

- Activate a dyad model/interprofessional clinical practice pair
- Provide collaborative patient care
- Enhance interprofessional teamwork and collaboration
- Focus on trainee developmental needs and levels of experience
- Improve resident teaching skills and clinical practice

**Trainees:** Students and residents

**Faculty and/or Staff:** Clinic preceptors



Cleveland TOPC/CoEPCE Dyad Microteaching Session

## **SUMMARY**

This case study describes the Cleveland Center of Excellence in Primary Care Education dyad model, which combines interprofessional education, clinical or workplace learning, and resident as teacher in the ambulatory setting. For one-half day a week, a nurse practitioner student and physician resident work collaboratively in a primary care setting to provide care to Veterans at the Louis Stokes Cleveland Department of Veterans Affairs. In addition to enhancing teamwork skills, this novel interprofessional education activity has helped increase nurse practitioner students' clinical competence, strengthened physician resident teaching skills and efficacy, and enhanced delivery of team-based patient-centered care.

## **INTRODUCTION**

In 2011, five VA Medical Centers were selected by VA's Office of Academic Affiliations (OAA) to establish Centers of Excellence in Primary Care Education (CoEPCE or CoE). As part of VA's New Models of Care initiative, the five CoE's (Boise, Cleveland, San Francisco, Seattle and West Haven) are using VA primary care settings to develop and test innovative approaches to prepare physician residents and students, advanced practice nurses, undergraduate nursing students, and other health professions trainees (such as pharmacy, social work, psychology, physician assistants, etc.) for primary care practice in the 21st Century. The CoEPCE's are developing, implementing, and evaluating curricula to prepare learners from relevant professions to practice in patient-centered, interprofessional team-based primary care settings. The CoE's are known as Interprofessional Academic PACTs (iAPACTs) and Patient Aligned Care Teams that have at least two or more health professions trainees engaged in learning, working and teaching. This is the preferred model for VA Academic Primary Care PACTs.

The Cleveland Transforming Outpatient Care (TOPC) CoEPCE was designed for collaborative learning among nurse practitioner students and physician residents. Its curriculum consists of a dedicated half-day of didactics for all learners, interprofessional quality improvement projects, panel management sessions, and primary care clinical sessions for nursing and physician learners.

## **METHODS**

In 2015, the lead evaluator from VA's Office of Academic Affiliations observed the TOPC/COEPCE Dyad Model process, reviewed background documents, and conducted ten open-ended interviews with TOPC/COEPCE staff, participating trainees, faculty, and affiliate leadership. Informants described their involvement, challenges encountered, and benefits of the TOPC/COEPCE Dyad Model to participants, Veterans, the VA, and affiliates.

## **THE ISSUE: LACK OF INTERPROFESSIONAL LEARNING OPPORTUNITIES IN PRIMARY CARE**

Current healthcare professional education models typically do not have many workplace learning settings where physician and nursing trainees learn together and provide patient-centered care. While often in a shared clinical environment, trainees may engage in "parallel play", which can result in physician trainees and nurse practitioner students learning independently, and being ill-prepared to



practice effectively together. Moreover, each type of trainee has different learning needs. For example, less experienced nurse practitioner students require greater time, supervision, and evaluation of their patient care skills. On the other hand, senior physician residents, who require less clinical instruction, need to be engaged in ways that provide opportunities to enhance their ambulatory teaching skills. Although enhancement of resident teaching skills occurs in the inpatient hospital setting, there have been limited teaching experiences for residents in a primary care setting where the instruction is traditionally faculty-based. The TOPC/CoEPCE Dyad Model offers an opportunity to simultaneously provide trainees with a true interprofessional experience through advancement of skills in primary care, teamwork, and teaching, while addressing the health care needs of Veterans.

*"This is not about learning to work together; it is about working to learn together."*

*Howkins, Centre for the Advancement of Interprofessional Education, 2012*

### **PROMISING SOLUTION: THE DYAD MODEL**

In 2011, the VA Office of Academic Affiliations, Coordinating Center for the CoEPCE directed sites to expand their workplace learning instruction strategies and create more opportunities for physician and nurse practitioner trainees to work as a team to provide Veteran's care. There is evidence demonstrating that when students develop a shared understanding of each other's skill set, care procedures, and values, patient care is improved (Billett, 2014). Further, training in pairs can be an effective strategy in education of pre-clerkship medical students (Tolsgaard, Bjorck, Rasmussen, Gustafsson, & Ringsted, 2013). In April 2013, TOPC/CoEPCE staff asked representatives from the Student-Run Free Clinic at Case Western University to present their approach to pairing nursing and medical students in clinic under supervision by volunteer faculty. However, formal structure and curricular objectives were lacking. To address diverse TOPC/CoEPCE trainee needs and create a team approach to patient care, TOPC/CoEPCE staff formalized and developed a workplace curriculum, called the TOPC/CoEPCE Dyad Model. Specifically, the model pairs one nurse practitioner student with a senior (PGY2 or PGY3) physician resident to care for ambulatory patients as a dyad teaching/learning team. The TOPC/CoEPCE Dyad Model has three goals of improving clinical performance, learning team dynamics, and, for the physician resident, improving their teaching abilities in an ambulatory setting.

### **PLANNING AND IMPLEMENTATION**

*"The dyad could be anything. It could be a psychology resident with a physician resident. It's very generic but you need to be familiar with the trajectory of both learners, where they've come from and where they're going because the reality is you can't teach somebody if you are only talking to one group. Then you're leaving the other group out."*

*TOPC CoE Co-Director*

Planning the TOPC/CoEPCE Dyad Model took four months, and the program officially started in July 2013. Initial conceptualization of the Model was discussed at TOPCE/CoEPCE infrastructure meetings. A workgroup with representatives from medicine, nursing, evaluation and medical center administration

were formed to finalize the Model. They worked together to develop protocols for scheduling, ongoing monitoring and assessment, microteaching session curriculum development, and logistics. During the planning and initial implementation, the workgroups met weekly or biweekly as needed. They also piloted the program for a month with two dyads to monitor learner progress and improve components, such as adjusting the patient exam start times and curriculum. In maintaining the program, the workgroups continue to meet monthly to check for areas for further improvement and maintain dissemination activities.

## Curriculum

Table 1. Core of ORIME Model Relevant to TOPC CoE Dyad Model (Tham, 2013)

Observer	Reporter	Interpreter	Manager	Educator
<i>Pay attention and perceive with open-mindedness: sees, listens, notices</i>	<i>Able to complete basics of SOAP guide (subjective-objective) and able to answer basic 'what' questions</i>	<i>Able to complete assessment part of SOAP and as such able to answer basic 'why' questions</i>	<i>Able to independently formulate and write a plan of care</i>	<i>Able to teach juniors and peers, including giving constructive feedback and guidance</i>

The TOPC/CoEPCE Dyad Model is a novel opportunity to have trainees from different professions not only collaborate in the care of the same patient at the same time, but also negotiate their respective responsibilities pre- and post-visit. The experience focuses on interprofessional relationships and open communication. TOPC/CoEPCE used a modified version of the RIME (Reporter-Interpreter-Manager-Educator) Model (Pangaro, 1999) called the O-RIME Model (Table 1), which includes an Observer (O) phase as the first component for clarification about a beginners' role (Tham, 2013). Trainees undergo a short orientation for the dyad that provides the foundation for the overall structure and purpose and a formalized microteaching session curriculum, which is completed each week with the dyad team after the morning huddle. The sessions consist of three components: curriculum content, reflection on application of previous content, and a check-in on teamwork skills. The curriculum content is based in adult learning theory and focuses on the team approach to care, case presentation for precepting, and clinical skills. After the microteaching session, dyad teams engage in collaborative care of patients using structured method (Table 2).

*"We are trying to teach teams to listen to each other and when someone has a concern, to think about how you might change your behavior or how it's affecting that person and how you can change your behavior to function better as a team. We're trying to get them to talk and have crucial conversations and give each other feedback and learn from the feedback and be open to change your mind."*

*TOPC CoE Co-Deputy Director*

Table 2. Typical Dyad Session

The morning starts with a large group huddle at the white board in the Cleveland VA primary care clinic. Two dyads, other TOPC CoEPCE trainees, clinic staff, and TOPC CoEPCE faculty attend. A senior TOPC CoEPCE trainee leads the huddle and uses a checklist that includes review of staff coverage, specific patient issues, quality improvement [QI] projects, system issues that have recently arisen in the clinic, and ends with an interesting 'fact of the day' shared by a learner [e.g., something health-related in the news]. A TOPC CoEPCE faculty member asks the group about how the new check-in process is going.

The larger huddle group disbands, leaving the dyad pairs for a 10-minute Microteaching Session with a TOPC CoEPCE faculty, which consists of three activities.

First is a discussion of the "pearl" for that week. The pair receives an article the prior week and they are expected to discuss it [this week it is on avoiding diagnostic errors].

Second, the faculty member asks about the prior week's microteaching session "pearl" topic and how it was applied during the prior week. In this case, last week's was negotiation and one of the dyad teams share how they used negotiation in caring for one of their patients.

Third, the faculty member discusses how well their dyads are functioning as a team and how this can be improved. This week they discuss the importance of each team member being heard and the need to have difficult conversations with one another.

The dyad pairs each then go to their exam rooms and conduct a quick discussion on their four patients for that morning clinic. Visits are scheduled for 8am, 9am, 10am, and 10:30am and there are different ways of splitting responsibility for patient care. The dyad pair sees patients from the resident's panel.

At the mid-point of each visit, the pair reconvenes in the precepting room to debrief on the relevant aspects of the case among themselves and then present to the preceptor. The Dyad team discusses their strategy for precepting beforehand, including who will present.

The dyad completes the clinic visit and returns to the precepting room to debrief each of the clinic sessions with a preceptor.

Four dyads provide collaborative clinical care for Veterans during one half-day session per week. The dyad conducts four one-hour patient visits per session. To be a dyad participant, the physician residents must be at least a PGY2 and their schedule must align with the nurse practitioner student clinic schedule. Participation is mandatory for both nurse practitioner students and physician residents. TOPC/CoEPCE staff assemble the pairs.

The TOPC/CoEPCE Dyad Model requires knowledge of the clinical and curricular interface and when to block the dyad team members' schedules for four patients instead of six. Physician residents are in the TOPC/CoEPCE for 12 weeks and then off for 12 weeks. Depending on the nursing school affiliate, nurse practitioner student trainees are scheduled for either a 6 or 12-month TOPC/CoEPCE experience. For the 12-month nurse practitioner students, they are paired with up to four internal medicine residents over the course of their TOPC/ CoEPCE experience so they can experience the different teaching styles of each resident while developing more varied interprofessional communication skills.

### ***Faculty Roles and Development***

The Dyad Model also seeks to address the paucity of deliberate interprofessional precepting in academic primary care settings. TOPC/CoEPCE staff decided to use the existing primary care clinic faculty development series at the Cleveland VAMC, which is one hour long and occurs twice a month. TOPC/CoEPCE Dyad Model team members presented sessions covering foundational material in interprofessional teaching and precepting skills, which prepare faculty to precept for different professions and the dyad teams. It is important for preceptors to develop awareness of learners from different professions and the corresponding educational trajectories, so they can communicate with paired trainees of differing professions and academic levels who may require different levels of discussion.

### ***Resources***

By utilizing advanced residents as teachers, TOPC/CoEPCE staff were able to increase the number of learners in the clinic without increasing the number of staff to teach and precept them. For example, precepting a student typically requires more preceptor time, especially when we consider that the preceptor must also see the patient.

TOPC/CoEPCE staff includes TOPC/CoEPCE faculty who run the microteaching sessions and a TOPC/CoEPCE evaluator who monitors and evaluates the program. The microteaching sessions were derived from several teaching resources.

### ***Monitoring and Assessment***

The Cleveland TOPC/CoEPCE administered two different surveys (Dolansky et al., (under review) developed by the TOPC/CoEPCE Dyad Model Infrastructure and Evaluation workgroup. A seven-item survey assesses dyad team communication and interprofessional team functioning, and an eight-item survey assesses the teaching/mentoring of the resident as teacher. Both were collected from all participants to evaluate the resident's and student's point of view. Surveys are collected in the first and last weeks of the dyad experience.

Feedback from participants is used to make improvements to the program, such as monitor how the dyad teams are functioning, and coach individual learners.

## **PARTNERSHIPS**

In addition to TOPC/CoEPCE staff and faculty support and engagement, the initiative has benefited from partnerships with VA clinic staff and with the associated academic affiliates. In particular, the VA General Medicine Division Director helped to institute changes to the clinic structure. Additionally, buy-in from the clinic nurse manager was needed to make adjustments with staff schedules and clinic resources. To implement the TOPC/CoEPCE Dyad Model, the facility director had to approve reductions in the residents' clinic loads for the mornings when they participated.

