Effect of frontline clinical team participation in a virtual quality improvement learning program on weight management program outcomes: 

Results from the LEAP stepped-wedge randomized controlled trial

July 23, 2020
Introductions

Laura Damschroder, MS, MPH
Research Scientist and Implementation Research Coordinator
VA Ann Arbor Center for Clinical Management Research and PROVE QUERI
Laura.Damschroder@va.gov

Michelle B Freitag, MPH
LEAP Improvement Coach and Project Manager
VA Ann Arbor Center for Clinical Management Research and PROVE QUERI
Michelle.Freitag@va.gov
Disclaimer

The views expressed in this presentation are our own and do not reflect the position or policy of the Department of Veterans Affairs or the United States government.
Our team

Julie Lowery  Jillian Ondreyka
Nicholas Yankey  Madison Stewart
Claire Robinson  Myra Kim
Rich Evans
Jenny Burns

Personalizing Options for Veteran Engagement (PROVE) QUERI program funding from VA QUERI - QUE15-286
Our Partners

National Center for Health Promotion and Disease Prevention

Dr. Jane Kim, Chief Consultant for Preventive Medicine

Dr. Michael Goldstein, Associate Chief Consultant for Preventive Medicine

Dr. Sue Raffa, National Program Director for Weight Management
There is Much to Celebrate

• Obesity screening and brief counseling has been nearly universal (90%+)

• Modest and clinically meaningful weight loss
  – Among MOVE! participants with > 2 visits, 1 in 5 achieve *clinically meaningful* weight loss
  – Especially laudable in context of many Veterans who were on a weight gain trajectory before participating in MOVE!
Variation in Delivery of MOVE!

Goal: 12 visits in 12 months

One bar represents one medical center (FY2013)
Implementation findings from a hybrid III implementation-effectiveness trial of the Diabetes Prevention Program (DPP) in the Veterans Health Administration (VHA)

Laura J. Damschroder, Caitlin M. Reardon, Mona AuYoung, Tannaz Moin, Santanu K. Datta, Jordan B. Sparks, Matthew L. Maciejewski, Nanette I. Steinle, Jane E. Weinreb, Maria Hughes, Lillian F. Pinault, Xinran M. Xiang, Charles Billington and Caroline R. Richardson

Abstract
Background: The Diabetes Prevention Program (DPP) is an effective lifestyle intervention to reduce incidence of type 2 diabetes. However, there is a need to adapt and disseminate this evidence into real-world practice.

Methods: We conducted a hybrid III implementation-effectiveness trial to evaluate the implementation of a DPP in the Veterans Health Administration (VHA) with 12 intervention and 12 comparison clinics.

Results: The intervention clinics implemented DPP with higher fidelity than the comparison clinics and saw a significant reduction in incidence of diabetes.

Conclusions: The results of this trial suggest that the DPP can be successfully implemented in real-world settings, and that it may be an effective strategy to reduce incidence of type 2 diabetes among veterans.
# Recurring Barriers to Implementation & Strategies to Address Them

<table>
<thead>
<tr>
<th>CFIR Domain</th>
<th>Construct</th>
<th>ERIC Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inner Setting</strong></td>
<td>Networks &amp; Communications</td>
<td>Organize clinician implementation team meetings, Promote network weaving</td>
</tr>
<tr>
<td></td>
<td>Compatibility</td>
<td>Promote adaptability, Develop a formal implementation blueprint, Inform local opinion leaders, Conduct cyclical small tests of change</td>
</tr>
<tr>
<td>Leadership Engagement</td>
<td></td>
<td>Involve executive boards</td>
</tr>
<tr>
<td>Available Resources</td>
<td></td>
<td>Access new funding</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>Engaging</td>
<td>Identify and prepare champions, Conduct local consensus discussions</td>
</tr>
<tr>
<td>Reflecting &amp; Evaluating</td>
<td></td>
<td>Audit and provide feedback, Develop and implement tools for quality monitoring</td>
</tr>
<tr>
<td>Engaging</td>
<td></td>
<td>Create a learning collaborative</td>
</tr>
</tbody>
</table>


