The Military & Veterans Health SIG Presents:
Chronic Condition Management and Prevention
among Veterans

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Mona Au Young, PhD, MS, MPH; Samantha Outcalt, PhD, ABPP; Robert Kerns, PhD
Various centers within the Veterans Health Administration
U.S. Department of Veterans Affairs

A symposium presented at the Society of Behavioral Medicine Annual Meeting
March 31, 2016

The views expressed in this presentation do not necessarily represent those of the
Department of Veterans Affairs or the United States Government.
Overview and Background

   Chair: Jeff Haibach, PhD, MPH — VA Pittsburgh Healthcare System, Pittsburgh, PA

1. Translating the Diabetes Prevention Program (DPP) for Veterans with Prediabetes
   - Tannaz Moin, MD, MBA, MSHS — VA Greater Los Angeles & UCLA’s School of Medicine
   - Mona AuYoung, PhD, MS, MPH — VA Ann Arbor, Ann Arbor, MI

2. The CAMEO Trial: A Comparative Effectiveness Trial between Pharmacotherapy and Cognitive Behavioral Therapy for Chronic Low Back Pain
   - Samantha Outcalt, PhD, ABPP — Roudebush VA Medical Center, Indianapolis, IN

3. Quality Improvement Evaluation of a Chronic Disease Self-Management Program
   - Jeff Haibach, PhD, MPH — VA Pittsburgh Healthcare System, Pittsburgh, PA

Reflections and Discussion

   Discussant: Robert Kerns, PhD — VA Connecticut Healthcare System, West Haven, CT
   - With presenters and audience

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Chronic disease and condition prevalence is high, costly, and multimorbidity is common

- In a study of 5.2 million VA patients in FY 2010:
  - ~2/3 of patients had ≥ 1 (1/28) Chronic Conditions; ~1/3 had ≥ 3 Chronic Conditions
  - Patients with ≥ 3 Chronic Conditions accounted for > 65% of VA healthcare costs
  - Most prevalent triad—diabetes, hyperlipidemia, hypertension (>25%)
  - Most costly triad—chronic heart failure, renal failure, COPD (Mean=$82k; Median= $58k)

- In a study among 700k VHA enrolled Veterans from FY2000-FY2004:
  - 5-year mortality rate increased with greater chronic condition comorbidity

- VA healthcare cost attributed to cigarette smoking in 2010:
  - ~$2.7 billion (8% of total cost VA healthcare costs)
  - ~$1.7 billion, from current smokers and ~1.0 billion from former smokers

Yoon et al., 2014. Med Care. 52(3)S31-36; Lee et al., 2007. JGIM. 22(S3)403-7; Barnett et al., 2015. NTR. 17(5)586-591
Chronic conditions and multimorbidity generally equal or higher among Veterans

<table>
<thead>
<tr>
<th>Health conditions</th>
<th>Veteran</th>
<th>Civilian</th>
<th>Reserves/Guard</th>
<th>Active Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>21*/9*</td>
<td>6/7</td>
<td>15/7</td>
<td>6/3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17*/8</td>
<td>8/9</td>
<td>13/8</td>
<td>5/5</td>
</tr>
<tr>
<td>Cancer</td>
<td>18*/14*</td>
<td>6/9</td>
<td>12/3</td>
<td>7/8</td>
</tr>
<tr>
<td>Depressive disorders</td>
<td>14*/27*</td>
<td>12/21</td>
<td>9/37</td>
<td>12/18</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>11*/20*</td>
<td>9/16</td>
<td>10/32</td>
<td>15/10</td>
</tr>
</tbody>
</table>

Sample: BRFSS 2010; Sample = 13% Veterans that were 93% male/7% female (Male N = 169,390, Female N = 280,276); *p<0.05; weighted prevalence statistics; regression also adjusted for demo. Percentages rounded to nearest whole number, from: Hoerster et al., 2012. Am J PM. 43(5):483-489; Lehavot et al., 2012. Am J PM. 42(5):473-480
Health-risk behavior/factor prevalence varies by Veteran, civilian, and military status, and generally higher among Veterans in VA

- **Overweight and obesity in:**
  - 4.9 million VA patients in FY2013 = 78%; Obesity = 41% (2011-2012 Non-Vets-69% / 35%)
  - NHANES 2009-2012, obesity in Veterans = 43% vs. Non-Veterans = 34% (p<0.01; adjusted)