The nurse practitioner affiliates' faculty at the schools of nursing are integral partners who assist with nurse practitioner student recruitment and participate in the planning and refinement of TOPC/CoEPCE components. The Frances Payne Bolton School of Nursing and the Breen School of Nursing of Ursuline College were involved in the planning stages of the TOPC/CoEPCE Dyad Model and continue to receive monthly updates from TOPC/CoEPCE. Similarly, the Case Western Reserve School of Medicine and Cleveland Clinic Foundation affiliates contribute on an on-going basis to the improvement and implementation process.

## **CHALLENGES and SOLUTIONS**

One challenge has been advancing aspects of a non-hierarchical team approach while it is a teacher-student relationship. The TOPC/ CoEPCE Dyad Model is viewed as an opportunity to recognize non-hierarchical structures and teach negotiation and communication skills. The TOPC/CoEPCE Dyad Model is an opportunity to increase interprofessional understanding of each other's education, expertise, and scope of practice.

Another challenge is accommodating the diversity in nurse practitioner training and clinical expertise. The nurse practitioner students can be in either the first or second of their two semesters. This is a challenge since both physician residents and physician faculty preceptors need to assess the nurse practitioner students' skills before providing opportunities to build on the nurse practitioner student's skill level. TOPC/CoEPCE staff members have learned the value of checking in weekly on this issue. For example, one of the dyad teams had a physician resident who had poor time management skills and the nurse practitioner student working with the physician resident was in the last semester of the program. TOPC/CoEPCE faculty coached the dyad team to appreciate the expertise of each member and the nurse practitioner student facilitated the physician resident to manage time better.

*"...two people working together there's obviously going to be different values and different things that each brings to the table, so it's about negotiating, it's about acknowledging what the other person values and devising a plan, you know, collaborating."*

*TOPC CoE NP Student*



## FACTORS FOR SUCCESS

*“Our students love it. They think this whole learning environment is excellent. If we could send all of our students there, we would, primarily because they learn from each other and they also appreciate each other’s skills and then begin to understand their role.”*

*TOPC CoE Affiliate Representative*

VA facility support and TOPC/CoEPCE Co-director leadership in the primary care clinic and the operations/academic partnership remains critical to integrating and sustaining the model into the Cleveland primary care clinic. The expertise of TOPC/CoEPCE Dyad Model faculty who serve as facilitators has been crucial, as they oversee team development concepts such as developing problem solving and negotiation skills. The workgroups ensured that faculty were skilled in understanding the different types of learners and provided guidance to dyad teams. Another success factor was the continual monitoring of the process and real-time evaluation of the program to adapt the model as needed.

## ACCOMPLISHMENTS AND BENEFITS

There is evidence that the TOPC/CoEPCE Dyad Model is achieving its goals: trainees are using team skills during and outside the Dyad Model; nurse practitioner students report improvements in skill levels and comfort; and physician residents feel the teaching role in the dyad pair is an opportunity for them to improve their practice.

### ***Interprofessional Educational Capacity***

The TOPC/CoEPCE Dyad Model complements TOPC/CoEPCE curriculum components and advances trainee understanding of all four core domains: IPC, SDM, SR, and PI (Table 3). For example, as a venue for SDM, the model affords trainees an opportunity to learn from each other, problem solve, and manage patients together. Nurse practitioner students contribute their knowledge on the psychosocial aspects of patient diagnosis and treatment while strengthening their clinical skills. Physician residents learn how to teach, delegate responsibility, and collaborate with nurse practitioner students to provide team-based care. The TOPC/CoEPCE Dyad Model supports the other TOPC/CoEPCE interprofessional education activities and is reinforced by these activities. The model is a learning laboratory for studying team dynamics, and developing a curriculum that strengthens a team approach to patient-centered care.

*“Because she [nurse practitioner student] brings out aspects that I don’t usually think about...so I think clearly there are different minds, different ideas and having that perspective is very important because some of them are very important to patient care in the end.”*

*TOPC CoE Physician Resident*

**Table 3. CoEPCE Core Domains**

**Shared Decision-Making (SDM):** Care is aligned with the values, preferences and cultural perspectives of the patient. Curricula focus is on communication skills necessary to promote patient's self-efficacy.

**Sustained Relationships (SR):** Care is designated to promote continuity of care; curricula focus on longitudinal learning relationships.

**Interprofessional Collaboration (IPC):** Care is team based, efficient and coordinated, curricula focus is on developing trustful, collaborative relationships.

**Performance Improvement (PI):** Care is designed to optimize the health of populations; curricula focus on using the methodology of continuous improvement in redesigning care to achieve quality outcomes.

***Participants' Knowledge, Attitudes, Skills, and Competencies***

*"I've had instances where the medical resident learned from the nurse practitioner student a really good example of motivational interviewing and the use of open-ended questions, and the use of reflection....I think that was a way to have the resident appreciate the differences in training and embrace that."*

*TOPC CoE Faculty*

As of May 2015, 35 trainees (21 internal medicine physician residents and 14 nurse practitioner students) have participated in the TOPC/CoEPCE Dyad Model. Because physician residents participate over two years, and may partner with different nurse practitioner students from one year to another, this has resulted in 27 dyad pairs engaging in the Dyad Model in this timeframe. Findings from TOPC/CoEPCE Dyad workgroups analysis of evaluations suggest that the dyad pair trainees learn from one another and the model provides a safe space where trainees can practice and increase their confidence (Billett, 2014; Clementz, et al., 2015; Singh, et al., 2015). The nurse practitioner students appear to increase clinical skills quickly—expanding physical exam skills, building a differential diagnosis, and formulating therapeutic plans—and progressing to the Interpreter and Manager levels in the O-RIME model. The physician resident achieves the Educator level.

As of September, 2015 the results from the pairs who completed beginning and end evaluations show that the physician residents increased the amount of feedback they provided about performance to the student and likewise the student nurse practitioners also felt they received an increased amount of feedback about performance from the physician resident. In addition, physician residents reported improving the most in the following areas: allowing the student to make commitments in diagnoses and treatment plans and asking the student to provide supporting evidence for their commitment to the diagnoses. Nurse practitioner students reported the largest increases in receiving weekly feedback about their performance from the physician and their own ability to listen to the patient (Billett, 2014; Clementz, et al., 2015; Singh et al., 2015).



*“What it (the dyad) has provided and what we have evidence for are relationships. They are the glue between all the work. We see it in the huddle when they are communicating with each other. We see it when they are debriefing before or after a visit. We see it during precepting, that they have this evidence of relational coordination, the team aspect.”*

*TOPC CoE Co-Director*

### **Participants’ Interprofessional Collaboration (IPC)**

TOPC/CoEPCE staff observed strengthened dyad pair relationships and mutual respect between the dyad partners. Trainees communicate with each other and work together to provide care of the patient. Second, dyad pair partners are learning about the other profession—their trajectory, their education model, and their differences. The physician resident develops an awareness of the partner nurse practitioner student’s knowledge and expertise, such as their experience of social and psychological factors to become a more effective teacher, contributing to patient-centered care. The evaluation results illustrate increased ability of trainees to give and receive feedback, and the change in roles for providing diagnosis and providing supporting evidence within the TOPC /CoEPCE dyad team (Clementz, et al., 2015; Lawrence, et al., 2014; Singh, et al., 2015).

*“It’s been excellent to see my nurse practitioner students grow within the dyads. They really learn a lot from working with their physician counterparts. Particularly because students working with residents pick up an incredible amount of clinical knowledge and have the opportunity to get that direct observation and feedback. In many ways those medicine residents know how the nurse practitioner students are performing better than I do because they’re with them.”*

*TOPC CoE Faculty*

### **Participants’ Satisfaction with Interventions**

As evidenced by the representative quotes included both internal medicine residents and nurse practitioner students found the experience to be of added value and satisfying.

### **CoEPCE Function**

Facility level effort (e.g. allowance for truncated schedule when in dyads) placed in sustaining the improvement is one indicator of added value. TOPC/ CoEPCE’s Dyad Model is slated to continue and expand under Stage 2 of the CoEPCE program.

### **Primary Care Delivery System**

The model has broad applicability for interprofessional education in the VA, since it enhances skills that providers need to work in a PACT/PCMH model. Additionally, the TOPC/CoEPCE Dyad Model has proven to be an effective interprofessional training experience for the TOPC/CoEPCE affiliates and may have applicability in other VA/affiliate training programs.

*"One of the outcomes is that we've been able to increase the number of learners in our clinic without having to increase the number of staff to train them. What's unique about the Dyad is that you can get two people in a clinical situation where there's academic benefit for them but you don't have to increase the amount of staff in order to do that; that is great with limited resources."*

*TOPC CoE Faculty*

*"I love the aspect of teaching and I think this has only **strengthened** it. I think the Dyad Model strengthens your bond. It helps you understand where each person stands and how they think and what their schooling and background is....it's fun to work with a colleague."*

*TOPC CoE Physician Resident*

### **Primary Care Services**

The TOPC/CoEPCE Dyad Model is an opportunity to add to the growing body of evidence that a team approach is well suited for complex, ambulatory visits. The dyad serves as a setting to develop a more robust picture of the patient informed by different perspectives, such as integrating the medical model with the psychosocial aspects that are strengths of nurse practitioner training.

The model creates opportunities for increased continuity of care and the nurse practitioner student can see the resident's patient and follow-up when the resident isn't there.

*"I've gained the basics of chronic disease management. I feel more comfortable discussing with patients, gathering a review of systems, conducting the HPI (History of Present Illness), assessing their adherence with medications, so I feel comfortable with making clinical decisions. So right now the point I'm at is I usually conduct the patient encounter and then when the resident and I step outside the room he asks me what your plan is now moving forward."*

*TOPC CoE Nurse Practitioner Student*

### **THE FUTURE**

*"This has given me an interprofessional approach to caring for patients with chronic diseases. Just from the basics of chronic disease management to the continuity of care of patients in a primary care setting. So that's been fantastic."*

*TOPC CoE Nurse Practitioner Student*

TOPC/CoEPCE Dyad Model can be adapted to different trainee types in the ambulatory care setting. TOPC/CoEPCE is piloting a version of the TOPC/CoEPCE Dyad Model with nurse practitioner residents (post-graduate) and first year medical students. Additionally, the TOPC/CoEPCE is paving the way for integrating improvement of physician resident teaching skills into the primary care setting and

facilitating bi-directional teaching among different professions. TOPC/CoEPCE intends to develop additional resources to facilitate use of the model application in other settings such as the dyad implementation template (Figure 1).

**Figure . 1**

**Cleveland VA Center of Excellence in Primary Care (CoE)**

**Transforming Outpatient Care (TOPC)**

**Dyad Implementation Template**

Fill-in boxes 1-8 as initial steps to planning a Dyad Team implementation at your facility. Consider factors specific to the context including barriers and facilitators in your responses.

<b>1) Clinic Location &amp; Programs Involved</b>
<b>2) Trainees to Participate (Clinic or Institution)</b>
<b>3) Stakeholders &amp; Communication Plan</b>
<b>4) Implementation Team Members &amp; Roles</b>

## CONTACT INFORMATION



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## RESOURCES

National VA CoEPCE Websites: <http://www.va.gov/oaa/coepce/>

National VA APACT Website, Publications, Executive Briefing Videos: [VA's OAA CoEPCE Academic PACT Website](#)

Cleveland CoEPCE Website and Video: <http://www.va.gov/oaa/coepce/Cleveland.asp>

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## CASE STUDY #3: HUDDLING FOR HIGH PERFORMING TEAMS

### *San Francisco VA Health Care System: Center of Excellence in Primary Care Education (CoEPCE) Interprofessional Academic Patient Aligned Care Team (iAPACT)*

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**Academic Partner:** University of California at San Francisco Schools of Medicine and Nursing

**Key Theme of the Innovation:** Improving education and patient care through refining team communication and strategies related to team role and function.

**Goals:**

- Daily interprofessional communication team “huddle” supporting relationship building, coordination needs, scheduling, case management and chronic disease management
- Practice partnerships, coordinated care and sustained relationships in shared patient panels
- Weekly didactics and faculty development

**Trainees:** Physician residents, nurse practitioner students and/or nurse practitioner residents, psychology fellow, pharmacy resident, and/or a social work intern

**Faculty and/or Staff:** Physician and/or Nurse Practitioner, Licensed Vocational Nurse, Medical Support Assistant and Registered Nurse Care Manager



San Francisco EdPACT/CoEPCE Huddle



## SUMMARY

This case study describes team huddles in the San Francisco Veterans Affairs Medical Center (SFVA) Education for Patient Aligned Care Teams (EdPACT) Center of Excellence in Primary Care Education (CoEPCE or CoE), which combines interprofessional education and team-based primary care in VA clinics. In these 15 minute huddles, trainees and PACT teamlets <sup>10</sup>meet to: discuss the day's patients, coordinate care for a shared panel of patients, and identify ways to improve team processes. Faculty members attend the huddles as coaches to guide and reinforce collaborative practice and continuous improvement. In addition to training learners from different professions to collaboratively provide team-based, patient-centered care, team huddles strengthen communication in the clinic and support sustained relationships among providers and patients.

