Impact of PACT Implementation through Evidence-Based Quality Improvement (EBQI) on Primary Health Care Professional Emotional Exhaustion, Satisfaction, and Patient Utilization

Susan E. Stockdale, Ph.D.  
VA Greater Los Angeles HSR&D Center for the Study of Healthcare Innovation, Implementation, and Policy, Los Angeles, CA

Lisa S. Meredith, Ph.D.  
RAND Corporation, Santa Monica, CA

Jean Yoon, Ph.D.  
Health Economics Research Center, Palo Alto VA, Palo Alto, CA

PACT Cyberseminar  
June 15, 2016
Collaborators

Lisa V. Rubenstein, MD, MSPH
Elizabeth M. Yano, PhD, MPH
Lisa Altman, MD, MSHS
Tim Dresselhaus, MD, MPH
Phillip Roos, MD
Skye McDougall, PhD
Negar C. Sapir, MPH
Alison B. Hamilton, PhD, MPH
Jacqueline J. Fickel, PhD
Jill E. Darling, MSPH

Jessica Zuchowski, PhD, MPH
Karleen Giannitrapani, PhD
Alexis Huynh, PhD
Hector P. Rodriguez, PhD
John McElroy, MSW
Nina Smith, BA

Funding for Veterans Assessment and Improvement Laboratory (VAIL) provided by the VA Office of Patient Care Services.
Background

• Systematic Quality Improvement well established in hospitals and inpatient health care settings.
• PCMH, team-based care embody QI principles, but lack organizational support for systematic QI
• Few if any models for how to do systematic quality improvement for primary care
• EBQI-PACT: based on previous EBQI interventions for smoking cessation, primary care-mental health integration
Poll Question #1

How familiar are you with Evidence-Based Quality Improvement?

1) Very familiar
2) Somewhat familiar
3) A little familiar
4) Never heard of it
EBQI-PACT

• Veterans Assessment and Improvement Laboratory (VAIL) – VISN 22 PACT Demonstration Lab
• Use EBQI approach to implement PACT
• Clinical-research partnership
  • Started with 3 VISN 22 healthcare systems, rolled out in 3 phases
• Align top management priorities with frontline QI
  – Engage VISN, Healthcare system leaders, local primary care practice leads in priority setting
EBQI-PACT Intervention

• 2 Elements of Intervention Component
  – Develop multi-level organizational infrastructure for implementing EBQI for PACT
  – Facilitated Quality Improvement with external and internal facilitators
EBQI-PACT Infrastructure

Researcher-Clinical Leader partnership including PI, Co-PIs (from Systems 1, 2, and 3), Demonstration Site Leaders, HSR&D researchers

VISN 22 Steering Committee

Healthcare System 1
- Site A Quality Council
- Site D Quality Council
- Site G Quality Council

Healthcare System 2
- Healthcare System 2 Quality Council
- Site B Quality Council
- Site E Quality Council

Healthcare System 3
- Site C Quality Council
- Site F Quality Council

Homelessness workgroup
Education workgroup
Primary care-Mental health Integration
Pharmacy workgroup
Patient-centered workgroup
Infrastructure – Quality Councils

• Three goals
  1) Foster interdisciplinary leadership for PACT QI
  2) Establish a structured, local QI process with oversight and accountability mechanisms
  3) Facilitate frontline QI innovation within the demonstration practices

• Analyses of key stakeholder interviews for first 6 sites shows all sites met first 2, 4 of 6 met the third
Facilitated QI

- Priority setting process engaged VISN, Healthcare System, and local practice leaders
- QC's and workgroups submitted proposals for QI projects for Steering Committee review and approval
- Approved projects received support from VAIL researchers/staff, release time for leads, some funding
- VAIL provided salary support for one Quality Council coordinator for each healthcare system
- VAIL provided mentoring, coaching, help with measures/data, organized learning sessions
Facilitated QI