- **Smoking prevalence:**
  - BRFSS 2003-2007 pooled, age-adjusted, Veterans = 27.0% vs. Non-Veterans = 21% (p<0.01)

| Prevalence (%) of Tobacco and Inactivity by Military and Veteran Status 2010 |
|-----------------------------|---------------|-----------------|-----------------|
|                             | Veteran       | Civilian        | Res./ Guard     | Active Duty     |
| Men                         |               |                 |                 |                 |
| Cigarette smoking*          | 17.4          | 19.5            | 14.4            | **23.4**        |
| No exercise last 30 days*   | **24.6**      | 21.5            | 20.0            | 13.3            |
| Women                       |               |                 |                 |                 |
| Tobacco Use*                | 19.4          | 15.1            | 16.0            | 10.9            |
| No exercise last 30 days    | 26.3          | 26.8            | 23.9            | 14.2            |


Chronic condition management and prevention programs and interventions target a variety of conditions and behaviors through varied methods

- Most common conditions are CVD, diabetes, arthritis, and pain management
  - A host of others from HIV to Hep-C to mental health conditions
- Address multiple health behaviors:
  - Foremost being diet, exercise, medication management
  - Also address behaviors such as stress management, communicating with others, spirituality
- Delivery methods include:
  - Individual, groups, online, telehealth, clinician-led, peer-led, mostly “self-management”
  - In healthcare, communities, worksites, and other settings
- Widely evaluated with efficacy in the general population and many specific groups
- Implementation and research has been more limited among Veterans, but increasing rapidly across VA settings (primary care, inpatient, homeless Vets, telehealth, online)
An Online Diabetes Prevention Program (DPP) for Veterans: Early Quantitative and Qualitative Findings by Gender

Tannaz Moin, MD, MBA, MSHS  Mona AuYoung, PhD, MS, MPH

Society of Behavioral Medicine Annual Meeting
March 31, 2016
VA DPP Acknowledgements

- VA Ann Arbor Center for Clinical Management Research (CCMR)/Diabetes QUERI
  Caroline Richardson
  Laura Damschroder
  Fatima Makki  Maria Hughes
  Caitlin Reardon  Brad Youles
  Sam Lindenauer  Amanda Ellis
  Rob Holleman  Jenny Davis
  Molly Harrod  Jordan Sparks
  Jonathan Berry  Christine Exe
  Maria Xiang  Jen Burgess
  Nick Yankey  Reina Larkin
  Mona AuYoung

- VA Center for Health Promotion and Disease Prevention (NCP)
  Linda Kinsinger
  Michael Goldstein Susi Lewis
  Sue Raffa  Greg Moore  Ken Jones

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  Santanu Datta  Will Yancy
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  Hollis Weidenbacher

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  M. Kaye Kramer
  Andrea Kriska
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  Beth Venditti

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  Tomi Onatunde

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- VA Baltimore
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  Jana McCanich

- VA Minneapolis
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  Jenessa Humphrey
  Jacquelyn Costabilo
  Catherine Proebstle
  Jerry Gunn
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  Jessica Serbin

- VA Milwaukee
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  Kathryn Havens
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  Dorothy Bernet
  Beth Sobel

- Project Funding:
  • Dr. Moin’s HSR&D Fellowship 2011-14
Outline

• Background
  – Prediabetes and diabetes prevention

• Overview of the VA Diabetes Prevention Program (DPP) Clinical Demonstration Project

• Online DPP
  – Early Quantitative Findings
    • Weight outcomes and adherence
  – Early Qualitative Findings
    • Subset of women Veterans from one VAMC
25% of Veterans have diabetes
→ mortality and costs

1 in 3 US adults have prediabetes
Will transition to diabetes over 5 years

VA DPP Study

MOVE! (usual care)

In-person DPP

Online DPP
Online DPP

- Flexible scheduling
  - Asynchronous communication
  - Potential appeal to younger Veterans

- Power of social media
  - Redefining engagement and participation

- High-tech monitoring
  - Wireless scales to track weight loss progress online

https://omadahealth.com
Obese (BMI >30 kg/m²) OR BMI >25 kg/m² with ≥1 cardiovascular risk factor (e.g., hypertension) AND Prediabetes (FPG 100-125 mg/dl OR HbA1c of 5.7-6.4)
Key Measures

Primary Outcome

• Weight loss (12 months)

Secondary Outcome

• HbA1c (12 months)
Online DPP:
Early Quantitative Findings by Gender
### Online DPP: Baseline Characteristics by Gender