## INTRODUCTION

In 2011, five VA Medical Centers were selected by VA's Office of Academic Affiliations (OAA) to establish Centers of Excellence in Primary Care Education (CoEPCE). Part of the VA's New Models of Care initiative, the five CoEPCE's (Boise, Cleveland, San Francisco, Seattle and West Haven) are utilizing VA primary care settings to develop and test innovative approaches to prepare physician residents, nurse practitioner students and residents (post-graduate) and other health professions trainees (such as pharmacy, social work, psychology, physician assistants, dieticians, etc) for primary care practice and leadership in the 21st Century. The CoEPCE's are interprofessional Academic PACTs (iPACTs) defined by VA as a PACT that has at least two or more professions of trainees engaged in learning on the PACT team. This model is VA's preferred method for teaching and learning in Primary Care.

The CoEPCE's are developing, implementing and evaluating curricula within 4 core domains (Table 1) designed to prepare learners to practice in primary care settings that are patient-centered, interprofessional, and team-based.

The SFVA EdPACT/CoEPCE developed and implemented a workplace learning model, which embeds trainees into PACT teamlets and clinic workflow. Trainees are organized in practice partner triads with two second or third year internal medicine residents (R2s and R3s) and one nurse practitioner student or resident. Physician residents rotate every two months between inpatient and outpatient settings and nurse practitioner trainees are present continuously for 12 months. In this model, each trainee in the triad has his/her own patient panel and also serves as a partner who delivers care to his/her partners' patients when they are unavailable. Didactic sessions on clinical content and on topics

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<sup>10</sup> A teamlet is the subset of staff to which one entire panel of patients is assigned. VA 2014 [Patient Aligned Care Team \(PACT\) Handbook](#).

related to the core domains occur three times a week during pre- and post-clinic conferences (Rugen et al., 2014).

**Table 1: CoEPCE Core Domains**

**Shared Decision-Making (SDM):** Care is aligned with the values, preferences and cultural perspectives of the patient. Curricula focus is on communication skills necessary to promote patient's self-efficacy.

**Sustained Relationships (SR):** Care is designated to promote continuity of care; curricula focus on longitudinal learning relationships.

**Interprofessional Collaboration (IPC):** Care is team based, efficient and coordinated, curricula focus is on developing trustful, collaborative relationships.

**Performance Improvement (PI):** Care is designed to optimize the health of populations; curricula focus on using the methodology of continuous improvement in redesigning care to achieve quality outcomes.

## **METHODS**

In 2015, evaluators from VA's Office of Academic Affiliations reviewed background documents and conducted open-ended interviews with nine CoE staff, participating trainees, VA faculty, VA facility leadership, and affiliate faculty. Informants described their involvement, challenges encountered, and benefits of the huddle to participants, Veterans, and the VA.

## **THE ISSUE: PROVIDING CLINICALLY-BASED APPROACHES TO INTERPROFESSIONAL EDUCATION**

With the emphasis on patient-centered medical homes (PCMH) and team-based care in the Affordable Care Act, there is an urgent need to develop new training models that provide future health professionals with skills that support interprofessional communication and collaborative practice (Chang et al., 2013; Zabar 2016).

## **PROMISING SOLUTION: THE HUDDLE**

A key aim of the CoEPCE is to expand workplace learning strategies and clinical opportunities for interprofessional trainees to work together as a team to anticipate and address the health care needs of Veterans. Research suggests that patient care improves when team members develop a shared understanding of each other's skill sets, care procedures, and values (IOM 2015). In 2010, the SFVA began phasing in VA-mandated Patient-Aligned Care Teams (PACTs). Each PACT teamlet serves approximately 1,200 patients and is comprised of Primary Care Provider(s) (physician or nurse practitioner) and a registered nurse (RN) care manager, a licensed vocational nurse (LVN), and a medical support assistant (MSA). Approximately every three teamlets also works with a 'profession specific team member' from Social Work and Pharmacy. The implementation of PACT created an opportunity for the CoEPCE to add trainees of various professions to 13 preexisting PACTs in three SFVA primary care clinics. This arrangement benefits both trainees and teamlets: trainees learn how to

collaborate with clinic staff while the clinic PACT teamlets benefit from coaching by faculty skilled in team-based care.

**A Typical Center Team Huddle:** The team members gather for 15 minutes at the beginning of the clinic day to huddle. Huddle team members include a faculty huddle coach, a trainee dyad (one of two internal medicine resident practice partners and one nurse practitioner student or resident), a psychology fellow, a pharmacy resident, and/or a social work intern, an LVN who communicates with patients in advance of their visit (such as if they need to go to the lab) an MSA who schedules or reschedules appointments and provides administrative support, and an RN Care Manager who provides case management and chronic disease management for the patients in the panel. The team typically meets in the nurse practitioner trainee's exam room, with the nurse practitioner trainee seated at his/her computer. The patient charts have been reviewed beforehand and trainees are usually familiar with the patient and come ready to discuss specific items. The team checks in personally with each other about issues for the day and upcoming absences. Next the LVN will present the cases for the day including reports from pre-visit calls to patients and the group will discuss any concerns about specific patients or care coordination issues. The trainees and/or RN Care Manager discuss patients who are scheduled in upcoming weeks and patients who need care outside a scheduled visit. Alternative care options may be discussed, such as shifting patients to a telephone clinic or connecting the patient to resources such as housing. Hospitalized patients or recently discharged patients are discussed with the RN Care Manager, who has been following them closely. Administrative issues, such as appointments and scheduling may be discussed, as well as clinic-wide changes. Participants are encouraged to give feedback to team members and comment on the huddle (citing examples such as uneven team member participation).

As part of routine clinical activities, huddles provide opportunities for workplace learning related to coordination of care, building relationships, and developing a sense of camaraderie that is essential for team-based, patient-centered care. In their ideal state, huddles are "...the hub of interprofessional, team-based care"; they provide a venue where trainees can learn communication skills, team member roles, systems issues and resources, and clinical knowledge expected of full-time providers and staff (Shunk et al., 2014). Embedding faculty in huddles as huddle coaches helps ensure trainees are learning and applying these skills.

## **PLANNING AND IMPLEMENTATION**

After OAA funded the CoEPCE in 2011, faculty had six months to develop the EdPACT curriculum, which included a team building retreat, interactive didactic sessions, and workplace learning activities (i.e. huddles).

In July 2011, ten trainee triads (each consisting of two physician residents, and either a nurse practitioner student or nurse practitioner resident) were added to preexisting PACTs at the San Francisco VA Medical Center primary care clinic and two community-based outpatient clinics. These

trainee triads partnered with their PACT teamlets and huddled for 15-minutes at the beginning of each clinic day to plan for the day's patients and future scheduled patients and to coordinate care needs for their panel of patients. CoEPCE staff built on this basic huddle model and made the following lasting modifications:

- Developed and implemented a huddle coach model and a huddle checklist to provide structure and feedback to the huddle  
([http://www.va.gov/oaa/CoePCE/docs/Huddle\\_Checklist\\_for\\_EdPACT\\_Trainees.pdf](http://www.va.gov/oaa/CoePCE/docs/Huddle_Checklist_for_EdPACT_Trainees.pdf) )
- Scheduled huddles in nurse practitioner student/resident's exam room to reduce the hierarchy in the trainee triad.
- Incorporated trainees from other professions and levels into the huddle (psychology fellows, pharmacy residents, social work)
- Linked the PACT teamlet (staff) to quality improvement projects that are discussed periodically in huddles and didactics

*"It is through these relationships, the ability to give each other feedback directly, to debrief situations that have happened, and to learn to trust and know how to best communicate with each other, that leads to higher quality work throughout the rest of the week...it can bring more meaning to the work of the whole clinic and all the staff in our clinic"*

*CoE Faculty*

### **Curriculum**

The huddle allows for practical application of the four core domains: Interprofessional Collaboration (IPC), Performance Improvement (PI) Sustained Relationships (SR), and Shared Decision Making (SDM) that shape the CoE curriculum. Interprofessional collaboration (IPC) is the primary domain reinforced in the huddle. Trainees learn key content in half-day team retreats held at the beginning of the academic year and in interactive didactic sessions. These sessions, which draw on concepts from TeamSTEPPS®, an evidence-based teamwork training program for health care workers, teach skills like closed-loop communication, check-backs, negotiation and conflict resolution. CoE trainee triads also lead quality improvement (QI) projects and the huddle is a venue for getting input, which reinforces the CoE's performance improvement (PI) curriculum. For example, PACT teamlet staff members provide trainees with feedback on proposed QI interventions, such as increasing the use of telephone visits. The huddle supports sustained relationships (SR) among team members that enhance patient care while improving the quality of the clinic experience for team members. Strengthened communications and increased understanding of team member roles and system resources supports a patient-centered approach to care and lays the foundation for shared decision making (SDM) between patients and team members.

*“...kind of stepping back, it’s not only about prescribing the treatment, it’s also about the quality of life at work and making sure we’re all supporting each other and making the day less stressful so we can be better people for our patients...”*

*RN Care Manager*

### **Faculty Roles and Development**

*“They (nurse practitioner students) feel supported. They get to know the roles and responsibilities of other people on the team. They have a better appreciation of who to go to with certain types of questions so that they can quickly triage problems, issues and concerns based on knowing the different players’ key roles and responsibilities. They come to appreciate, over time, how the huddle does level the power of hierarchy instead of it being a pyramid: that at least slowly, over time, it starts to feel more of a horizontal type of structure.”*

*CoEPCE Affiliate Representative*

CoEPCE physician and nurse practitioner faculty members who precept and function as huddle coaches participate in monthly two-hour faculty development sessions to address topics related to IPE. At least one session each year covers review of the items on the huddle checklist, tips on how to coach a huddle, discussions of the role of huddle coaches, and feedback and mentoring skills. Many huddle coach activities are inherent to clinical precepting, such as identifying appropriate clinical resources, answering clinical questions, etc., but the core function of the huddle coach is to facilitate effective communication among team members.

Initially, a coach may guide the huddle by rounding up team members or directing the agenda of the huddle (i.e. prompting the LVN to present the day’s patients and suggesting the group identify and discuss high-risk patients). As the year progresses, coaches often take a back seat and the huddle may be facilitated by the trainees, the RN, LVN, or a combination of all members. During the huddle, coaches may also reinforce specific communication skills such as a ‘check back’ or ISBAR (I\_dentify who you are, describe the Situation, provide Background information, offer an Assessment of the situation/needs, make a Recommendation or Request)—skills that are taught during CoE didactic sessions. The coach may call attention to particular feedback points, such as clarification of the order as an excellent example of a check-back. Each preceptor coaches one huddle per precepting session. After the teams huddle, preceptors do a smaller, shorter huddle in the precepting room to share successes, such as interprofessional trainees demonstrating backup behavior (e.g., “in today’s huddle, I saw a great example of back-up behavior when the medicine resident offered to show the NP student how to consent someone” and discuss challenges (e.g., getting all team members to the huddle).

### **Resources**

CoE staff schedule at least 20 huddles per week and coordinate preceptor and room schedules. The other required resources are clinic staff (RNs, LVNs, and MSAs) and exam rooms large enough to accommodate eight or more people. Sufficient staffing coverage and staggered huddles are also

important to allow cross-coverage for other clinical duties while team members and faculty are huddling.

### ***Monitoring and Assessment***

CoE staff administer the Team Development Measure (TDM) (Stock et al., 2013) two times per year and a modified version of the TEAM 360 feedback survey (ABIM; Chesluk et al., 2012) once per year. The TDM member gauges perceptions of team functioning (cohesiveness, communication, role clarity, and clarity of goals and means). Teams meet with a facilitator to debrief their TDM results and discuss ways to improve their team processes. Three-quarters of the way through the academic year, team members also complete the modified TEAM 360 survey on trainees. Each trainee receives a report describing his/her self-ratings and aggregate team member ratings on leadership, communication, interpersonal skills, and feedback.

### **PARTNERSHIPS**

In addition to CoEPCE staff and faculty support and engagement, huddles at SFVA have benefited from partnerships with VA primary care leadership and with academic affiliates. In particular, support from the VA clinic directors and nurse managers was key to instituting changes to the clinics' structure to include interprofessional trainees in huddles.

The affiliates—the University of California, San Francisco (UCSF) School of Medicine and School of Nursing—are integral partners and assist with nurse practitioner student and medicine resident recruitment. These affiliates also participate in planning and refinement of CoEPCE curricular activities. The UCSF School of Nursing, School of Medicine, and Center for Faculty Educators were involved in the planning stages of the huddle model.