# Recurring Barriers to Implementation & Strategies to Address Them

<table>
<thead>
<tr>
<th>CFIR Domain</th>
<th>Construct</th>
<th>ERIC Strategy</th>
<th>LEAP Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Setting</td>
<td>Networks &amp; Communications</td>
<td>Organize clinician implementation team meetings, Promote network weaving</td>
<td>Team building, Share Project Charter and Results</td>
</tr>
<tr>
<td></td>
<td>Compatibility</td>
<td>Promote adaptability, Develop a formal implementation blueprint, Inform local opinion leaders, Conduct cyclical small tests of change</td>
<td>Develop Project Charter, Select Change Ideas, Complete Plan-Do-Study-Act (PDSA)</td>
</tr>
<tr>
<td>Leadership Engagement</td>
<td>Involve executive boards</td>
<td></td>
<td>Share Project Charter and Results</td>
</tr>
<tr>
<td>Available Resources</td>
<td>Access new funding</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Process</td>
<td>Engaging</td>
<td>Identify and prepare champions, Conduct local consensus discussions</td>
<td>Provide coaching, Team building</td>
</tr>
<tr>
<td></td>
<td>Reflecting &amp; Evaluating</td>
<td>Audit and provide feedback, Develop and implement tools for quality monitoring</td>
<td>Develop Data Plan, Use Run Charts, Provide UCD Program Reports,</td>
</tr>
<tr>
<td></td>
<td>Engaging</td>
<td>Create a learning collaborative</td>
<td>Virtual Collaborative Sessions</td>
</tr>
</tbody>
</table>
Why LEAP?

Everyone has the power to make Veterans’ healthcare better, even in the face of limited time and resources.
THE LEARN. ENGAGE. ACT. PROCESS. (LEAP) PROGRAM FEATURES:

1. **Accessible** content
2. **Hands-on learning** within a busy clinical setting
3. **Coaching support** to enhance learning and accountability

**LEAP components:**

- **Coaching**
  A LEAP Improvement Coach meets with each team and facilitates virtual collaborative learning sessions.

- **Virtual Learning and Collaboration**
  LEAP written and video guidance is housed virtually. LEAP provides collaboratives to connect peers nationwide.

- **Data**
  LEAP helps teams identify sources of actionable data to monitor impact of changes.

Participating VA Sites
LEAP CURRICULUM

Week 1  
Form a team

5  
Develop a project charter

10  
Test change and collect data

18  
Execute change

26  

+ 6 monthly virtual collaboratives to sustain, scale up, and spread change

What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

Plan  Do  Act  Study
LEAP is listed in VA online Diffusion marketplace

Pathway of Change

Engage Frontline Teams in LEAP

Increase Skill & Use of QI Methods
Year 1: Self-rating of QI Skills Increased

n=36 individuals from 20 teams who responded before and after LEAP (Pilot + Cohorts 1-4)

For each skill area, select the one response that best describes your skill level:

- Develop a change
- Support change with data
- Test a change
- Implement a change
- Spread a change
- Human side of change

* Significant at p<.0001

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Baseline 2.86</th>
<th>Baseline 2.48</th>
<th>Baseline 2.81</th>
<th>Baseline 2.89</th>
<th>Baseline 2.76</th>
<th>Baseline 3.24</th>
<th>Post LEAP *3.83</th>
<th>Post LEAP *3.77</th>
<th>Post LEAP *3.86</th>
<th>Post LEAP *3.94</th>
<th>Post LEAP *3.86</th>
<th>Post LEAP *4.03</th>
</tr>
</thead>
</table>

FAQs:

- Q1: What is QI?
  - A: QI stands for Quality Improvement. It involves systematically identifying problems, analyzing their causes, and implementing solutions to improve processes and outcomes.

- Q2: What are the benefits of LEAP?
  - A: LEAP provides training and support to improve QI skills, leading to better patient outcomes and more efficient healthcare delivery.

- Q3: How many individuals and teams were involved?
  - A: 36 individuals from 20 teams participated in the study.

- Q4: How were the results measured?
  - A: Results were measured through self-ratings before and after the LEAP program.

- Q5: What were the significant findings?
  - A: Significant improvements were observed in several skill areas, with p-values less than 0.0001 indicating statistical significance.
Year 2: **Use of QI Skills Increased**

n=53 individuals from 22 teams who responded before and again 6 months after completing LEAP

Select one response that best describes how often you have used this skill *over the past six months*:

<table>
<thead>
<tr>
<th>Skill</th>
<th>Baseline</th>
<th>6 months Post LEAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a change</td>
<td>1.84</td>
<td>2.36</td>
</tr>
<tr>
<td>Support change with data</td>
<td>2.19</td>
<td>2.58</td>
</tr>
<tr>
<td>Test a change</td>
<td>1.85</td>
<td>2.40</td>
</tr>
<tr>
<td>Spread a change</td>
<td>2.41</td>
<td>2.83</td>
</tr>
<tr>
<td>Human side of change</td>
<td></td>
<td>3.24</td>
</tr>
<tr>
<td>* Significant at p&lt;.05</td>
<td></td>
<td>3.33</td>
</tr>
</tbody>
</table>

* Select one response that best describes how often you have used this skill over the past six months:
Pathway of Change

Engage Frontline Teams in LEAP

Increase Skill & Use of QI Methods

Improve Employee Experience
Employee Engagement and Burnout (Cohorts 5-8)

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Connection</td>
<td>4.33</td>
<td>4.19</td>
</tr>
<tr>
<td>Work Energy and Effort</td>
<td>4.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Workplace Climate</td>
<td>4.15</td>
<td>3.64</td>
</tr>
<tr>
<td>Staffing</td>
<td>3.43</td>
<td>3.42</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>4.19</td>
<td>4.4</td>
</tr>
<tr>
<td>Burnout</td>
<td>3.9</td>
<td>3.92</td>
</tr>
</tbody>
</table>

*p<0.05 **p<0.01
Employee Engagement and Burnout
Means for 46 participants from Cohorts 5-8 who responded at 3 timepoints

Workplace climate decreased significantly from baseline to end of LEAP (p<.0001), then increased significantly from end of LEAP to six month follow-up (p<.0001).

