Implementing a Systems-Level Change Model to Increase Capacity of Home Care and Telehealth Extended Care Services in a VHA Spinal Cord Injury Center

Christine M. Nicholas, DNP, MSN, RN, LSSBB

VA MISSION STATEMENT: To fulfill President Lincoln's promise “To care for him who shall have borne the battle, and for his widow, and his orphan” by serving and honoring the men and women who are America’s Veterans.
Disclaimer

The content of this presentation is the responsibility of the author(s) alone and does not necessarily reflect the views or policies of the Department of Veterans Affairs or the United States Government. Nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

All photographs were obtained from public internet images and do not violate privacy of any individual or entity.
Co-Authors
Seth D. Chandler, DO, FAAPMR
Nancy Cuevas-Soto, DNP, RN, NPD-BC, NEA-BC
Frank Puga, PhD

Team Members
Rick Reusch, MBA, RN, CRRN
Maybelyn Bautista, MSN, RN, CRRN
Sandra Linscott, BSN, RN, CRRN

Patrice King, BSN, RN, CRRN
Louis Njowo, RN
Sandra Gardner, ADN, RN
Conflicts of Interest
I have no conflicts of interest related to this presentation or the conference

Sponsorship
I did not receive any sponsorship or commercial support related to this project

Employment
I am currently self-employed as a coach/mentor for graduate nursing students
Learning Objectives

1. List methods to identify improvement opportunity
2. List components of the Systems-Level Change Model
3. Describe benefits of the Systems-Level Change Model
4. Apply the Systems-Level Change Model for improvement in your organization
5. Discuss implications for use of the Systems-Level Change Model
Overview

• Opportunity for improvement & project purpose

• Increasing capacity via the Systems-Level Change Model

• Conclusions

• Sustainment

• Lessons Learned

• Implications
## U. S. Population of Interest

<table>
<thead>
<tr>
<th>Disability Prevalence</th>
<th>Spinal Cord Injury (SCI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 56.7 million disabled</td>
<td>• &gt;276,000</td>
</tr>
<tr>
<td>• &gt; 28 million severe</td>
<td>• &gt;15,000 treated in VA system each year</td>
</tr>
</tbody>
</table>

(NSCISC, 2015; U. S. Census Bureau, 2012)  
(NSCISC, 2015; U. S. Department of Veterans Affairs)
Barriers to Care

U.S. General Population (non-veteran)
• 18% - affordability barriers
• 21% - non-financial barriers

U.S. SCI Veterans
• Experience same barriers

(Kullgren, McLaughlin, Mitra, & Armstrong, 2012; Penchansky & Thomas, 1981)

1. Department of Veterans Affairs
2. Veterans Health Administration
3. VHA Veterans Integrated Service Network (21)
4. Medical Center
5. SCI/D (24)

(U. S. Department of Veterans Affairs, 2015)
Current State of Extended Care Services 2015

Total Enrollment
429

Home Care
Max capacity = 30
FY 2015 = 55

Telehealth
Max capacity = 32
FY 2015 = 147

Annual Staffing Cost
$200,000 est.
Opportunity for Improvement
Extended Care Services

**Total Enrollment**
429

**Home Care**
Max capacity = 30
FY 2015 = 55

**Telehealth**
Max capacity = 32
FY 2015 = 147

**Annual Staffing Cost**
$200,000 est.

**OPPORTUNITY:**
>200 PATIENTS
Purpose

Increase Home Care and Telehealth

Extended Care Services Capacity
Project Approach

Highly Complex organization

1. multi-faceted evidence-based approach

2. multiple theories, frameworks and models
Secondary Purpose

Identify frameworks that would

• inform this project

• serve as a model for future projects
Organizational Context: Consolidated Framework for Implementation Research (Damschroder et al., 2009)

System Processes: Donabedian Conceptual Model (Donabedian, 1980)

Organizational Learning: Multimethod Assessment Process/Reflective Adaptive Processes (Stroebel et al., 2005)

Organizational Behavior: Behaviour Change Wheel (Michie, van Stralen, & West, 2011)

Outcome: Program Management Plan, 1st Step Toward Increased Access to Care

Systems-Level Change Model
Level 1 organizational context

Systems Change Model

Context:
Consolidated Framework for Implementation Research
(Damschroder et al., 2009)
Patient Needs Assessment

Each participant was asked:
1. Aware?
2. Past use?
3. Interest?
4. More information?
# Patient Needs Assessment