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Male</th>
<th>Female</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%)</td>
<td>118 (64%)</td>
<td>67 (36%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>62.8 (11.1)</td>
<td>55.9 (8.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>BMI</td>
<td>32.3 (5.3)</td>
<td>35.2 (6.2)</td>
<td>0.001</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>17 (14.4%)</td>
<td>17 (25.4%)</td>
<td>0.10</td>
</tr>
<tr>
<td>Caucasian</td>
<td>80 (67.8%)</td>
<td>45 (67.2%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7 (5.9%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>13 (11.0%)</td>
<td>5 (7.5%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (0.8%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Service Connection</td>
<td>30.6 (35.4)</td>
<td>27.9 (37.4)</td>
<td>0.63</td>
</tr>
<tr>
<td>HbA1c</td>
<td>6.0 (0.3)</td>
<td>5.8 (0.2)</td>
<td>0.11</td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HTN</td>
<td>82 (69.5%)</td>
<td>37 (55.2%)</td>
<td>0.05</td>
</tr>
<tr>
<td>CAD</td>
<td>18 (15.3%)</td>
<td>2 (3.0%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Mental Health</td>
<td>45 (38.1%)</td>
<td>35 (52.2%)</td>
<td>0.06</td>
</tr>
</tbody>
</table>
Online DPP: Weight Outcomes by Gender

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Male</th>
<th>Female</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight loss at 16 weeks (kg)</td>
<td>-5.3 (-6.3, -4.4)</td>
<td>-4.1 (-5.4, -2.8)</td>
<td>0.14</td>
</tr>
<tr>
<td>% weight loss at 16 weeks</td>
<td>-5.1 (-6.0, -4.1)</td>
<td>-4.5 (-5.7, -3.2)</td>
<td>0.63</td>
</tr>
<tr>
<td>for those who attended ≥4 modules</td>
<td>-5.5 (-6.5, -4.5)</td>
<td>-4.7 (-6.1, -3.4)</td>
<td>0.39</td>
</tr>
<tr>
<td>for those who attended ≥8 modules</td>
<td>-5.7 (-6.7, -4.6)</td>
<td>-5.1 (-6.5, -3.8)</td>
<td>0.54</td>
</tr>
<tr>
<td>for those who attended all 16 modules</td>
<td>-6.1 (-7.1, -5.0)</td>
<td>-6.5 (-8.1, -4.9)</td>
<td>0.66</td>
</tr>
</tbody>
</table>
## Online DPP: Program Adherence by Gender

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Male</th>
<th>Female</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average # modules completed</td>
<td>13.5 (4.7)</td>
<td>13.1 (4.5)</td>
<td>0.53</td>
</tr>
<tr>
<td>% who completed ≥8 modules</td>
<td>86.4%</td>
<td>85.1%</td>
<td>0.80</td>
</tr>
<tr>
<td>% who completed all 16 modules</td>
<td>70.3%</td>
<td>53.7%</td>
<td><strong>0.02</strong></td>
</tr>
</tbody>
</table>
Online DPP:
Early Qualitative Findings
Qualitative Study Design

- Subset of women Veterans participants from one VA DPP site
  - Enrolled in Prevent by January 19, 2014
  - Consented participants were assigned to an Online DPP (Prevent) group on a rolling basis
    - Groups included veterans and non-veterans and female and male participants
- All participants who completed an interview received a US $25 gift card
Qualitative Methods

- Semi-structured interviews conducted in private room
- Transcripts coded using content analysis
  - Codes developed inductively (coding first 6 interviews using consensual process)
  - Common themes identified with descriptive, inductive content analysis
  - Two coders independently coded each interview manually and analyzed for common themes
- Thematic saturation
  - Did not stop interviews
Qualitative Results

- Participants had mean age of 56.8 years, mean BMI of 35.6 and 41% were African American

- **Seven** broad themes emerged from 15 interviews:
  - 1: The Program is a Good Fit With Perceived Health Needs
  - 2: The Program Is Convenient
  - 3: The Program Integrates With Daily Life
  - 4: “I Feel Accountable”
  - 5: “I Hate Logging”
  - 6: “If the Program Were In-person, My Group Would Know Me Head-to-Toe”
  - 7: Difficult to Figure It Out
Qualitative Results