### **CHALLENGES AND SOLUTIONS**

Having a staffing ratio that supports trainee participation in and learning through huddles is critical. Preceptor coverage must be in sufficient numbers to allow preceptors to coach the huddles and clinical staff must be adequate to create cohesive and consistent teams for trainee providers. Clinic staff turnover and changes in teamlet staff can be very disruptive. Over time, teamlet staff often know key details and helpful contextual information about particular patients and clinic processes. This knowledge may be lost with turnover among teamlet staff. If team members miss huddles due to staffing shortages and clinical duties, there may be delays and errors in patient care. An example is if information discussed in the huddle is not relayed back to the absent team member in a timely or accurate manner, care is impacted. However, potential disruptions can be mitigated by a high functioning team with strong communication skills and situational awareness who readily assist and distribute the workload. Consistent huddling, huddle coaches and checklists all help stabilize the group. Integration of trainees in the PACT team initially requires extra work because trainees are part-time and have panels significantly smaller than 1200 (which means the teamlet staff are assigned to multiple trainee and provider huddles). However, teamlet staff find working with trainee teams personally rewarding and developing highly functioning teams helps prevent burnout. Integration of

trainees from pharmacy, psychology, and social work takes time and thoughtful planning of activities and contributions that enhance team functioning while not overburdening trainees with additional responsibilities. If these other professions of health trainees are joining several teams' huddles, their role may be to weigh in as needed versus preparing for and reviewing several PCPs' schedules and patients in advance.

## **FACTORS FOR SUCCESS**

*"I firmly believe that these (huddles) are the best way to do IP education and training because they're realistic, authentic activities that hopefully add value to patient care and to clinic experiences for trainees."*

*CoEPCE Faculty*

VA facility and primary care clinic leadership's commitment to supporting staff participation in huddles was critical for integrating trainees into PACTs. Additionally, VA facility commitment to implementation of PACT was a key facilitating factor. Implementation of PACT, including huddles, has not been consistent at all VA facilities (Rodriguez et al., 2015). The CoE's approach to integrating trainees into the huddle was an opportunity to strengthen the huddle and to teach new staff members how to participate with team members in huddles. CoEPCE leadership, which has embraced change, meets regularly with facility leadership as well as an advisory board of UCSF leaders to update them on CoE activities. A critical factor for success was the CoE's expertise in interprofessional education and its ability to integrate concepts from the four core domains into an effective workplace learning experience, including attention to the physical space, scheduling, and the development and implementation of the huddle coach role and checklist.

## **ACCOMPLISHMENTS AND BENEFITS**

There is evidence that team huddles at SFVA are achieving their goals and CoE trainees are being trained to provide team-based, patient-centered care to Veterans. Key outcomes of the CoE's approach to huddles include components in the next sections.

### ***Interprofessional Educational Capacity***

*"So I think the benefits for the trainees are what kind of feedback you have for them. And I guess whatever issues that you can bring to them about clarifying what they want, like what they're instructing you to do, and I think definitely they know my roles a little bit more."*

*Clinic MSA*

CoEPCE faculty and staff consider the huddle to be one of the best ways to teach interprofessional communication and collaboration, team functioning and clinical performance. Unlike a traditional didactic, classroom-based session on interprofessional collaboration, the huddle is an opportunity for health care professionals to work together to provide care in a clinic setting. It is also an activity in which the Coe has continued innovative activities such as adding a preceptor huddle, incorporating

additional professions, and encouraging panel management activities during huddles. The CoE has received significant interest and visibility and has been invited to share the model in numerous presentations.

### ***Participants' Knowledge, Attitudes, Skills, and Competencies***

One aim of the CoE's approach to huddles was to provide trainees with general skills in the core domain interprofessional collaboration, including teamwork and communication that transfer to other settings such as inpatient teams and specialty clinics. Learning about other professions and their scopes of practice and areas of expertise can be helpful beyond huddles and primary care. (See below) Trainees also learn concepts and practices from the other three core domains:

- **Performance Improvement:** The huddle is a venue for utilizing clinic metrics as well as focusing on quality improvement projects that benefit from a team approach to solving problems;
- **Sustained Relationships:** The huddles support and teach the importance of relationships among the team. Trainees learn about the roles of clinic staff members and clinic staff have more opportunities to interact with trainees and become comfortable with them, supporting coordinated care; and
- **Shared Decision Making:** The huddle is a venue for discussing options for providing patient decision-making support, such as discussing the pros and cons of colon cancer screening with a patient, improving patient-centered care.

*"So now in San Bruno I'm still a provider on that panel and so just as we were modeling out there, a lot of checking in on patients for today, looking forward to next week, as well as talking about high risk patients. I'm also the huddle coach for that huddle so some of it is doing naming when a good teachback happens, the more process goals of the huddle. And then in my medical practice huddles I'm the provider and there actually is no huddle coach and we get done what we need to get done. We do a lot of panel management though, like looking at clinic metrics. And then in the intern huddle, I act a little bit like a huddle coach because they're so new to the clinic and the huddle."*

*Nurse practitioner resident*

Additionally, huddles can address differences in trainee clinical expertise. For example, new physician interns with less experience in the clinic receive more coaching on system resources and patient histories than they might otherwise. Nurse practitioner residents often participate in more than one huddle team and transition to a coaching role.

### ***Sustained Relationships, Role Clarity and Collaboration***

The huddles are structured to facilitate sustained relationships among trainees from different professions and among the PACT teamlet in detail as a team.

The huddle increases team efficiency by educating trainees and staff about team member roles. For example, trainees learn how the LVNs and MSAs prepare for patient visits. Moreover, an opportunity



exists to learn how provider and clinic staff expertise may overlap. RN Care Managers, who have their own hypertension clinics, can help manage a patient's medication titration. Similarly, pharmacy trainees can suggest a referral for a complicated diabetic to pharmacy clinic, where clinical pharmacists can adjust medications and provide patient education for hypertension, hyperlipidemia and hyperglycemia. In this way, role clarity is improved and trainees learn how team members work within their scope of practice and are better able to 'share the care.'

There is evidence that huddles have resulted in expanded participant interprofessional collaboration. The CoE administers the Team Development Measure, a 31-item survey developed by Peace Health (Stock et al., 2016), twice a year and the huddle teams rate themselves on several dimensions—cohesiveness, communications, role clarity, and goals. The 2011/12 findings showed that nearly all teams showed improvement, with the mean scores for all teams combined increasing from 59.4 in the fall to 64.6 in the spring (max score is 100). (Shunk et al., 2014) These scores increased again from 62.2 to 70.3 in 2012/13; from 66.6 to 70.2 in 2013/14, and from 64.6 to 69.9 in 2014/15.

### **Expanding Clinical Knowledge**

*"I think being a health care provider we learn a lot about how to take care of patients. But especially in medical school, you're training in school, we're not trained how to be administrators as much or leaders or how to run an organization or how to run a team. So I think the training and learning how to manage a staff, and then really managing up to the attending is a very important skill that I certainly didn't come in to the residency with, but I think I'm going to leave with. And I think these skills are highly transferable for people who aren't going in to primary care, especially physicians. Because even if you don't stay in primary care, most health care and subspecialties is still delivered in an ambulatory setting."*

*Internal Medicine Resident, R2*

At the individual level, the huddle is an opportunity for a trainees to expand their clinical expertise in real-time. The huddle provides exposure to a variety of patients and corresponding patient care needs. Trainees are encouraged to complete patient pre-rounds before the huddle in order to focus the huddle discussion on patients with chronic conditions, complex needs, recent hospitalizations, and upcoming appointments. CoEPCE trainees tap into the expertise and experience of their team members and coach. The clinic staff can get information from trainees about their plan of care while trainees get a

more complete picture of a patient's situation—for example, medical or social history or communication preferences. Additionally, trainees learn team skills such as communication techniques and warm handoffs<sup>11</sup>, which can be used in other clinical settings outside primary care and beyond the VA. As trainees advance, the huddle helps them learn to delegate appropriately, practice conflict negotiation and develop leadership skills.

### ***Participants' Satisfaction with Interventions***

There is qualitative evidence that clinic RNs and LVNs like huddles and appreciate having the opportunity to communicate in-person with providers as well as to teach trainees how to work interprofessionally. Faculty members who are huddle coaches report that they develop a richer understanding of the skillset of trainees, information that can inform CoE curriculum design. Trainees appreciate the opportunity to develop relationships with team members. In end of year interviews, they describe their teams as their families, making them feel more connected to the clinic. They also enjoyed starting their day with familiar faces.

### ***Primary Care Delivery System***

The huddle is an important component of a system-wide transformation to provide team-based, patient-centered care to Veterans. The CoE's efforts to strengthen and standardize the huddle have the potential to hasten this transformation while improving relationships and quality of care. Additionally, the CoE's approach to integrating trainees into huddles has broader applicability and is being considered for adoption by other VA Centers of Excellence in Primary Care Education.

### ***Primary Care Services***

The huddle may contribute to efficiencies in a busy clinic setting. For example, the RN Care Manager can have upwards of 1,200 patients on his/her panel and, between staff and trainees, as many as 12 providers with whom to communicate. The huddle strengthens the communications with providers and is an opportunity to touch base on the patients, coordinate care, and keep track of high-risk patients who might fall off the radar otherwise. The huddle is flexible and can occur with various clinic staff and providers. A two-person huddle can occur between an RN and the primary provider. QI

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<sup>11</sup> A warm handoff is often described as an intervention in which: "a clinician directly introduces a patient to another clinician at the time of the patient's visit, and often a brief encounter between the patient and the health care professional occurs. (Cohen et al., 2015). At SFVA, warm handoffs often begin in huddles with a medicine resident or NP student discussing a patient with a psychology fellow and arranging a time for the psychology fellow to join the patient's visit.

projects that have been developed as a result of a huddle have improved clinic primary care services, such as completing opiate consents and urine toxicology or improving continuity through increased telephone clinic usage.

*"I definitely think there is a lot of communication that's done and definitely a lot of patient care that's a bit more improved because you get to review the patients like if they need to come in or if they don't need to come in. You know, just resolve some problems that you may have questions about. And then you resolve it during the huddles so you can talk to them in person about it."*

*Clinic Staff Member*

### **Patient Outcomes**

The huddle results in a more robust plan of care than might be developed by an individual provider who might not have time to consider options outside the individual's scope of practice or expertise. While there are few clinical outcomes that are directly influenced by huddles alone, huddles may help indirectly improve patient outcomes on many fronts, including:

- Increased continuity of care because the patient now has a team focusing on care. At times throughout the day when team members cannot talk face to face with one another or with the patient, they know about the patient's situation and are better able to establish a rapport when the patient calls or comes in for the visit. Trainees also become familiar with their practice partners' patients, which allows them to ensure continuity when the patient's primary trainee provider is out of clinic;
- Panel management and identifying and tracking sicker patients;
- Increased access, such as identifying patients who could receive care by a telephone visit, decreasing the number of no shows by making extra efforts to remind patients about appointments and improving follow up; and
- Improved population health outcomes from process improvements, such as the development of a process for having opioid patients sign new contracts or identifying diabetics who might benefit from a group approach to care.

### **THE FUTURE**

The huddle coach concept and checklist have been shared broadly and have applicability in other teaching settings where providers and clinic staff are learning how to implement huddles. A video and resources on "How to Huddle" are available at <http://suzannecgordon.com/how-to-huddle/>.

Under Stage 2 of the CoEPCE program, the CoE will develop a Huddle Coaching Program Implementation Kit comprised of a Huddle "How-To" Guide and a Coach training manual. The CoE team huddle is one of many VA huddles and an example of how the huddle continues to evolve. It is a versatile tool that can be used to focus on different topics and include different professions. Currently, it is being adapted to specialty care where there is large patient volume, such as cardiology and orthopedics.

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## RESOURCES

National VA CoEPCE Websites: <http://www.va.gov/oaa/coepce/>

National VA APACT Website, Publications, Executive Briefing Videos: [VA OAA Academic PACT website](#)

San Francisco CoEPCE web and video: <http://www.va.gov/oaa/coepce/sanfrancisco.asp>

Huddle Checklist: [http://www.va.gov/oaa/CoePCE/docs/Huddle\\_Checklist\\_for\\_EdPACT\\_Trainees.pdf](http://www.va.gov/oaa/CoePCE/docs/Huddle_Checklist_for_EdPACT_Trainees.pdf)

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## CASE STUDY #4: PANEL MANAGEMENT MODEL

### *VA Puget Sound Health Care System – Seattle Campus: Center of Excellence in Primary Care Education (CoEPCE) Interprofessional Academic Patient Aligned Care Team (iAPACT)*

**Prepared by:** Annette L. Gardner, PhD, MPH, with VA Puget Sound Health Care System at Seattle CoEPCE: Catherine P. Kaminetzky, MD, MPH, Anne P. Poppe, PhD, RN and Joyce E. Wipf, MD.

**Academic Partners:** University of Washington Schools of Medicine and Nursing

**Key Theme of the Innovation:** Use of panel management to address high-risk Veterans with chronic care needs and the assessment and management of these patients using population based data

#### **Goals:**

- Performance improvement
- Interprofessional Collaboration
- Chronic disease management

**Trainees:** Doctor of nursing practice (DNP) students, nurse practitioner residents; internal medicine physician residents; postgraduate pharmacy residents and other health professions trainees

**Faculty and/or Staff:** Chief Resident in medicine, clinical pharmacy specialists, an RN-Care Manager, social workers, nurse practitioners, internal medicine physicians residents and clinical psychologists

#### **SUMMARY**

This case study describes the Seattle Center of Excellence in Primary Care Education Panel Management (PM) model, which combines interprofessional education, clinical or workplace learning and review of patient data to increase quality of care for Veterans. Center of Excellence in Primary Care Education trainees, faculty and clinic staff work collaboratively in a primary care setting to proactively provide team-based care to high-risk patients with unmet chronic care needs. The CoE's PM model



Seattle CoEPCE Panel Management Session

increases trainee knowledge, skills and performance in the care and management of populations by using data to identify appropriate care for individual patients within the trainee's panel of patients.