<table>
<thead>
<tr>
<th>Program</th>
<th># Aware (%)</th>
<th># Past Use (%)</th>
<th># Interest (%)</th>
<th># More Info (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Video Telehealth (CVT)</td>
<td>78.0 (51.6)</td>
<td>17 (11.3)</td>
<td>105 (69.5)</td>
<td>97 (64.2)</td>
</tr>
<tr>
<td>Home Telehealth (Telephone)</td>
<td>63 (41.7)</td>
<td>26 (17.2)</td>
<td>81 (53.6)</td>
<td>62 (41.0)</td>
</tr>
<tr>
<td>Secure Messaging</td>
<td>95 (62.9)</td>
<td>61 (40.4)</td>
<td>124 (82.1)</td>
<td>69 (45.7)</td>
</tr>
<tr>
<td>Home Care</td>
<td>112 (74.1)</td>
<td>65 (43.0)</td>
<td>111 (73.5)</td>
<td>61 (40.4)</td>
</tr>
</tbody>
</table>
Organizational assessment results & findings – **Part I. Culture**

<table>
<thead>
<tr>
<th>Internal Focus</th>
<th>Flexibility</th>
<th>External Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Group (22.69)</strong></td>
<td><strong>Developmental (14.62)</strong></td>
</tr>
<tr>
<td><strong>Hierarchical (37.31)</strong></td>
<td></td>
<td><strong>Rational (25.85)</strong></td>
</tr>
</tbody>
</table>

**Stability**

<table>
<thead>
<tr>
<th><strong>Organization Emphasis by culture type</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group</strong>: values associated with affiliation, teamwork, and participation</td>
</tr>
<tr>
<td><strong>Developmental</strong>: culture based on risk-taking innovation and change</td>
</tr>
<tr>
<td><strong>Rational</strong>: emphasis on efficiency and achievement</td>
</tr>
<tr>
<td><strong>Hierarchical</strong>: values and norms associated with bureaucracy</td>
</tr>
</tbody>
</table>

# Organizational assessment results & findings - Part II. Quality

<table>
<thead>
<tr>
<th>Variable - Baldrige Factor Scale</th>
<th>Total Mean</th>
<th>Std Dev</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership (LEAD)</td>
<td>4.07</td>
<td>0.51</td>
<td>3.33 - 4.83</td>
</tr>
<tr>
<td>Customer Satisfaction (CSAT)</td>
<td>3.88</td>
<td>0.72</td>
<td>3.25 - 5.00</td>
</tr>
<tr>
<td>Quality Management (QM)</td>
<td><strong>4.40</strong></td>
<td>0.36</td>
<td>3.75 - 5.00</td>
</tr>
<tr>
<td>Information and Analysis (INFO)</td>
<td>4.17</td>
<td>0.61</td>
<td>3.00 - 5.00</td>
</tr>
<tr>
<td>Quality Results (QR)</td>
<td><strong>3.50</strong></td>
<td>0.58</td>
<td>2.50 - 4.25</td>
</tr>
<tr>
<td>Employee Quality Training (HRU)</td>
<td>3.79</td>
<td>0.70</td>
<td>2.50 - 5.00</td>
</tr>
<tr>
<td>Employee Quality Planning Involvement</td>
<td>3.85</td>
<td>0.59</td>
<td>2.80 - 4.80</td>
</tr>
</tbody>
</table>

**Likert Scale:** 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree, and 9 = Don’t Know
Teamwork Perception Questionnaire Results

(AHRQ, 2015)
Level 2

System Processes

System Processes:
Donabedian Model (Donabedian, 1980)

Context:
Consolidated Framework for Implementation Research (Damschroder et al., 2009)

Systems Change Model

Process Mapping  Time Logs
Patient Needs Assessment  Teamwork Perceptions
Organizational Assessment
### Problem Statement
Currently there are 429 patients enrolled in the SCIC; approximately 30 of these are enrolled in Home Care, 30 are enrolled in the Telehealth, and 20 in the Clinical Video Telehealth program. Less than 25% of the SCIC enrolled patients are served by Home Care and Telehealth combined. The healthcare utilization and management of the remaining patients is unclear.

### Goals
Utilize evidence-based interventions to increase capacity of Home Care and Telehealth programs within the SCIC. Increase capacity of Home Care program by XX%, and Telehealth program by XX% within XXX months.

### CUSTOMER (C)
VA Spinal Cord Injury Center customers are patients, families, nursing homes, home health and equipment companies.