Satisfaction decreased significantly from end of LEAP to six month follow-up (p<.05).

No other measures changed significantly between time points.
High satisfaction with LEAP

The LEAP program is **relevant** to the needs of our MOVE! program.

I feel **comfortable** using the LEAP materials and methods to help guide improvements to our MOVE! program.

* p<0.05
Participants value the structured approach

“Expectations for each week and a check list has made it very manageable.”
Pathway of Change

Engage Frontline Teams in LEAP

Increase Skill & Use of QI Methods

Improve Employee Experience

Improve Clinical Outcomes
Clustered RCT: Stepped Wedge Design

Purpose: To conduct an interrupted-time series analysis to determine effect of LEAP on group MOVE! reach

**Reach** computed as a rate:

\[
\frac{\text{number of new & returning Veterans to group MOVE!}^*}{\text{number of MOVE! eligible Veterans for a given fiscal year}}
\]

*Everyone in the numerator should be in the denominator, but there were some exceptions (1.6%).

**Definitions**

**New:** never had a group MOVE! visit

**Returning:** first group MOVE! visit after a 6-month gap

**MOVE! eligibility:**
Inclusion - Veterans with a BMI>30 or a BMI>25 with specific comorbidities

Exclusion – terminal cancers or end-of-life documentation
Stepped-wedge Trial Set-up

• **Primary Outcome**: Reach

• **Unit of Analysis**: n=137 medical centers with group MOVE!
  • N=55 sites randomized to LEAP start date → n=82 control sites
  • Intention-to-treat analyses
  • N=39/55 completed LEAP → 71%
Stepped-Wedge Design

137 Group MOVE! Programs

8 Cohorts of n=55 sites randomized to LEAP
- Y1: Randomly assigned a starting date.
- Y2: Randomly selected from willing teams each quarter.
- N=39/55 (71%) completed LEAP

N=82 Randomized Control Sites
Interrupted Time-series Analyses

Conceptual Structure
- 12 months pre-LEAP
- 5-6 month LEAP Program
- 12 months post-LEAP
Rich to add graphic showing overall change before vs after LEAP.
Challenges & Opportunities
Time is a challenge…

I had the time to do the work required in **21-week** LEAP.

Neutral or disagree | Agree or strongly agree
--- | ---
53% | 47%

…we lengthened LEAP to help address this…

I had the time to do the work required in **26-week** LEAP.

Neutral or disagree | Agree or strongly agree
--- | ---
41% | 59%
I plan to continue to monitor our MOVE! program using the MOVE! data reports provided by LEAP.

Our LEAP Improvement Team will continue working together after the 26 weeks of LEAP.

I plan to attend follow-up coaching or virtual collaborative sessions.

* p<0.05
Patient care takes priority
Time and priority constraints dampen intention to continue engaging in QI for MOVE!

- Affirms a growing literature:
  - “We now understand the problem better. Clinicians were too busy delivering patient care and had no spare time to improve it.”


High rate of completion

- 42/48 (81.25%) of teams who initially committed to LEAP
Evidence to Support Pathway of Change

Engage Frontline Teams in LEAP

Increase Skill & Use of QI Methods

Improve Employee Experience

Improve Clinical Outcomes
VHA Journey to High Reliability Organization (HRO) Maturity

THREE PILLARS OF HRO

Leadership Commitment
Safety and reliability is reflected in leadership’s vision, decisions and actions.

Safety Culture
Throughout our organization, safety values and practices are used to prevent harm and learn from mistakes.

Continuous Process Improvement
Across the organization, teams use effective tools for continuous learning and improvement.
implementing changes and observing the results of these changes... acquisition of know-how... cycle[s] of observe–assess–design–implement

assessing cause and effect relationships that govern experienced events, and designing an abstract concept — a theory — to explain this experience...
Engage Front-line Teams: Conduct cyclical small tests of change

- Synthesized Empirical Evidence
- Deep Empirical Evidence
- Implementation Science
- Quality Improvement (e.g. IHI, Lean)
- Learning Health Systems
- High Reliability Organization (HRO)
Questions?

CONTACT: VHAANNHSRDLEAP@VA.GOV