## INTRODUCTION

**Table 1: CoEPCE Core Domains**

**Shared Decision-Making (SDM):** Care is aligned with the values, preferences and cultural perspectives of the patient. Curricula focus is on communication skills necessary to promote patient's self-efficacy.

**Sustained Relationships (SR):** Care is designated to promote continuity of care; curricula focus on longitudinal learning relationships.

**Interprofessional Collaboration (IPC):** Care is team based, efficient and coordinated, curricula focus is on developing trustful, collaborative relationships.

**Performance Improvement (PI):** Care is designed to optimize the health of populations; curricula focus on using the methodology of continuous improvement in redesigning care to achieve quality outcomes.

In 2011, five Veterans Affairs (VA) Medical Centers were selected by VA's Office of Academic Affiliations (OAA) to establish Centers of Excellence in Primary Care Education (CoEPCE or CoE's). Part of VA's New Models of Care initiative, the five CoE's (Boise, Cleveland, San Francisco, Seattle and West Haven) utilize VA primary care settings to develop and test innovative approaches to prepare physician residents, medical students, advanced practice nurses and undergraduate nursing students, and other health profession's trainees, such as social workers, pharmacists, psychologists, physician assistants for primary care practice in the 21st Century. The CoEPCE's are interprofessional Academic PACTs (iAPACTs) defined by VA as a PACT that has at least two or more professions of trainees engaged in learning on the PACT team. This model is VA's preferred method for teaching and learning in Primary Care. The five CoE's are developing, implementing, and evaluating curricula designed to prepare learners from relevant professions to practice in patient-centered, interprofessional team-based primary care settings.

The VA Puget Sound Seattle CoEPCE curriculum is embedded in a well-established academic VA primary care training site. Trainees include doctor of nursing practice (DNP) students in adult, family and psychiatric mental health nurse practitioner programs; nurse practitioner residents; internal medicine physician residents; postgraduate pharmacy residents and other health professions trainees. A priority of the Seattle CoEPCE is to provide DNP students, DNP residents and physician residents with a longitudinal experience in team-based care as well as interprofessional education and collaborative practice (IPECP). Learners spend the majority of CoEPCE time in supervised, direct patient care, including primary care, women's health, deployment health, homeless care, and home care. Formal IPECP activities comprise approximately 20% of time, supported by three educational strategies: 1) Panel management/quality improvement; 2) Team building/communications; and 3) Clinical content



seminars to expand trainee clinical knowledge and skills and curriculum developed with the CoEPCE enterprise core domains in mind (Table 1).

## **METHODS**

In 2015, evaluators from VA's Office of Academic Affiliations CoEPCE Coordinating Center reviewed background documents describing Seattle's panel management initiative and conducted ten open-ended interviews with CoEPCE staff, participating trainees, faculty, and affiliate leadership. Informants described their involvement, challenges encountered, and benefits of PM to participants, Veterans, the VA, and affiliates.

## **THE ISSUE: ADDRESSING THE UNMET CARE NEEDS OF PATIENTS, IMPROVING POPULATION HEALTH**

Clinicians are increasingly being required to proactively optimize the health of an assigned population of patients, in addition to assessing and managing the health of individual patients presenting for care. This is an emerging competency that makes use of population data, team based care, evidence-based chronic care based on clinical data in electronic health records, and PI tools to effect improvements in care metrics. To address the twin objectives of increased accountability for population health outcomes and improved face-to-face care, the Seattle CoEPCE developed curriculum for trainees to learn panel management (PM), a set of tools and processes that can be applied in the primary care setting.

### ***A Sample Panel Management Session: Reducing Low Acuity Visits to the Emergency Department***

*Panel Management sessions are conducted 4 – 6 times a year and last two to three hours. They are held in a computer lab with 10 computer terminals and a large screen and projector and can readily accommodate 20 people. Usually participants include: 6-10 CoEPCE trainees and two to five clinical faculty, including clinical pharmacist, nurse practitioner, and/or physician, and occasionally RN care manager and other health professionals. The chronic care data for individual trainee patients is either pulled ahead of time by the CoEPCE data manager or is readily available through the VA Primary Care Almanac and is provided to trainees for the session. The CoEPCE faculty moderator starts the session with a review of PM and the goal of reviewing patient data as a team with the intent of improving patient care. There is a brief lecture on the session topic with an interactive session supported by CoEPCE faculty from diverse professions. Next, the participants discuss the causes of ED utilization, prioritize the causes for a chart analysis, then create a “Chart Biopsy Tool”. Trainees then, either alone or in pairs, review their panel data on two to five patients. CoEPCE faculty members float and assist on an as-needed basis. The group reconvenes and trainees present individual patients to the group, which explores management strategies and untapped resources to improve individual patients’ care. The CoEPCE clinical pharmacy faculty projects the electronic health record of each case on the screen, navigating chart information as the group discusses potential interventions. Trainees are encouraged to develop a treatment plan, write orders and notify team members of needed tasks. Additionally, a CoEPCE faculty member may track factors identified in discussion and plot results in a frequency graph. The group may also discuss themes of system processes and potential quality improvement. At the end, there is a session wrap up and trainees complete a session evaluation.*

### **PROMISING SOLUTION: PANEL MANAGEMENT**

In panel management clinical providers utilize data to proactively provide care to their patients between traditional clinic visits. PM clinical providers utilize data to proactively provide care to their patients between traditional clinic visits. The process is proactive in that gaps are identified regardless of whether an in-person visit occurs, and involves an outreach mechanism to increase continuity of care, such as follow-up communications with the patients (Neuwirth, Schmittiel, Tallman, and Bellows 2007). PM has also been associated with improvements in chronic disease care. (Loo, et al., 2011; Kanter, Martinez, Lindsay, Andrews, Denver, (2014); Kravetz, and Walsh (2016).

The Seattle CoEPCE developed an interprofessional team approach to PM that teaches trainees about the tools and resources that can be used to close the gaps in care, including the use of clinical team members as healthcare systems subject matter experts. CoEPCE trainees are taught to analyze the care they provide to their panel of Veterans (e.g. identifying patients who have not refilled chronic medications or those who utilize the emergency room (ER) for non-acute conditions) and take action to improve care. PM yields rich discussions on systems resources and processes and is easily applied to a range of health conditions (e.g. diabetes, mental and behavioral health, and dermatology) as well as

delivery system issues (e.g. ER utilization). PM gives learners the tools they can use to close these gaps, such as the expertise of their peers, clinical team and specialists.

## **PLANNING AND IMPLEMENTATION**

In addition to completing a literature review to determine the state of PM practice and models, CoEPCE faculty polled recent graduates inquiring about strategies they did not learn prior to graduation. Based on their responses, CoEPCE faculty identified two skill deficits: management of chronic diseases and proficiency with data and statistics about performance improvement in panel patient care over time. Addressing these unmet needs became the impetus for developing curriculum for conducting panel management. Planning and launching the CoE's approach to PM took approximately 3 months and involved CoE faculty, a data manager, and administrative support. The learning objectives of Seattle's PM initiative are:

- Promote preventive health and chronic disease care by utilizing performance data;
- Develop individual- and population-focused action plans;
- Work collaboratively, strategically and effectively with interprofessional care team; and
- Learn how to effectively utilize system resources.

### **Curriculum**

*"It's trying to marry the power of data and the power of relationships."*

*CoE Faculty Member*

The PM curriculum is a longitudinal, experiential approach to learning how to manage chronic diseases between visits by using data on patient measures. It is designed for trainees in a continuity clinic to review the care of their own patients on a regular basis. Seattle CoEPCE medicine residents are assigned patient panels, which increase from 70 patients in Year 1 to approximately 140 patients by the end of Year 3. Doctor of Nursing Practice (DNP) postgraduate trainees are assigned an initial panel of 50 patients that increases incrementally over the one year of residency.

CoEPCE faculty determined the focus of PM sessions to be diabetes, hypertension, obesity, chronic opioid therapy, and low acuity ER utilization. Because PM sessions are designed to allow participants to identify systems issues that may affect multiple patients, some of these topics have expanded into quality improvement (QI) projects.

### **Scheduling**

PM sessions run two to three hours per session, and are held four to six times a year. Each session is repeated twice to accommodate diverse trainee schedules. PM participants must have their patient visit time blocked for each session.

## ***Faculty Roles and Development***

PM faculty involved in any individual session may include a combination of one of two CoEPCE clinical pharmacy specialists, an RN Care Manager, a social worker, a nurse practitioner, a physician, a clinical psychologist, and a medicine outpatient chief resident (PGY4, termed clinician-teacher fellow at Seattle VA). The chief resident is a medicine residency graduate, and takes on teaching responsibilities depending on the topic of the session. The CoEPCE clinical pharmacist role varies depending on the session topic: they may facilitate the session or provide recommendations for medication management for individual cases. Ideally, the RN Care manager would participate at every session since s/he often knows the patients and brings a unique perspective that complements that of the primary care providers. Because the patients of multiple RN Care Managers were presented at each session, it was not feasible to include all RN Care Managers in every session. However, immediately after case discussion, trainees often communicated with their RN Care Managers about the case, using instant messaging. In addition, CoEPCE provides other avenues for patient care discussion through huddles involving the provider, RN Care Manager, clinical pharmacist, and other clinical professions.

## ***Resources***

The primary resource required to support PM is an information technology (IT) system that provides relevant health outcome and health care utilization data on patients assigned to trainees. PM initially relied on data manager support to pull panel data for a given clinical measure for the session. With the increasing availability of chronic disease registry data in VA, this procedure has transitioned to developing toolkits to learn about resources for panel data. To promote this transition, PM sessions include teaching trainees how to access their own data. Since discussion about the care of panel patients during the learning sessions often results in real-time adjustments in the care plan, modest administrative support required post-PM sessions such as clerical scheduling of the requested clinic or telephone follow-up with the provider, nurse, or pharmacist

## ***Monitoring and Assessment***

PM participants' panel performance are evaluated at each educational session. To assess the CoEPCE PM curriculum, participants provide feedback in eight questions over three domains: trainee perception of curriculum content, confidence in performing PM involving completion of a PM workshop, and likelihood of using PM techniques in the future. CoEPCE faculty use the feedback to improve their instruction of panel management skill and develop new sessions that target additional population groups. Evaluation of the curriculum also includes monitoring of panel patients' chronic disease measures.

## **PARTNERSHIPS**

Several partnerships have contributed to the success and integrations of PM into facility activities. First, having the Primary Care Clinic Director as a member of the CoEPCE faculty has encouraged the VA facility and CoEPCE clinic faculty and staff to operationalize and implement PM broadly, such as distributing data on a monthly basis to all clinic staff. Second, high facility staff interest outside the

CoEPCE and primary care clinic has facilitated establishing communications outside the CoEPCE regarding clinic data.

The Seattle CoE has further partnered with the other four CoEPCE's on a multi-site Emergency Department (ED) utilization project that culminated in storyboard presentations by each site at the Institute of Healthcare Improvement National Conference in December 2014. Seattle's initiative on panel management ED utilization curricula (low acuity high utilizers) revealed an unusual pattern of ED usage, which upon discussion with the other CoEPCE sites, was instrumental in the adoption of ED utilization as an all-site quality improvement project.

## **CHALLENGES AND SOLUTIONS**

### ***Addressing diverse trainee need***

Trainees at earlier academic levels often desire more instruction in clinical knowledge, such as treatment options for diabetes or goals of therapy in hypertension. In contrast, advanced trainees are able to review patient data, brainstorm and optimize solutions. Seattle CoEPCE balances these different learning needs via a flexible approach to the three-hour sessions. For example, advanced trainees progress from structured mini-lectures to informal sessions which train them to perform PM on their own. In addition, PM's flexible design integrates trainees with diverse schedules, particularly among DNP students, DNP residents, pharmacy residents and physician residents. Some of this work falls on the RN care management team and administrative support staff.

*"The CoE constitutes a large majority of my clinician staff, as well as the trainees in our clinic, and so, the operations of that particular unit (CoE) are critical to, sort-of, how our nurses and larger PACT team function."*  
*Clinic Director*

### ***Competing priorities***

*"...how helpful it was to hear from our pharmacist colleagues about what it was that they would recommend, and that was surprising to me. I think that in medical school, I hadn't had that kind of cross-fertilization with colleagues, and so to have a little bit of what they had to offer so that I could be aware of that as a clinician and take advantage of that going forward. But I think that it changed the way that I've used the pharmacists on the hallways..."*  
*CoE Medicine Resident*

The demand for direct patient care points to the importance of indirect patient care activities like PM to demonstrate improved results. Managing chronic conditions and matching appropriate services and resources should improve clinical outcomes and efficiency long-term. In the interim, it is important to note that PM demonstrates the continuous aspect of clinical care, particularly for trainees who have strict guidelines defining "clinical care" for the experiences to count towards eligibility for licensure. Additionally, PM results in trainees who are making decisions with VA patients and are more efficiently providing and supporting patient care. Therefore, it is critical to secure important resources, such as provider time for conducting PM.