- QCs and workgroups submitted total of 71 project proposals (2011-2014)
- 21 projects approved across 4 rounds of Steering Committee review
- Resulted in 12 toolkits posted on VAIL SharePoint site for spread across VA
References for EBQI


Impact of the VA’s Medical Home Demonstration on Primary Health Care
Health Professional Emotional Exhaustion and Satisfaction

Lisa S. Meredith, Ph.D.
Benjamin Batorsky, M.A. Doctoral Fellow
Matthew Cefalu, Ph.D.
Jill Darling, M.S.H.S.
Susan Stockdale, Ph.D.
Elizabeth M. Yano, Ph.D., M.S.P.H.
Lisa V. Rubenstein, M.D., M.S.P.H.
New models of care hold promise

• New patient-centered primary care models can potentially improve primary care provider (PCP) and staff morale
  – Patient-Centered Medical Home (PCMH)
  – Including the VA’s Patient Aligned Care Team (PACT) initiative (launched in 2010)

• They also may improve efficiency by reducing unnecessary utilization and costs, and ultimately improve patient care
But implementation is challenging

• May increase PCP/staff burnout and lower satisfaction due to high levels of transformational change required

• Use of evidence-based quality improvement (EBQI)* to facilitate change is promising
  – Multi-level strategy to promote regional and local primary care practice engagement in innovation
  – Ease potential PCP/staff burnout and improve job satisfaction during system-wide transformation to PCMH

*Rubenstein et al., 2010; 2014
“Joy in practice” depends on…

• How change fatigue is managed and the extent of implementation challenges
  – Autonomy
  – Participatory decision-making
  – Sufficient and stable staffing
  – Communication
  – Leadership

• PCMH includes features that create “joy” but poor morale during transformation can have negative consequences
Study Design

• Quasi-experimental design
• Compared the impact of PACT transformation alone to PACT + EBQI on burnout (emotional exhaustion) and job satisfaction
  – 3 Early EBQI intervention clinics (August 2010)
  – 3 Late EBQI intervention clinics (May 2012)
  – 17 Comparison clinics
EBQI Intervention Evaluation

• Reduce PCP/staff burnout and improve satisfaction during the VA’s system-wide roll-out to PCMH
  – Across over 900 practices
• Track changes and assess the impact of EBQI in a longitudinal cohort of PCPs/staff over 3.3 years in 23 VISN 22 clinics
• Repeated measures analysis of three surveys:
  – Wave 1 (11/30/11 - 3/13/12)
  – Wave 2 (8/1/13 - 10/11/13)
  – Wave 3 (9/10/15 - 1/8/16)
Analytic Model of the Direct and Mediated Impact of PACT/VAIL Implementation on PCC and Staff Morale

Mediating Variables (M)

PCC/Staff Perceptions of PACT
  Efficacy
  Experience
  Effectiveness

Independent Variable (X)
PACT Implementation

Early EBQI-PACT Intervention
Late EBQI-PACT Intervention
Comparison Group

Dependent Variables (Y)
PCC/Staff Morale
Emotional Exhaustion
Job Satisfaction
Poll

What is your primary role in the VA?

A. PACT Physician
B. PACT Nurse
C. Other Primary Care Role (e.g., Dietician, Pharmacist, Social Worker)
D. Investigator or Research Staff
E. Administrator
F. Other
Survey Response Rates by Staff Type and Wave

<table>
<thead>
<tr>
<th>Wave</th>
<th>PCPs</th>
<th>Staff</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>54</td>
<td>71</td>
<td>63</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
<td>52</td>
<td>48</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
<td>52</td>
<td>48</td>
</tr>
</tbody>
</table>