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- **Seven** broad themes emerged from 15 interviews:
  - 1: The Program is a Good Fit With Perceived Health Needs
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  - 4: “I Feel Accountable”
  - 5: “I Hate Logging”
  - 6: “If the Program Were In-person, My Group Would Know Me Head-to-Toe”
  - 7: Difficult to Figure It Out
“I feel accountable”

“I think that the program helped a lot. When I made a commitment to weigh myself every day that was huge, you know, that kept me honest....I was sort of accountable to the program, that was a big motivator.” [ID13]

“Well, there’s a little bar that says what the group’s goal is for steps... I always want to look to make sure I’m keeping up my steps so I’m not the slacker in the group.” [ID10]
“In person, my group would know me head to toe”

“...if we were sitting in a room face-to-face, they’d know me from head to toe by now. Sitting before people I seem to be a little bit more open than online....” [ID8]
“Difficult to figure it out”

“My computer acts up a lot, so I don’t get to log in and do all the stuff that they would like me to do, but versus going to meetings and all of that, I would prefer to do it online” [ID9].
### Summary of Early Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td>- Women are younger, have higher BMIs and fewer comorbidities except mental health conditions</td>
</tr>
<tr>
<td><strong>Weight Loss</strong></td>
<td>- Comparable across genders</td>
</tr>
<tr>
<td><strong>Adherence</strong></td>
<td>- Women had lower rates of completion</td>
</tr>
</tbody>
</table>
| **Facilitators/Barriers** | - Convenience, accountability  
                       | - Logging, difficult to figure out, human element                          |
| **Implications**  | - Tailoring DPP to women’s needs                                         
                       | - Patient choice?                                                          |
Questions/Comments

Contact Information:
Tannaz Moin: tannaz.moin@va.gov
Mona AuYoung: mona.auyoung@va.gov
The CAMEO Trial: A Comparative Effectiveness Trial Between Pharmacotherapy and Cognitive Behavioral Therapy for Chronic Low Back Pain

Samantha D. Outcalt¹⁻³, James E. Slaven², & Matthew J. Bair¹⁻³

¹HSR&D Center for Health Information & Communication
²Indiana University School of Medicine
³Regenstrief Institute
Overview

• Scope of the Problem

• Treating Chronic Low Back Pain

• CAMEO Trial
Acknowledgements

• Funding: VA HSR&D Merit Review (IIR 10-128)
• No competing interests to disclose
• CAMEO Team:
  – PI: Matthew J. Bair
  – Co-Is: Teresa Damush, Jacob Kean, Samantha Outcalt, Kurt Kroenke, Alan Zillich
  – PMs: Christy Sargent, Amanda Froman, Brad Baecher
  – Statistician: James Slaven
  – RAs: Matthew Kline, Shane Deford, Justin Chaple, Clarice Richardson, Gianna Wright, Michael Mestetsky, Laura Avila, Michael Mohr
  – Nurse Care Manager: Carol Kempf
  – Psychologists: Nicolle Angeli, Samantha Outcalt
  – Psychology grad students: Matthew Jackson, Nehad Sandozi, Aaron Esche, April Krowel
Scope of the Problem

• Chronic pain is a major public health problem
  – Affects more than 70 million Americans
  – Leading cause of disability among Veterans

• Musculoskeletal pain
  – Accounts for nearly 2/3 of all primary care visits for pain

• Chronic low back pain
  – Most prevalent, disabling, and costly type
Treating Chronic Low Back Pain

- Evidence supports 1) algorithm-based analgesic treatment and optimization and 2) cognitive behavioral therapy for CLBP
  - However, these are not routinely implemented in primary care
- Opioid controversy
  - Prescriptions have increased
  - Pain persists & side effects intolerable
  - Primary care providers’ concern of abuse or addiction
CAMEO Trial

• Care Management for the Effective use of Opioids (CAMEO)

• Aims:
  1. To compare the interventions’ effects on pain intensity, function, and other pain relevant outcomes at 6 and 12 months
  2. To compare the cost-effectiveness of the interventions (results forthcoming)
CAMEO Trial

• Eligibility:
  – Moderate-severe CLBP
  – Long-term opioid therapy

• Randomization:
  – Guideline-concordant opioid management + algorithm-based co-analgesic treatment
  – Cognitive behavioral therapy emphasizing pain coping & self-management
Interventions

• Both interventions: 8 contacts within 6 months

• Pharmacological Arm
  – Telephone-delivered nurse care management
  – Opioid management + co-analgesic treatment
  – Monitoring of adherence, treatment response, symptoms, adverse effects