### **Health information technology (HIT)**

No single data system in VA covers the broad range of topics covered in the PM sessions, and not all trainees have their own assigned panels. For example, health professions students are not assigned a panel of patients. While they do not have access to panel data such as those generated by Primary Care Almanac in VSSC (a data source in VHA's Support Service Center database), the Seattle CoEPCE data manager pulls a set of patient data from the students' paired faculty preceptors' panels for review. Thus they learn PM principles and strategies for improving patient care via PM as part of the unique VA longitudinal clinic experience and the opportunity to learn from a multi-disciplinary team that is not available at other clinical sites. Postgraduate nurse practitioner residents in VA CoEPCE training do have their own panels of patients and thus the ability to directly access their panel performance data.

### **FACTORS FOR SUCCESS**

A key success factor includes CoEPCE faculty's ability to develop and operationalize a panel management model that simultaneously aligns with the educational goals of an interprofessional education training program and supports VA adoption of the medical home or Patient-Aligned Care Teams (PACT). The CoEPCE contributes staff expertise in accessing and reporting patient data, accessing appropriate teaching space, managing panels of patients with chronic diseases and facilitating a team-based approach to care. Additionally, the CoEPCE brand is helpful for getting buy-in from the clinical and academic stakeholders necessary for moving PM forward.

Co-locating CoEPCE trainees and faculty in the primary care clinic promote team identity around the RN Care Managers and facilitated communications with non-CoEPCE clinical teams that have trainees from other professions. RN Care Managers serve as the locus of high quality PM since they share patient panels with the trainees and already track admissions, ER visits, and numerous chronic health care metrics. RN Care Managers offer a level of insight into chronic disease that other providers may not possess, such as the specific details on medication adherence and side effects for that particular patient, as well as the medication side effects impacting that particular patient. RN Care Managers are able to teach about their team role and responsibilities, strengthening the model.

*"it's just so nice to be able to hear how our colleagues use the resources here at the VA and to hear somebody who is a year ahead of me how he's managed his patient—that I felt like I learned from that case. And we're so busy as clinicians and we don't get a lot of time to interact with each other and hear how each other is managing patients, especially the way our workroom is organized here."*

*CoE Medicine Resident*

### **ACCOMPLISHMENTS AND BENEFITS**

There is preliminary evidence that Seattle's approach to PM is achieving its goals: trainees and faculty report that they are using team skills to provide patient-centered care and trainees are learning to work with data to strengthen their clinical skills in providing longitudinal care. Based on monthly clinic reports, more CoEPCE resident panels are meeting PACT chronic disease targets in blood pressure and

diabetes than non-CoEPCE residents or overall Seattle primary care clinic performance. Results suggest that achievement of PM curriculum goals contributes to improvements in individual and population-wide patient care.

PM curriculum contributes to trainee understanding of roles of PACT members to improve patient care. Preliminary clinic data on number of team member visits (e.g. nursing and pharmacy in addition to provider visits) are higher on CoEPCE teams than non-CoEPCE teams.

### ***Interprofessional Educational Capacity***

Panel management is an opportunity to expand CoEPCE interprofessional education capacity by: creating co-location of different trainee and faculty professions during the PM sessions; the sharing of data with trainees; sharing and reflecting on data strengthened communications between professions and within the PACT. The Seattle CoEPCE now has systems in place that allow the RN Care Manager to send notes to a physician and DNP resident and the resident is expected to respond.

### ***Participants' Knowledge, Attitudes, Skills, and Competencies***

Seattle's PM approach provides experience with analyzing panel data to improve care in an interprofessional team setting, which is an Accreditation Council for Graduate Medical Education (ACGME) requirement.

CoEPCE staff have observed anecdotally that trainees who participate in the PM sessions become clinically proficient sooner than those who do not. It appears that PM participants develop earlier familiarity with finding information in VA's Computerized Patient Record System (CPRS), writing orders, and linking patients to resources. For senior learners, PM is also an opportunity to strengthen their teaching skills. For example, as mentioned above, the chief residents play a pivotal role as co-teachers in the sessions. They also contribute to the design and implementation of new PM components, such as conducting a pilot of an abbreviated approach in session with non-CoEPCE internal medicine residents before teaching the method to other health profession learners in clinic.

*...CoE has helped accelerate this process of shifting providers from a reactive [who's in clinic and what do I need to do for them based on what they're telling me?] to a proactive approach where, [all right, when am I going to stop and think about all of the 15 patients I sent home in the last two weeks and how they are reacting to the changes we made or the treatment plans we talked about...]*

*VA Facility Leader*



### **Participants' Interprofessional Collaboration (IPC)**

*"I don't know how you could ever function in primary care without approaching a patient with multiple resources; without a team based approach."*

*CoE DNP Student*

PM sessions are intentionally designed to improve communication among team members and foster a team approach to care. PM sessions provide an opportunity for trainees and clinician faculty to be together and learn about each profession's perspectives. For example, medicine and DNP trainees learn early of the strong resource clinical pharmacist are to the team by prescribing and making medication adjustments within their scope of practice as well as make appropriate pharmacy referrals. Additionally, the registered nurse (RN) care manager and clinical pharmacy specialists who serve as faculty in the CoEPCE, provide pertinent information on individual patients, increasing integration with the PACT. Finally, there is anecdotal evidence that faculty are also learning more about interprofessional education and expanding their own skills.

### **Participants' Clinical Performance**

Participants—CoEPCE trainees, non-CoEPCE physician residents, and CoEPCE faculty—regularly receive patient data with which they can proactively develop or amend a treatment plan between visits. PM has resulted in improved data sharing with providers. Instead of once a year, providers and clinic staff now receive patient data monthly on chronic conditions, such as hypertension and diabetes, from the clinic director. In addition, advanced trainees and providers (medicine, nurse practitioner, and pharmacy) have taken the initiative to identify the problems and topics and pull their own data. Trainees on ambulatory rotations are expected to review their panel data at least one half-day per week. CoEPCE staff evaluate trainee likelihood to use PM and ability to identify patients who benefit from team-based care. The findings are promising, with trainees rating their likelihood and ability at 4.0 or above on a 6-point interval rating scale.

*"PM or what I call accountable care is really more about stewardship, meaning this is a population for whom you are accountable to wellness and that means in many ways actually the person in front of you is less important because you have them and you can implement things. The real question is who's not here and why and what's happening to them because most of the things that impact their long-term outcomes are not things that happen in the hospital. It's how they live their daily lives..."*

*Clinic Director*

At the population-level of chronic disease management, preliminary evidence demonstrates that primary care clinic patient panels are increasingly within target for diabetes and blood pressure measures, as assessed by periodic clinical reports to providers.

### **Participants' Satisfaction with Interventions**

The CoEPCE collects data on trainee satisfaction with their PM experience after each teaching session and as trainees graduate from the program. Anecdotally, trainees report they would prefer earlier

instruction on patient care data so that they could apply the techniques for management of their patient panels. Additionally, CoEPCE and non-CoEPCE trainees report satisfaction from being able to spend more time with a patient's care beyond the clinic appointment, during PM sessions, and "actually taking care of their medical problems" (CoEPCE trainee) as part of the learning process.

### ***CoEPCE Functions***

The Seattle CoEPCE has demonstrated to facility leadership the value of teaching the utilization of data to improve team-based, patient and population care. PM is slated to continue under Stage 2 of the CoEPCE program.

### ***Primary Care Delivery System***

Some of the PM topics have resulted in systems-level improvements, such as reducing unnecessary use of the ER for non-acute conditions and better opioid prescription monitoring. Moreover, PM supports everyone working at the top of his/her professional capability. For example, the RN care manager has the impetus to do diabetes education with a particular patient.

### ***Primary Care Services***

Since CoEPCE began teaching PM, the Seattle primary care clinic has committed to the regular access and review of data, which encourages the alignment of standards of care for chronic disease management so that everyone is working toward the same benchmark goals.

PM topics have spun off quality improvement (QI) projects resulting in new clinic processes and programs. Project examples include a process for managing wounds in primary care and a process to assure timely follow-up after an ED visit. Other areas for expansion include a follow-up QI project to reduce non-acute ER visits by patients on the homeless PACT panel and interventions for better management of care for women Veterans with mental health needs. PM has also "spilled over" to non-CoEPCE teams and to other clinic activities, such as strengthening huddles of team members specifically related to panel data and addressing selected patient cases between visits. Pharmacy residents and faculty are more involved in reviewing the panel before patients are seen, to review medication lists and identifying duplications.

### ***Patient Outcomes***

At the individual level, PM provide a mechanism to systemically review trainee panel patients with out-of-target clinical measures, and develop new care approaches involving interprofessional strategies and problem-solving. PM also helps to identify patients who have missed follow-up, reducing the risk that patients with chronic care needs will be lost to clinical engagement if they are not reminded or do not pursue appointments. The PM trained PACT reaches out to patients with new care plans, who might not otherwise get care before the next clinic visit. Second, patients have the benefit of a team that manages their health needs. For example, including the clinical pharmacists in the PM sessions ensures timely identification of medication interactions and the potential side effects that a patient might experience. Additionally, PM contributes to the care coordination model by involving individuals on the primary care team who know the patient. These members review the patient's data between

visits and initiate team-based changes to the care plan to improve care. More team members connect with a patient, resulting in more intense care and quicker follow-up to determine the effectiveness of a treatment plan.

## **THE FUTURE**

Under Stage 2 of the CoEPCE program, the Seattle CoEPCE intends to lead in the creation of a panel management toolkit as well as a Data Access Guide that will allow VA facilities with limited data management expertise to access their chronic disease metrics. Second, the CoEPCE will continue its dissemination efforts locally to other residents in the internal medicine residency program in all of its continuity clinics. Additionally, there is high interest by DNP training programs to expand and export longitudinal training experience panel management curriculum to non-VA based students.

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## RESOURCES

National VA CoEPCE Websites: <http://www.va.gov/oaa/coepce/>

National VA APACT Website, Publications, Executive Briefing Videos: [VA OAA Academic PACT Website](#)

Seattle CoEPCE Website: <http://www.va.gov/oaa/coepce/seattle.asp>

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## CASE STUDY #5: INITIATIVE TO MINIMIZE PHARMACEUTICAL RISK IN OLDER VETERANS (IMPROVE) POLYPHARMACY CLINIC

*West Haven VA Center of Excellence in Primary Care Education (CoEPCE)  
Interprofessional Academic Patient Aligned Care Team (iAPACT)*

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### SUMMARY

**Key Theme of the Innovation:** Trainee-led performance improvement process that reduces polypharmacy in elderly Veterans and enhances trainee skills and knowledge related to safe prescribing.

#### Goals:

- Pre-Clinic Conferences
- Trainee led/faculty supervised group and clinic visit
- Comprehensive Medication Review
- Shared decision making about medication tradeoffs in context of Veterans goals and preferences
- Develop, execute and monitor prescribing and deprescribing plans

**Trainees:** Medicine, Nursing, Pharmacy, Psychology and other trainees as available

**Faculty and/or Staff:** Geriatric medicine faculty, pharmacy, primary care and psychology faculty



West Haven CoEPCE IMPROVE Session

## **SUMMARY**

This case study describes the Initiative to Minimize Pharmaceutical Risk in Older Veterans (IMPROVE), an interprofessional polypharmacy clinic for intensive management of medication regimens of high-risk patients. This clinic is held monthly and involves internal medicine residents, nurse practitioner residents, pharmacy and health psychology trainees, and VA faculty working together to help older Veterans better manage their medications. Using a two-pronged approach—a 45-minute Group Visit and a 60-minute individual clinic visit—this trainee-led, faculty-supervised interprofessional education activity aims to increase trainee knowledge, skills, and performance in safe prescribing, strengthen interprofessional learning and team-based care, and reduce polypharmacy in elderly Veterans.

## **INTRODUCTION**

In 2011, five VA Medical Centers were selected by the Office of Academic Affiliations (OAA) to establish Centers of Excellence in Primary Care Education (CoEPCE). Part of the VA's New Models of Care initiative, the five Centers of Excellence or CoE's (Boise, Cleveland, San Francisco, Seattle and West Haven) are utilizing VA primary care settings to develop and test innovative approaches to prepare physician residents and students, advanced practice nurse residents and undergraduate nursing students, and other professions of health trainees (such as pharmacy, social work, psychology, physician assistants, etc.) for primary care practice in the 21st Century. The CoE's are developing, implementing and evaluating curricula designed to prepare learners from relevant professions to practice in patient-centered, interprofessional team-based primary care settings. The curricula at all CoE's must address four core domains (Table 1).