### SCIC Logic Model

<table>
<thead>
<tr>
<th>INPUTS (I)</th>
<th>PROCESS (P)</th>
<th>OUTPUTS</th>
</tr>
</thead>
</table>
| *Physician referral*
*Lab results*
*Patient's changing functional ability*
*Change in home care provider status*
*Change in self-care ability/needs*
*Equipment or home modifications*
*CVT equipment* | **Activities**
Process begins with referral for either Home Care or Telehealth services
Referral Sources
*New Injury*
*Annual Evaluations*
*Weekly Interdisciplinary Team meetings - identify discharge needs*
*Psychosocial meeting*
identify barriers to D/C or to continuity of care
*Program discretion regarding frequency of interaction with patients SA radius = 100 miles
| **Telehealth**
*Monitoring BP*
*Glucose*
*CVD exam*
| **Indicators**
Short Term (3 months)
*Identify process bottlenecks in both programs*
*Identify possible solutions for issues*
*Develop action plan*
*Implement interventions (solutions)*
*Follow-up measurement*

<table>
<thead>
<tr>
<th></th>
<th><strong>Home Care</strong></th>
</tr>
</thead>
</table>
| | *Home visits*
| | *Nursing home visits*

### STRUCTURE

<table>
<thead>
<tr>
<th>SUPPLIERS (S)</th>
<th>PERSONNEL, POLICY</th>
</tr>
</thead>
</table>
| *Medical Staff* | *Interdisciplinary Team*
| *Nursing Staff* | *GECC*
| *VA Home Care (HBPC)* | *VHA Dir 1176, 2010*
| *VisN* | *VHAHB 1176-02, 2007*

### Assumptions
*100% of non-hospitalized SCIC patients should be managed by Home Care and/or Telehealth*
*The reasons for low enrollments numbers in these programs is unclear*
*Capacity can be increased for these programs to enroll and manage additional patients*

### Guidelines
*VHAHB 1176-01, 2011*
*VHA HB 1176-07, 2014 (ALS)*

NOTE: SIPOC (Suppliers, Inputs, Process, Outputs, and Customers) is a standard tool used in lean process improvement methodology. They are noted here to show relationship between this logic model, Donabedian’s conceptual model and Lean methodology.
## Process Mapping

**Results**

<table>
<thead>
<tr>
<th></th>
<th>Home Care</th>
<th>Telehealth</th>
</tr>
</thead>
<tbody>
<tr>
<td># Steps</td>
<td>42</td>
<td>53</td>
</tr>
<tr>
<td># Non-Value-Added Steps</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>% Non-Value-Added Steps</td>
<td>7%</td>
<td>34%</td>
</tr>
</tbody>
</table>

**Findings**

- Complex processes
- Duplication of effort
- Ineffective use of professional staff
## Time Logs

<table>
<thead>
<tr>
<th>WEEK ONE</th>
<th>DATE</th>
<th>ACTIVITY</th>
<th>TIME (in hrs.)</th>
<th>ACTIVITY</th>
<th>TIME (in hrs.)</th>
<th>ACTIVITY</th>
<th>TIME (in hrs.)</th>
<th>ACTIVITY</th>
<th>TIME (in hrs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Patient Encounter (include patient's name)</td>
<td></td>
<td>Travel Time (include distance)</td>
<td></td>
<td>Meeting (Specify which meeting)</td>
<td></td>
<td>Responding to phone messages</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>25-Jan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>26-Jan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>27-Jan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>28-Jan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>29-Jan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Activity Summary

<table>
<thead>
<tr>
<th>Activity</th>
<th>Home Care Hours Logged</th>
<th>Telehealth Hours Logged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient encounter</td>
<td>40.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Meetings</td>
<td>22.7</td>
<td>22.3</td>
</tr>
<tr>
<td>Telephone</td>
<td>10.7</td>
<td>14.8</td>
</tr>
<tr>
<td>Patient Record Review</td>
<td>9.2</td>
<td>4.5</td>
</tr>
<tr>
<td>Accreditation Prep</td>
<td>1.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Documentation</td>
<td>0</td>
<td>6.0</td>
</tr>
</tbody>
</table>
Level 3

organizational behavior

Systems Change Model

Organizational Behavior:
Behaviour Change (Michie, van Stralen, & West, 2011)

System Processes:
Donabedian Model (Donabedian, 1980)

Context:
Consolidated Framework for Implementation Research
(Damschroder et al., 2009)
Behavior Change Wheel
Part 1 - COM-B system

Figure 1 The COM-B system - a framework for understanding behaviour.
Behavior Change Wheel
Part 2 – Linking the Three Layers
### Gap Analysis

<table>
<thead>
<tr>
<th>Leadership Behavior Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain access to appropriate data</td>
</tr>
<tr>
<td>Manage staff time utilization</td>
</tr>
<tr>
<td>Review patient outcomes</td>
</tr>
<tr>
<td>Clarify directive interpretation</td>
</tr>
<tr>
<td>Extend limited network reach</td>
</tr>
<tr>
<td>Assess patient needs</td>
</tr>
</tbody>
</table>
Program Management Plan