• Behavioral Arm
  – Delivered by clinical psychologists and PhD students
  – Manualized CBT treatment
  – Emphasis on pain self-management and cognitive coping
Participants

• N=261 Veterans (Pharm: n=128; Behav: n=133)
• Sample demographics
  – Average age = 57.92 (sd=9.48)
  – Mostly male (92.3%), White (73.2%), at least high school educated (62.1%), & reported adequate income (71.9%); about half married (53.3%) and only a fifth employed (20.7%)
• Average duration of pain = 22.29 years (sd=13.42)
• No significant differences across groups at baseline
Measures

• Primary outcome
  – Pain severity: Brief Pain Inventory - Total

• Secondary outcomes
  – Pain-related disability: Roland-Morris Disability Questionnaire
  – Pain interference: Brief Pain Inventory - Interference
  – Pain catastrophizing: Pain Catastrophizing Scale
## Results: Overall Sample

<table>
<thead>
<tr>
<th></th>
<th>Baseline to 6 months</th>
<th>Baseline to 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pain Severity</strong></td>
<td>-0.71 (1.89)</td>
<td>-0.77 (2.08)</td>
</tr>
<tr>
<td></td>
<td>p &lt; .0001</td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td><strong>Pain Disability</strong></td>
<td>-1.35 (4.68)</td>
<td>-0.74 (5.45)</td>
</tr>
<tr>
<td></td>
<td>p &lt; .0001</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td><strong>Pain Interference</strong></td>
<td>-0.84 (2.21)</td>
<td>-0.82 (2.38)</td>
</tr>
<tr>
<td></td>
<td>p &lt; .0001</td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td><strong>Pain Catastrophizing</strong></td>
<td>-2.99 (10.26)</td>
<td>-3.01 (11.73)</td>
</tr>
<tr>
<td></td>
<td>p &lt; .0001</td>
<td>p &lt; .001</td>
</tr>
</tbody>
</table>
## Results: Treatment Comparison

### Primary Outcome
- **Brief Pain Inventory (Total)**

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Pharmacological</th>
<th>Behavioral</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>6.47 (1.73)</td>
<td>6.45 (1.79)</td>
<td>6.49 (1.67)</td>
<td>-0.05 (p=.82)</td>
</tr>
<tr>
<td><strong>6 months</strong></td>
<td>5.74 (2.04)</td>
<td>5.53 (2.21)</td>
<td>5.95 (1.84)</td>
<td>-0.42 (p=.11)</td>
</tr>
<tr>
<td><strong>12 months</strong></td>
<td>5.68 (2.15)</td>
<td>5.38 (2.27)</td>
<td>5.98 (1.98)</td>
<td>-0.61 (p=.04)</td>
</tr>
</tbody>
</table>
### Results: Treatment Comparison

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Pharmacological</th>
<th>Behavioral</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td><strong>Pain-Related Disability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>16.65 (4.43)</td>
<td>16.59 (4.70)</td>
<td>16.72 (4.15)</td>
<td>-0.13 (p=.82)</td>
</tr>
<tr>
<td>6 months</td>
<td>15.33 (5.34)</td>
<td>15.32 (5.20)</td>
<td>15.34 (5.50)</td>
<td>-0.02 (p=.98)</td>
</tr>
<tr>
<td>12 months</td>
<td>16.08 (5.61)</td>
<td>15.60 (5.85)</td>
<td>16.58 (5.34)</td>
<td>-0.98 (p=.20)</td>
</tr>
<tr>
<td><strong>Pain Interference</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>6.36 (2.03)</td>
<td>6.34 (2.07)</td>
<td>6.39 (1.99)</td>
<td>-0.06 (p=.83)</td>
</tr>
<tr>
<td>6 months</td>
<td>5.50 (2.34)</td>
<td>5.30 (2.38)</td>
<td>5.70 (2.15)</td>
<td>-0.39 (p=.20)</td>
</tr>
<tr>
<td>12 months</td>
<td>5.48 (2.41)</td>
<td>5.19 (2.46)</td>
<td>5.79 (2.34)</td>
<td>-0.60 (p=.07)</td>
</tr>
<tr>
<td><strong>Pain Catastrophizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>24.19 (12.00)</td>
<td>23.95 (12.77)</td>
<td>24.44 (11.27)</td>
<td>-0.50 (p=.74)</td>
</tr>
<tr>
<td>6 months</td>
<td>21.05 (12.90)</td>
<td>21.64 (13.20)</td>
<td>20.41 (12.54)</td>
<td>1.23 (p=.46)</td>
</tr>
<tr>
<td>12 months</td>
<td>21.30 (13.00)</td>
<td>22.14 (13.84)</td>
<td>20.43 (12.04)</td>
<td>1.71 (p=.34)</td>
</tr>
</tbody>
</table>
Discussion