Generally, healthcare professional education programs do not have many opportunities for workplace learning settings where trainees from different professions can learn and work together to provide care to patients in real time. With the emphasis on patient-centered medical homes (PCMH) (AHRQ, 2016) and team-based care in the Affordable Care Act (HHS, 2016), there is an imperative to develop new training models that provide skills to future health professionals to address this gap.

The VA Connecticut Healthcare System (VACHS) CoEPCE developed and implemented an education and practice-based “immersion” learning model with physician residents, nurse practitioner residents and pre-masters nurse practitioner students, pharmacy residents, post-doctorate psychology learners, and physician assistant learners. This interprofessional, collaborative team model breaks from the traditional independent model of siloed primary care providers caring for a panel of patients.

## **METHODS**

In 2015, evaluators from the Office of Academic Affiliations reviewed background documents and conducted open-ended interviews with 12 West Haven CoEPCE staff, participating trainees, VA faculty, VA facility leadership, and affiliate faculty. Informants described their involvement, challenges encountered, and benefits of the IMPROVE program to trainees, Veterans, and VA.

## **THE ISSUE: LACK OF CLINICAL APPROACHES TO INTERPROFESSIONAL EDUCATION AND CARE**

Clinicians are increasingly required to optimize the health of elderly patients with polypharmacy reduction. Polypharmacy is a common problem among older adults with multiple chronic conditions, which places patients at higher risk of multiple negative health outcomes (Kantor et al., 2015; Fried et al., 2014). The typical primary care visit rarely allows for a thorough review of a patient's medications, much less the identification of strategies to reduce polypharmacy and improve medication management. Rather, the complexity inherent to polypharmacy makes it an ideal challenge for a team-based approach.

## **PROMISING SOLUTION: IMPROVE—A TEAM APPROACH TO ADDRESSING THE MEDICATION NEEDS OF OLDER VETERANS**

A key CoEPCE program aim is to expand work place learning instruction strategies, and to create more clinical opportunities for CoEPCE trainees to work together as a team to anticipate and address the health care needs of Veterans. To address this training need, the West Haven CoEPCE developed the Initiative to Minimize Pharmaceutical Risk in Older Veterans (IMPROVE). IMPROVE focuses on high-need patients and provides a venue in which trainees and supervisors from different professions can collaborate on a specific patient case, using a patient-centered framework. IMPROVE can be easily applied to a range of medication-related aims, such as reducing medications, managing medications and adherence, and addressing side effects. These goals are two-fold: 1) implement a trainee-led performance improvement project that reduces polypharmacy in elderly Veterans, and 2) develop a hands-on, experiential geriatrics training program that enhances trainee skills and knowledge related to safe prescribing.

*The first big step is just convincing people that this is important and could be a priority. And then the rest is logistical and might vary from site-to-site. The patient population at each clinic matters too.*  
(CoE Chief Resident)

## **PLANNING AND IMPLEMENTATION**

IMPROVE has its origins in a scholarly PI project developed by a physician resident trainee as part of his completion requirements. Planning for IMPROVE involved VA health psychology, geriatric medicine faculty, nurse practitioner faculty, and geriatric pharmacy residents and faculty. Planning started in September 2013 with a series of pilot clinics and became an official project of the West Haven CoE in September 2014. The intervention required no change in West Haven VAMC policy. However, the initiative required buy-in from West Haven CoE leadership and the Director of the VA primary care clinic.



**Table 1: CoEPCE Core Domains**

**Shared Decision-Making (SDM):** Care is aligned with the values, preferences and cultural perspectives of the patient. Curricula focus is on communication skills necessary to promote patient's self-efficacy.

**Sustained Relationships (SR):** Care is designated to promote continuity of care; curricula focus on longitudinal learning relationships.

**Interprofessional Collaboration (IPC):** Care is team based, efficient and coordinated, curricula focus is on developing trustful, collaborative relationships.

**Performance Improvement (PI):** Care is designed to optimize the health of populations; curricula focus on using the methodology of continuous improvement in redesigning care to achieve quality outcomes.

### **Curriculum**

IMPROVE is an educational, workplace-learning, clinical activity that combines a one-hour trainee teaching session, a 45-minute group visit, and a 60-minute individual clinic visit to address the complex problem of polypharmacy. It emphasizes the sharing of trainee and faculty backgrounds by serving as a venue for interprofessional trainees and providers to discuss pharmacologic and non-pharmacologic treatment in the elderly and brainstorm strategies to optimize treatment regimens, minimize risk, and execute medication plans with patients.

All CoEPCE trainees in West Haven are required to participate in IMPROVE and on average, each trainee presents and conducts at least three visits per year. Up to five trainees participate in each IMPROVE session. Trainees are responsible for reviewing their own panels to identify patients who might benefit from participation, followed by inviting the patient to participate. Patients are instructed to bring their pill bottles to the visit. To prepare for the polypharmacy clinic, the trainees, the geriatrician, and the geriatric pharmacist perform an extensive medication chart review using the *Medication Review Worksheet* developed by West Haven VA facility providers (Mecca et al., 2015). They also work with a Protocol for Medication Discontinuation which was compiled by West Haven VA facility providers. The teams use a variety of tools that guide appropriate prescribing in older adult populations (American Geriatrics Society, 2015; O'Mahoney et al., 2014). During a pre-clinic conference, trainees present their patients to the interprofessional team for discussion, and also participate in a short topic discussion led by a pharmacist, geriatrician, or health psychologist on a topic related to prescribing safety in older adults or non-pharmacologic treatments.

IMPROVE emphasizes a patient-centered approach to develop, execute and monitor medication plans. Patients and their family members are invited by their trainee provider to participate in a group visit. Typically, trainees invite patients age 65 or older who have ten or more medications and are considered appropriate for a group visit. Patients can decline to participate in the group visit and instead discuss their medications at his or her next regular visit. Participating Veterans receive a reminder call from the trainee one to two days before the visit. During the group visit, topics addressed

include medication management, medication adherence, medication side effects, and medication disposal. The recommended minimum number of patients for a group visit is three in order to generate discussion. The maximum is eight patients, to ensure everyone has adequate opportunity to participate. Five patients in a group visit are typical.

The group visit process is based on health psychology strategies, which often incorporate group-based engagement with patients. The health psychologist can give advice to facilitate the visit and optimize participant involvement. There is a discussion facilitator guide that lists the education points to be covered by a designated trainee facilitator and sample questions to guide the discussion (<http://improvepolypharmacy.yale.edu/>). A health psychology resident and other rotating trainees co-facilitate the group visit with a goal to reach out to each group member, including family members, and have them discuss their perceptions and share their concerns and treatment goals. There is shared responsibility among the trainee participants to address the educational material, as well as involve their respective patients during the sessions.

Immediately following the group visit, trainees conduct a one-hour clinic session that includes medication reconciliation, a review of the *IMPROVE Questionnaire* (Available at <http://improvepolypharmacy.yale.edu/>), and the *St. Louis University Mental Status (SLUMS)* (Tariq, Tumosa et al., 2006) exam to assess changes in cognition. Discussion involved the patient's medication list as well as possible changes that could be made to the list. Using shared decision-making techniques, this conversation considers the patients' treatment goals, their feelings about their medications, which they would like to stop, and the side effects they may be experiencing. After the individual visit is completed, the trainee participates in a 10-minute interprofessional precepting session, which may include a geriatrician, a pharmacist and a health psychologist, to discuss adjustments to medications and a safe follow-up plan, including appropriate referrals. Trainees discuss the plan with the patient and send a letter describing the plan shortly after the visit.

IMPROVE combines didactic teaching with experiential education. It embodies the four core domains that shape the CoEPCE curriculum. First, trainees learn interprofessional collaboration concepts, including highlighting the roles of each profession and working with an interprofessional team to solve problems. Second, CoEPCE trainees learn performance improvement under the supervision of faculty. Third, IMPROVE allows trainees to develop sustained relationships with other team members while improving the quality of the clinic experience, as well as with patients through increased continuity of care. Trainees see patients on their panel and are responsible for outreach before and after the visit. Finally, with a focus on personalized patient goals, trainees have the opportunity to further develop skills in SDM.

The IMPROVE model continues to evolve. The original curriculum involved an hour-long pre-clinic preparation session prior to the group visit in which trainees and faculty discussed the medication review for each patient scheduled for the day. This preparation session was later shortened to 40 minutes, and a 20-minute didactic component was added to create the current pre-clinic session. The didactic component focuses on a specific topic in appropriate prescribing for older patients. For

example, one didactic lesson is on a particular class of medications, its common adverse effects, and practical prescribing and ‘deprescribing’ strategies for that class. Initially, the oldest patients or patients who could be grouped thematically, such as those taking both narcotics and benzodiazepines, were invited to participate, but that limited the number of appropriate patients within the CoEPCE. Currently, trainees identify a patient from their own panels who might benefit, based on age, number of medications, or potential medication-related concerns such as falls, cognitive impairment, or other concerns for adverse drug effects. These trainees have the unique opportunity to apply learned strategies to their own patients to continue to optimize the medication regimen even after the IMPROVE visit. Another significant change was the inclusion of Veterans who are co-managed with primary care providers outside the VA, because we found that diversity in providers and care put these patients at higher risk.

***Faculty role:***

CoE faculty and non-CoE VA faculty participate in supervisory, consulting, teaching and precepting roles. Some faculty members such as the health psychologists are already located in or near the VA primary care clinic, so they can assist in curriculum development and execution during their regular clinic duties. The geriatrician reviews the patient’s health records before the patients come into the clinic, participates in the group visit, and co-precepts during the 1:1 patient visits. Collaboration is inherent in IMPROVE. For example, the geriatrician works with the geriatric pharmacist to identify and teach the educational topic. IMPROVE is characterized by a strong faculty/trainee partnership, with trainees playing roles as both teacher and facilitator in addition to learning how to take a team approach to polypharmacy.

***Resources:***

IMPROVE requires administrative and academic support, especially faculty and trainee preparation of education sessions. The CoEPCE internal medicine resident and the internal medicine Chief Resident work with the health technicians for each PACT to enter the information into the VA medical scheduling system. Trainee clinic time is blocked for their group visits in advance. Patients are scheduled one to three weeks in advance. Trainees and faculty are expected to review the medication review worksheet and resources prior to the visit. One CoEPCE faculty member reviews patients prior to the pre-clinic session (about an hour of preparation per session). Sufficient space is also required: a room large enough to accommodate up to 10 people for both didactic lessons and pre-clinic sessions, a facility patient education conference room for the group visit, and up to five clinic exam rooms. CoEPCE staff developed a templated note in CPRS, the VA’s electronic medical record system to guide trainees step-by-step through the clinic visit and allow them to directly enter information into the system (<http://improvepolypharmacy.yale.edu/>).

## **Monitoring and Assessment:**

*I think the most important part of the experience is that they're learning while doing and they're learning in a setting they're always in...seeing their patients and looking at this particular problem and learning ways to fix it in their patients.*  
(CoE Faculty)

CoEPCE staff are evaluating IMPROVE by building a database for patient-level and trainee-level outcomes, including changes in trainee knowledge and attitudes over time. The CoEPCE also validated the polypharmacy knowledge assessment tool for medicine and nurse practitioner trainees (in review).

## **PARTNERSHIPS**

IMPROVE has greatly benefited from partnerships with facility department leadership, particularly involvement of pharmacy staff. In addition, we have partnered with both the health psychology and pharmacy faculty and trainees to participate in the program. Geriatrics faculty and trainees have also contributed extensively to IMPROVE. Future goals include offering the program to non-COEPCE patients throughout primary care.

The Yale Primary Care Internal Medicine Residency program and the Yale Categorical Internal Medicine Residency Program are integral partners to the CoEPCE. IMPROVE supports their mandate to encourage interprofessional teamwork in primary care, meet ACGME interprofessional milestones and promote individual trainee scholarship and performance improvement in areas of broad applicability. IMPROVE is also an opportunity to share ideas across institutions and stimulate new collaborations and dissemination of the model to other primary care settings outside the VA.

## **CHALLENGES AND SOLUTIONS**

The demand for increased direct patient care pressures programs like IMPROVE, which is a time intensive process with high impact on a few patients. The assumption is that managing medications will save money in the long-run but in the short-term a strong case has to be made for securing resources, particularly blocking provider time and securing an Education Room for group visits and clinic exam rooms for individual visits. First, decision-makers need to be convinced that polypharmacy is important and should be a priority in health care professional's training. The CoEPCE has tried different configurations to increase the number of patients being seen, such as having more than one IMPROVE session in an afternoon, but trainees found this to be labor intensive and stressful.

Second, patients with medications prescribed by providers outside the VA require additional communication and coordination to reduce medications. The CoEPCE initially excluded these patients, but after realizing that these patients were some of those that needed the most help, it has developed a process for reaching out to outside providers and coordinating care. Additionally, there is significant diversity in patient polypharmacy needs, which can range from adherence problems to the challenge

of complex psychosocial needs that are more easily (but less effectively) addressed with medications. The issue of polypharmacy is further complicated by evolving understandings of medications. IMPROVE is an effective vehicle for staying abreast of the current science in medications and their management, especially in complex older patients with multiple chronic conditions.