% Complete
## Sample Demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>PCPs (n=107)</th>
<th>Staff (n=249)</th>
<th>All (n=356)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, n (%)</td>
<td>45 (42.1)</td>
<td>196 (78.7)</td>
<td>241 (67.7)*</td>
</tr>
<tr>
<td>Latino, n (%)</td>
<td>8 (7.5)</td>
<td>27 (10.8)</td>
<td>35 (9.8)</td>
</tr>
<tr>
<td>Non-white Non-Latino, n (%)</td>
<td>37 (34.6)</td>
<td>121 (48.6)</td>
<td>158 (44.4)*</td>
</tr>
<tr>
<td>Age, mean years (SD)</td>
<td>49.9 (9.2)</td>
<td>45.5 (10.7)</td>
<td>46.8 (10.5)*</td>
</tr>
<tr>
<td>Years in clinic, mean (SD)</td>
<td>11.1 (9.0)</td>
<td>5.2 (6.3)</td>
<td>7.0 (7.7)*</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>45 (42.1)</td>
<td>196 (78.7)</td>
<td>241 (67.7)*</td>
</tr>
</tbody>
</table>

*p<.05 for difference between PCPs and staff
## Sample Professional Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>PCPs (n=107)</th>
<th>Staff (n=249)</th>
<th>All (n=356)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician*</td>
<td>107 (70.0)</td>
<td>_</td>
<td>131 (25.4)</td>
</tr>
<tr>
<td>Gen Practice/Family Med</td>
<td>10 (9.3)</td>
<td>_</td>
<td>14 (2.7)</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>59 (55.1)</td>
<td>_</td>
<td>110 (2.1)</td>
</tr>
<tr>
<td>Other Specialty</td>
<td>6 (5.6)</td>
<td>_</td>
<td>7 (1.4)</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>28 (26.2)</td>
<td>_</td>
<td>55 (10.7)</td>
</tr>
<tr>
<td>Physician Assistant</td>
<td>4 (3.7)</td>
<td>_</td>
<td>5 (1.0)</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>_</td>
<td>97 (39.0)</td>
<td>108 (21.0)</td>
</tr>
<tr>
<td>Licensed Practical/Voc.Nurse</td>
<td>_</td>
<td>78 (31.3)</td>
<td>126 (24.7)</td>
</tr>
<tr>
<td>Mental Health Professional</td>
<td>_</td>
<td>14 (5.6)</td>
<td>12 (2.3)</td>
</tr>
<tr>
<td>Dietician or Nutritionist</td>
<td>_</td>
<td>8 (3.2)</td>
<td>7 (1.4)</td>
</tr>
<tr>
<td>MedicalTech/Assistant/Clerk</td>
<td>_</td>
<td>29 (11.6)</td>
<td>50 (9.7)</td>
</tr>
</tbody>
</table>

*Other specialty includes rheumatology, geriatrics, and infectious disease. Data are missing for 32 physicians.
Change in Burnout Scores (Emotional Exhaustion) Across Wave by Intervention Group for Primary Care Providers (PCPs) and Staff

PCPs

Staff

Comparison Group
Early EBQI Intervention
Late EBQI Intervention

Wave 1 | Wave 2 | Wave 3
PCPs

Wave 1 | Wave 2 | Wave 3
Staff
Change in Job Satisfaction Across Wave by Intervention Group for Primary Care Providers
Structural Equations Model Results for Experience with PACT as a Mediator of Burnout (EE) Over Time

*0.12/-0.17*

*0.02/-0.19*

*0.21  0.40**  Experience  Experience  Experience*

Wave 1  Wave 2  Wave 3

*0.13/0.21  -2.02  1.66*

Demo

-1.75/0.03

*0.60**  0.73** Burnout  Burnout  Burnout*

Wave 1  Wave 2  Wave 3

1.90/0.25  0.40**  Experience  Experience  Experience

Wave 1  Wave 2  Wave 3

-3.90/-7.04*

*p<.05; **p<.01; Coefficients represent early/late intervention cohorts.
Summary of Findings and Implications

• EBQI was effective in reducing burnout for PCPs (but not staff) relative to PACT alone
  – Effect size of 0.40 of a standard deviation on the 0-45 point EE dimension of burnout
• No effect of EBQI on increasing job satisfaction
  – Trend for increase over time for the early EBQI phase (p<.10)
• Use of EBQI to support PCMH transformation may alleviate burnout and reduce variation in PCMH implementation outcomes across clinics during early implementation
Selected Publications from VAIL