• Summary of Results
  – Modest improvements over time in overall sample
  – However, few statistically significant differences across treatment groups

• Limitations
  – Single site study
  – Homogenous sample

• Implications & Future Directions
  – Risks of each treatment ought to be considered
  – Will examine cost comparisons
Quality improvement evaluation of a chronic disease self-management program among Veterans and their family members or caregivers

Jeffrey P. Haibach, PhD, MPH
HSR&D Center for Health Equity Research and Promotion (CHERP)
VA Pittsburgh Healthcare System, Pittsburgh, PA

Society of Behavioral Medicine Annual Meeting
March 31, 2016
Quality Improvement Evaluation vs. Research

Quality Improvement (QI/ Not Research)
- A healthcare “Operations Activity”
- Designed for internal VA purposes to support VA mission
- Include data collection
- Findings for use by and within VA
- Does not contain any of the characteristics described in right hand column as Human Subjects Research
- Does not required IRB Approval

Human Subjects Research
- Designed to contribute to generalizable knowledge
- To expand the knowledge base of a scientific discipline or scholarly field
- Funded or supported as research
- Clinical investigations as per FDA Regs
- Double-blind interventions
- Placebo controls
- Prospective patient-level randomization not for patient benefit
- Or activity modified or changed to now expand generalizable knowledge or base of a scientific discipline or scholarly field
- Requires IRB approval

Reference:
VHA Handbook 1058.05. October 28, 2011
There are many self-management programs to help patients with chronic diseases lead healthier lives, reducing chronic disease burden.

At VA Pittsburgh we implemented the Stanford School of Medicine’s CDSMP (Kate Lorig, DrPH; Virginia Gonzalez, MPH, & Diana Laurent, MPH)

- AKA Better Choices Better Health
- Stanford’s is the first and most widespread CDSMP
  - Large evidence base
  - Available in 24 different languages across the U.S. and other countries
AmeriCorps Volunteer Peer-Leaders (4-day, 32 hour training)/ VA WOCs:
Dwayne [Wayne] Young, Nettie [Jorinda] Bullitt, Tracey Harris, Dawna Biggs

Partners in Care Foundation

Ann Truxell (Vintage Executive Director)

CDSMP Implementation Oversight:
Dr. Walter Clark, MD (VP of VAPHS Primary Care)

VAPHS Employee Assistance on Project:
Amy Plumley, Robin Tate, Jo-Anne Suffoletto, Beth Desanzo, Lynn Keller, Christine Cortez, Jeffrey Haibach, Alan Petrazzi; Veteran Canteen Service Staff
A meta-analysis of 23 studies, including RCTs, reported program participants compared to non-participants have:

- Significant improvements in exercise, cognitive symptom management, communication with physicians, self-reported general health, health distress, fatigue, disability, and social/role activities limitations.
- Fewer days in the hospital/hospitalizations.
- Cost to savings ratio of approximately 1:4.
- Many of the results persist for as long as three years.

Brady et al., 2013. Preventing Chronic Disease. 10(120112)
Workshops:

Meet for 2.5 hrs, once per week, for 6 weeks; covering 15 hours of contact time

Subjects covered include:

1) Techniques to deal with problems such as frustration, fatigue, pain and isolation
2) Appropriate exercise for maintaining and improving strength, flexibility, and endurance
3) Appropriate use of medications
4) Communicating effectively with family, friends, and health professionals
5) Nutrition
6) Decision making
7) How to evaluate new treatments
VAPHS: Quality Improvement Evaluation

- To evaluate the Program locally for feasibility and to continue and improve implementation
- Primary Outcomes and Evaluation Areas of Interest Include:
  - Recruitment and Retention Processes
  - Staff Administration
  - Improved self-management skills
  - Reduction of symptoms interfering with living
  - Improved Health Behaviors
  - Improved Quality of Life

- Classes were conducted at VAPHS from:
  January 2015 to September 2015
**VAPHS: Quality Improvement Evaluation**