Other challenges include developing a templated electronic note that interfaces with the VA IT system. The process of creating a template, obtaining approval from the forms committee, and working with IT personnel to implement the template was more time-intensive than anticipated and required multiple iterations of proofreading and editing.

*The resources are structured differently between the VA system and a non-VA system, so the type of personnel may vary a little bit, but the basic concept of having a specialty consultative opportunity for trainees in practice to refer their patients to and collaborate with in a professional way to manage medications, especially for people with chronic disease, is at the core of primary care training.*

*(VA Academic Affiliate Representative)*

#### **FACTORS FOR SUCCESS**

The implementation of IMPROVE was facilitated by West Haven CoEPCE faculty and leadership, VA facility and primary care clinic leadership in their commitment to support new models of trainee education. Additionally, there is strong CoEPCE leadership and collaboration at all levels—Co-Directors, faculty, and trainees—for the program. High interprofessional trainee interest, organizational insight, and an academic orientation were critical for developing and launching IMPROVE.

*...a great, unique learning experience to have a team based care approach with the patient. We generally always are precepting with either a physician or nurse practitioner but to really sit down and precept with a physician, a pharmacist, a geriatrician and a health psychologist that's pretty great because they all have slightly different perspectives and may raise things that I didn't pick up on. So in terms of the precepting experience, it's definitely very robust.*

*(CoE Trainee)*

Additionally, there is synergy with other team-based professions. Geriatrics has a tradition of working in multi-disciplinary teams as well as working with SDM concepts as part of care discussions. High interest and collaboration by a geriatrician and an experienced geriatric pharmacist has been key. The two specialties complement one another and address the complex health needs of participating Veterans. Health psychologists transition patients to non-pharmacologic treatments, such as sleep hygiene education and cognitive behavioral therapy, in addition to exploring barriers to behavior change.

Another factor for success has been the CoEPCE framework and expertise in interprofessional education. While refining the model, program planners tapped into existing expertise in polypharmacy

within the VA—the Geriatrics, Pharmacy, and Clinical Health Psychology Departments. The success of the individual components—the preparation session, the group visit, and the 1:1 patient visit—is in large part the result of a collective effort by CoEPCE staff and the integration of CoEPCE staff through coordination, communications, logistics, quality improvement, and faculty involvement from multiple professions.

The IMPROVE model is flexible and can accommodate diverse patient interests and issues. Model components are based on sound practices that have demonstrated success in other arenas, such as diabetes group visits. The model can also accommodate diverse trainee levels. Senior trainees can be more independent in developing their care plans, teaching the didactic topic, or precepting during the 1:1 patient exam.

### **ACCOMPLISHMENTS AND BENEFITS**

Trainees are using team skills to provide patient-centered care. They are strengthening their clinical skills through exposure to patients in a group visit and 1:1 clinic visit. There have been significant improvements in the trainees' provision of individual patient care. Key IMPROVE outcomes include the following.

#### ***Expanded CoEPCE interprofessional education capacity***

Unlike a traditional didactic, IMPROVE is an opportunity for health care professionals to work together to provide care in a clinic setting. It also expands CoEPCE interprofessional education capacity through: co-location of different trainee and faculty professions during the conference session. This combination trains participants to work as a team and reflect on patients together, which has strengthened communications among professions. The model provides sufficient time and expertise to discuss the medications in detail and as a team, something that would not normally happen during a regular primary care visit.

#### ***Expanded participant knowledge, attitudes, skills, and competencies***

*I think it's been an eye-opening experience for a lot of trainees really understanding polypharmacy, and it's been interesting because I see it in their notes when I get residents who refer patients for diabetes management to our continuity clinic. You see the polypharmacy because of this training. They take it to another level I've never seen with residents in the past. They really take it to heart and really try to look at patients' medications and make sure there's a need for what they are taking, and there's an indication for the medicine they're taking.*

*(VA Facility Service Chief – Pharmacy)*

CoEPCE trainees learn about medication management, its importance in preventing complications and improving patient health outcomes. Trainees of all professions learn to translate the skills they learn in IMPROVE to other patients, such as how to perform a complete medication reconciliation or lead a discussion using SDM. IMPROVE also provides techniques useful in other contexts, such as group visits and consideration of different medication options for patients that have been cared for by other providers.

*I don't think I ever want to be in a clinic where I don't have access to other disciplines. It's been invaluable in taking care of my patients. I feel I do a better job when I have people around me who have a different perspective.*  
(CoE Trainee)

### **Increased participant interprofessional collaboration**

*As a team, we're there to provide education and perspective, but seeing the cross-sharing between patients, I definitely see the sense of 'Wow – I'm not the only one who's struggling with this.' Many have developed their own strategies for managing it... 'Well, I had that problem and this is what I did to help myself kind of keep track.*  
(CoE Faculty)

Understanding and leveraging the expertise of trainees and faculty from different professions is a primary goal of IMPROVE. IMPROVE education sessions, the group visit and precepting model are intentionally designed to break down silos and foster a team approach to care, which supports the PACT team model. Trainees and faculty all have their unique strengths and look at the issue from a different perspective, which increases the likelihood that the patient will hear a preferred solution or strategy, especially during the group visit. The end result is that trainees are more well-rounded and become better practitioners who seek advice from other professions and work well in teams.

*It builds teamwork even more than there already is teamwork...we're in this big soup kitchen together, working for the betterment of the patient. Everyone has a level playing field...it makes the teamwork even better together. And the team listens to other people as far as the pharmacist, health psychologist...it takes it to another level.*

(VA Facility Service Chief – Pharmacy)

Trainees are expected to learn about other professions and their skill sets. For example, trainees learn early on the roles and scopes of practice of Pharmacists and Health Psychologists for more effective referrals. Discussions during the session before the group visit may bring conditions like depression to the trainees' attention. This is significant because issues like patient motivation may be better handled from a behavioral perspective.

### **Expanded participant clinical performance**

IMPROVE is an opportunity for CoEPCE trainees to expand their clinical expertise. It provides exposure to a variety of patients and patient care needs, and is an opportunity to present a high-risk patient to colleagues of various professions. As of December 2015, approximately thirty internal medicine residents and 6 nurse practitioner residents have seen patients in the polypharmacy clinic. Each year, four nurse practitioner residents, two health psychology residents, four clinical pharmacy residents, and one geriatric pharmacy resident participate in the IMPROVE Clinic during their year-long training program. 17-19 Internal Medicine residents participate in IMPROVE during their three year training program.



A structured forum for discussing patients and their care options supports professionals' utilization of their full scope of their practice. Trainees learn and apply team skills, such as communication and the warm handoff<sup>12</sup>, which can be used in other clinic settings. An interprofessional care plan supports trainee clinical performance, providing a more robust approach to patient care than individual providers might on their own.

*I am using the skills I learned [in IMPROVE] with other patients on my panel.*

*(CoE medical resident)*

### **Improved patient outcomes**

IMPROVE is an enriched care plan informed by multiple professions with the potential to improve medication use and provide better care. Veterans are also receiving better medication education as well as access to a health psychologist who can help them with goal setting and effective behavioral interventions. On average, five patients participate each month. As of December 2015, 68 patients have participated in IMPROVE.

The Group Visit and the 1:1 patient visits focus exclusively on medication issues and solutions, which would be less common in a typical primary care visit with a complex patient who brings a list of agenda items. In addition to taking a thorough look at their medications and related problems, it also educates patients on related issues such as sleep hygiene. Participating Veterans are also encouraged to share their concerns, experiences, and solutions with the group, which may increase the saliency of the message beyond what is offered in counseling from a provider.

To date, preliminary data suggests that in some patients, cognition (as measured with SLUMS after six months) has modestly improved after decreasing their medications. Other outcomes being monitored in follow-up are utilization of care, reported history of falls, number of medications, and vital signs at initial and follow up visits.

Patients experience increased continuity of care because the patient now has a team focusing on his or her care. Team members have a shared understanding of the patient's situation and are better able to establish therapeutic rapport with patients during the group visit. Moreover, CoEPCE trainees and

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<sup>12</sup> A warm handoff is often described as an intervention in which: "a clinician directly introduces a patient to another clinician at the time of the patient's visit, and often a brief encounter between the patient and the health care professional occurs." (Cohen, et al., 2015).



faculty try to ensure that everyone knows about and concurs with medication changes including outside providers and family members.

### ***Improved CoEPCE participant satisfaction***

Patients that are presented at IMPROVE can be particularly challenging and there may be a psychological benefit to working with a team to develop a new care plan. Providers are able to get input and look at the patient in a new light.

*But we've seen from patients we had so far that we are safely and consistently discontinuing on the order of two to three medications per patient on average. Patients appear to enjoy the visit and have a better understanding of what their medications are for.*

*(CoE Faculty)*

Results of post-visit patient satisfaction questionnaires are encouraging, with a high level of patient satisfaction and perception of clinical benefit. Patients identify an improvement in the understanding of their medications, feel they are able to safely decrease their medications, and are interested in participating again.

*It's pushing our trainees to pick up the phone and get in touch with the specialist and have that conversation and ultimately improves the care of the patient.*

*(CoE Faculty)*

### ***Improved CoEPCE primary care services***

*I think it is doing exactly what I think the CoE is intended to do, which is have a medicine resident walk out of here after graduation with an understanding of what the role of the psychologist might be for something that they might not traditionally have thought about a psychologist as having a role in polypharmacy. Who would equate the two, right? The polypharmacy program is a nice microcosm of what the CoE is trying to do more broadly.*

*(VA Facility Leadership – Clinical Health Psychology)*

IMPROVE expands the prevention and treatment options for populations at risk of hospitalization and adverse outcomes from medication complications, such as adverse effects and drug-drug or drug-disease interactions. Embedding the polypharmacy clinic within the primary care setting rather than in a separate specialty clinic results in an increased likelihood of implementation of pharmacist and geriatrician recommendations for polypharmacy and allows for direct interprofessional education and collaboration.

### ***Improved CoEPCE function***

IMPROVE combines key components of interprofessional education—an enriched clinical training model and knowledge of medications in an elderly population—into a training activity that complements other CoEPCE activities. The model has not only strengthened CoEPCE partnerships with other VA departments and specialties, but has also revealed opportunities for collaboration with

academic affiliates as a means to break down traditional silos among medicine, nursing, pharmacy, geriatrics, and psychology.

### ***Improved VA primary care delivery system***

IMPROVE combines key components of interprofessional education, including all four CoEPCE Core Domains, to provide hands on experience with knowledge learned in other aspects of the CoEPCE training program (e.g., Shared Decision Making strategies for eliciting patient goals, weighing risks and benefits in complex clinical situations, etc.). Physician and nurse practitioner trainees work together with trainees in pharmacy and health psychology in the complex approach to polypharmacy. The model has not only strengthened CoEPCE partnerships with other VA departments and specialties, but has also revealed opportunities for collaboration with academic affiliates as a means to break down traditional silos among medicine, nursing, pharmacy, geriatrics, and psychology. IMPROVE provides the framework for an interprofessional clinic that could be used in the treatment of other complex or high risk chronic conditions.

*It doesn't necessarily have to be about polypharmacy. It could be any complex issue in primary care that requires an inter-professional approach. It could vary depending on the population involved.*

*(CoE Chief Resident)*

### **THE FUTURE**

An opportunity for improvement and expansion includes increased patient involvement (as patients continue to learn that they have a team working on their behalf). Opportunities exist to connect with patients that have several clinicians prescribing medications outside of the CoEPCE to provide comprehensive care and decrease medication complexity.

The CoEPCE has been proactive in increasing the visibility of IMPROVE through multiple presentations at local and national meetings, facilitating collaborations and greater adoption in primary care. Individual and collective IMPROVE components can be adapted to other contexts. For example, the 20-minute geriatrics education session and the forms completed prior and during the patient visit can be readily applied to other complex patients that trainees meet in clinic. Under Stage 2 of the CoEPCE program, the CoEPCE is developing a kit that describes the training process, includes the medication worksheet and assessment tools, and directions for conducting the group visit.

It is hoped that working collaboratively with the West Haven COEPCE polypharmacy faculty, a similar model of education and training will be implemented at the Yale University Primary Care training site in New Haven, CT in the future.

Additionally, the West Haven CoEPCE is planning to partner with the other original CoEPCE program sites to implement similar interprofessional polypharmacy clinics.

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## RESOURCES

National VA CoEPCE Websites: <http://www.va.gov/oaa/coepce/>

National VA APACT Website, Publications, Executive Briefing Videos: [VA OAA Academic PACT Website](#)

VAMC SLUMS Examination: [http://medschool.slu.edu/agingsuccessfully/pdfsurveys/slumsexam\\_05.pdf](http://medschool.slu.edu/agingsuccessfully/pdfsurveys/slumsexam_05.pdf)

IMPROVE Resources: <http://improvepolypharmacy.yale.edu/>

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**VA Office of Academic Affiliations: Centers of Excellence in Primary Care Education**

**Websites:** [www.va.gov/oaa/coepce](http://www.va.gov/oaa/coepce) and [www.va.gov/oaa/apact](http://www.va.gov/oaa/apact)

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