Impact of EBQI-PACT on Patient Utilization

Jean Yoon, M.H.S., Ph.D.
Adam Chow
Lisa V. Rubenstein, M.D., M.S.P.H.
Background

• Many health care systems adopted PCMH, but effects on utilization and costs have varied.
• VA PACT emphasized non-face-to-face care, care coordination, and mental health care access in primary care with potential to reduce unnecessary acute care.
• Hypothesis that EBQI-PACT leads to more telephone care, less primary care, specialty care, mental health and fewer hospitalizations and ED visits.
  – Changes in utilization expected to occur earlier.
Objectives

• To assess changes in health care utilization and costs for patients receiving care from practices using an EBQI approach to implement PACT and comparison practices over a five-year period FY2009-FY2013.
Study Design

- Longitudinal study of patients in EBQI-PACT and regular PACT practices in VISN 22.
- Study cohort of regular primary care users in 34 practices.
- Utilization outcomes obtained from NPCD
- Outpatient encounters for:
  - Primary care, specialty care, mental health/substance abuse care, telephone, diagnostic/radiology, laboratory, ancillary, and ED
- Inpatient stays for all-cause and ACSC
- Outcomes adjusted for patient and practice characteristics.
Study Design

• Phase 1 sites began EBQI by early FY2011; phase 2 sites began EBQI in FY2012; regular PACT did not implement EBQI during study period.
• We created a measure of EBQI-PACT participation status:
  – EBQI-PACT=0 prior to EBQI
  – EBQI-PACT=1 in the year it began and following years
• Also tested interaction term between EBQI-PACT with year to see if differential effect over time.

<table>
<thead>
<tr>
<th>Type of PACT Implementation</th>
<th>Number of Years of EBQI-PACT</th>
<th>Number of Practices</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBQI-PACT phase 1</td>
<td>3</td>
<td>3</td>
<td>16,794</td>
</tr>
<tr>
<td>EBQI-PACT phase 2</td>
<td>2</td>
<td>3</td>
<td>24,317</td>
</tr>
<tr>
<td>PACT only</td>
<td>0</td>
<td>28</td>
<td>95,745</td>
</tr>
</tbody>
</table>
Outpatient Primary Care Encounters

The graph shows the number of encounters per patient over the years after PACT implementation. The solid line represents Primary care PACT only, while the dashed line represents Primary care EBQI-PACT. The number of encounters decreases over time, with a sharper decline in the primary care EBQI-PACT group compared to the primary care PACT only group.
Outpatient Specialty Care Encounters

![Graph showing the number of encounters per patient over the years after PACT implementation.]

- **Number of Encounters/Patient**
  - 4.5
  - 4
  - 3.5
  - 3
  - 2.5
  - 2
  - 1.5
  - 1
  - 0.5
  - 0

- **Year after PACT Implementation**
  - 4
  - PACT only
  - EBQI-PACT

VAIL-PACT VISN22
Outpatient Mental Health Encounters

VAIL-PACT VISN22
Other Outcomes

• No significant effect of EBQI-PACT on telephone encounters, ED visits, hospitalizations, or health care costs.
Conclusion

- Changes more rapid in EBQI-PACT for outpatient encounters but offsetting effects over time.
- Decrease in face-to-face encounters not appeared to be associated with adverse health and may represent more efficient management.
- Shared innovations across VISN may have helped comparison practices to “catch up” to the EBQI practices.
- Support through an EBQI framework may provide the means for practices to fully engage in early practice transformation.
For More Information

Questions/Comments?

Contact Information for VISN 22 PACT Demo Lab

Susan Stockdale, PhD
(susan.stockdale@va.gov)

Lisa Meredith, PhD
(seidel@rand.org)

Jean Yoon, PhD
(jean.yoon@va.gov)