- **Measurement tools:**
  - Peer Leader: Participant recruitment and retention tracking
  - Qualitative feedback in meetings on staff administration
  - Self-report survey at baseline (beginning of first classes); Follow-up end of last class
Quality Improvement Evaluation

- **8 workshops** conducted from January through September 2015
  - 295 Referrals or strong interest to attend (recorded on roster)
  - 97 Attended at least 1 class session
  - 52 Graduates (54% of class attendees; must attend 4/6 classes for grad)
  - 37 Participants completed baseline and follow-up surveys (71% of grads; 38% attendees)
### Participant Characteristics (Graduates)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Range 31-69 Years; Mean=58.6 years</td>
</tr>
<tr>
<td>Veterans</td>
<td>84%</td>
</tr>
<tr>
<td>Male</td>
<td>76%</td>
</tr>
<tr>
<td>White/ Caucasian</td>
<td>57%</td>
</tr>
<tr>
<td>Black/ African American</td>
<td>34%</td>
</tr>
<tr>
<td>Other race</td>
<td>9%</td>
</tr>
<tr>
<td>Also Hispanic/ Latino</td>
<td>9%</td>
</tr>
<tr>
<td>Education (Mean; range 8-23)</td>
<td>13 years</td>
</tr>
<tr>
<td>Inpatients</td>
<td>46%</td>
</tr>
</tbody>
</table>
## Top Chronic Conditions

<table>
<thead>
<tr>
<th>Total (Mean; range 0-7)</th>
<th>3 conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>51%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>38%</td>
</tr>
<tr>
<td>Arthritis</td>
<td>38%</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>38%</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>30%</td>
</tr>
<tr>
<td>Diabetes (Type II)</td>
<td>23%</td>
</tr>
</tbody>
</table>
Self-Rated Health and Symptom Management

<table>
<thead>
<tr>
<th>When participants were asked whether the program helped them make positive changes for:</th>
<th>Baseline</th>
<th>Follow-up</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Rated Health&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.4</td>
<td>2.6</td>
<td>8%</td>
</tr>
<tr>
<td>How much health problems were a worry, discouragement, or frustration&lt;sup&gt;b*&lt;/sup&gt;</td>
<td>2.1</td>
<td>1.6</td>
<td>-24%</td>
</tr>
<tr>
<td>How much health interfered with activities of daily living&lt;sup&gt;b*&lt;/sup&gt;</td>
<td>1.5</td>
<td>1.2</td>
<td>-20%</td>
</tr>
<tr>
<td>Confidence in keeping disease symptoms from interfering with other activities&lt;sup&gt;c*&lt;/sup&gt;</td>
<td>5.7</td>
<td>6.0</td>
<td>5%</td>
</tr>
</tbody>
</table>

Note. n=37 program graduates; <sup>a</sup>Mean score, 1-5 Likert scale/ poor to excellent; <sup>b</sup>Mean Score, 4-item scale average, Likert range 0-5 <sup>c</sup>Mean score, 10-item scale average, Likert range 1-10; Analysis: Paired samples T-test, SPSS v23*p-values significant at p < .10
## Health Behaviors - Physical Activity

<table>
<thead>
<tr>
<th>Health Behavior</th>
<th>Baseline</th>
<th>Follow-up</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Moderate Minutes/Week (Mean)***</td>
<td>340</td>
<td>726</td>
<td>114%</td>
</tr>
<tr>
<td>Met Aerobic Recommendations (≥150 Minutes/Week)⁹</td>
<td>51%</td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>Increased Aerobic by ≥30 minutes per week</td>
<td>N/A</td>
<td>51%</td>
<td>NA</td>
</tr>
<tr>
<td>Increased Aerobic by ≥2 hours per week</td>
<td>N/A</td>
<td>49%</td>
<td>NA</td>
</tr>
<tr>
<td>Strength Training Days Per Week</td>
<td>1.8</td>
<td>2.2</td>
<td>24%</td>
</tr>
<tr>
<td>Met Strength Training Recommendations (≥2 Days/Week)</td>
<td>40%</td>
<td>57%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Note. n=37 program graduates; Analysis: Paired samples T-test; ⁹Non parametric McNemar’s Test for dichotomous variables, SPSS v23; *p< .10, physical activity minute significance set at p<.01 given large continuous range.
# Health Behaviors - Nutrition

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Follow-up</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Rated Nutrition (Mean on 1-5 Scale)**</td>
<td>3.4</td>
<td>3.0</td>
<td>-12%</td>
</tr>
<tr>
<td>Fruit and Vegetable Consumption (Mean Cups/Day)*</td>
<td>3.2</td>
<td>4.1</td>
<td>28%</td>
</tr>
<tr>
<td>Consumed ≥4 Cups/Day of Fruit and Vegetables</td>
<td>39%</td>
<td>54%</td>
<td>39%</td>
</tr>
<tr>
<td>Increase by ≥1 Cup/Day of Fruit and Vegetables</td>
<td>N/A</td>
<td>57%</td>
<td>N/A</td>
</tr>
<tr>
<td>Increase by ≥2 Cups/Day of Fruit and Vegetable</td>
<td>N/A</td>
<td>41%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note. n=37 program graduates; Paired samples T-test; Non parametric McNemar’s Test for dichotomous variables, SPSS v23; *p<.10, **p<.05
# Health Behaviors - Sleep

<table>
<thead>
<tr>
<th>Health Behavior</th>
<th>Baseline</th>
<th>Follow-up</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hours/Day (Mean; Range 3 to 16 Hours/Day)</td>
<td>6.6</td>
<td>6.5</td>
<td>-2%</td>
</tr>
<tr>
<td>Sleep ≥6 Hours/Day</td>
<td>64%</td>
<td>71%</td>
<td>12%</td>
</tr>
<tr>
<td>Met Sleep Recommendations (7-8 Hours/Day)</td>
<td>28%</td>
<td>29%</td>
<td>3%</td>
</tr>
<tr>
<td>Slept well &gt;50% of Days in Last 30 Days</td>
<td>65%</td>
<td>74%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Note. n=37 program graduates; Paired samples T-test; Non parametric McNemar’s Test for dichotomous variables, SPSS v23; *p<.10 (None)
## Health-Risk Behaviors: Cigarette Smoking and Alcohol Misuse

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Baseline</th>
<th>Follow-up</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently Smoke Cigarettes</td>
<td>32%</td>
<td>36%</td>
<td>11%</td>
</tr>
<tr>
<td>Cigarettes/Day Among Current Smokers</td>
<td>11.6</td>
<td>10.9</td>
<td>-6%</td>
</tr>
<tr>
<td>Heavy Drinking Past 30 Days (Men &gt;14 Drinks/Week or Women &gt;7)</td>
<td>6%</td>
<td>0%</td>
<td>-100%</td>
</tr>
<tr>
<td>Heavy Drinking Past 30 Days (Men &gt;4 Drinks in a Sitting/Day; Women &gt;3 Drinks)</td>
<td>8%</td>
<td>3%</td>
<td>-67%</td>
</tr>
<tr>
<td>Medium to High Risk Drinkers (Binge Drinking, Heavy Drinking or Both)</td>
<td>8%</td>
<td>3%</td>
<td>-67%</td>
</tr>
<tr>
<td>Heavy Drinking Past 30 Days (Men &gt;14 Drinks/Week or Women &gt;7)</td>
<td>6%</td>
<td>0%</td>
<td>-100%</td>
</tr>
</tbody>
</table>

Note. n=37 program graduates; Analysis: Paired samples T-test; \(^{\text{a}}\)Non parametric McNemar’s Test for dichotomous variables, SPSS v23; \(^{*}\)p< .10 (None)
Perceived Improvement

When participants were asked whether the program helped them make positive changes for:

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td>78%</td>
<td>Yes</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>65%</td>
<td>Yes</td>
</tr>
<tr>
<td>Sleep</td>
<td>60%</td>
<td>Yes</td>
</tr>
<tr>
<td>Medication Adherence</td>
<td>60%</td>
<td>Yes</td>
</tr>
<tr>
<td>Working with Healthcare Provider</td>
<td>73%</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Participants Satisfied

When asked whether they would recommend the class to “a friend, family member, or fellow Veteran”:

| 89% | Yes |
Our Local Conclusions and Recommendations

• Participant receptivity and satisfaction of the CDSMP at VAPHS was very positive

• There was indication of a positive impact on health behaviors

• Receptivity/ satisfaction and health behavior indications paired with the solid evidence-base for CDSMP suggests this is a beneficial program at VAPHS; it shows promise to rank among the best.

• Primary areas needing addressed include recruitment, retention, and staff administration for program continuance.

• Currently being referred/contracted to local Vintage community program
Questions?
Reflections and discussion moderated by Robert Kerns, PhD with presenters and audience