Leadership Governance Accountability

<table>
<thead>
<tr>
<th>Desired Behavior</th>
<th>Metrics</th>
<th>Frequency</th>
<th>Outcome</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Monitor &amp; manage time utilization</td>
<td># patient encounters</td>
<td>Weekly</td>
<td>Effective time utilization</td>
<td>Effective use of professional time</td>
</tr>
<tr>
<td></td>
<td># patients in each acuity level (intensive, maintenance, preventive)</td>
<td></td>
<td>Appropriate level of care provided</td>
<td>Increased capacity</td>
</tr>
</tbody>
</table>
# Gap Analysis

## Clinical Staff Behaviors Gaps

<table>
<thead>
<tr>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accurately manage &amp; document time utilization</td>
</tr>
<tr>
<td>Document &amp; communicate process issues to leadership</td>
</tr>
<tr>
<td>Extend limited network reach</td>
</tr>
<tr>
<td>Assess patient outcomes</td>
</tr>
<tr>
<td>Desired Behavior</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>1. Monitor education effectiveness</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Organizational Learning:
Multimethod Assessment Process/Reflective Adaptive Processes (Stroebel et al., 2005)

Organizational Behavior:
Behaviour Change (Michie, van Stralen, & West, 2011)

System Processes:
Donabedian Model (Donabedian, 1980)

Context:
Consolidated Framework for Implementation Research (Damschroder et al., 2009)

Systems Change Model
organizational learning

Multimethod Assessment Process (MAP)/Reflective Adaptive Process (RAP)

Principles

• Shared vision, mission, shared values
• Time and space for learning & reflection
• Tension & discomfort are essential and normal
• Include stakeholders
• Actively involved leadership
Multimethod Assessment Process (MAP)/
Reflective Adaptive Process (RAP)

Use of multiple data collection methods

Qualitative
Quantitative
organizational learning

Multimethod Assessment Process (MAP)/Reflective Adaptive Process (RAP)

Shift in thinking, from mechanistic understanding to

• Facilitated change
• Tensions of change
• Qualitative & quantitative data
• Complex adaptive system

Beginning of transformation...
Level 5

Outcome: Program Management Plan, 1st Step Toward Increased Access to Care

Organizational Learning:
Multimethod Assessment Process/Reflective Adaptive Processes (Stroebel et al., 2005)

Organizational Behavior:
Behaviour Change (Michie, van Stralen, & West, 2011)

System Processes:
Donabedian Model (Donabedian, 1980)

Context:
Consolidated Framework for Implementation Research (Damschroder et al., 2009)

Systems Change Model
Recommendations

1. Adapt MAP/RAP principles
2. Commit to Program Management Plan
3. Collect meaningful data
4. Incorporate current evidence in reflection
5. Reach out to network partners
6. Follow up with periodic assessments
Next Steps...

Iterative Change Method

- Define
- Measure
- Implement
- Analyze
- Control

Evidence-based Home Care & Telehealth Program Redesign to increase capacity
Initial Results

Leadership

- initiated meetings with Home Care nurse
- Monday – plan for the week
- Friday – accomplishments for the week

Results

- Home Care visits increased from 25 to >50-60/month
- Asking for laptop
- Increased staff morale
Conclusions

- VHA organization is not designed for micro-system accountability
- Created awareness
- Created environment for learning
- Established Program Management Plan
- Preparations for Program Redesign have been initiated
- Introduced concept of culture change⭐⭐
Sustainment - Telehealth

Telehealth Secure Messaging Encounters Individuals Control Chart (I Chart)

- Secure Messaging Encounters
- UCL = 16.56
- CL = 9.69
- LCL = 2.82

Telehealth Clinical Video Tealhealth (CVT) Individuals Control Chart (I Chart)

- CVT Encounters
- UCL = 42.87
- CL = 22.92
- LCL = 2.97
Lessons Learned

<table>
<thead>
<tr>
<th>FACILITATORS</th>
<th>BARRIERS</th>
</tr>
</thead>
</table>
| • Use of theories, models & frameworks  
  • provided structure to project  
  • facilitated depth of understanding  
  • instilled confidence in intervention & recommendations  
  • generated organizational learning | • Unavailable patient outcomes data  
• Unavailable productivity data  
• Non-VA employee  
  • Time limitations  
  • Limited system access  
• Leadership wanting quick solution |
IMPLICATIONS

• Further use to test and validate model efficacy

• Dissemination of results
Questions?
Thank you!

Contact: Christine Nicholas | n2ncoach@gmail.com
Widespread Patient Distribution

60-85% within 100 mile radius

Legend

<table>
<thead>
<tr>
<th># Pts (%)</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;150 (&gt; 40.92)</td>
<td>1</td>
</tr>
<tr>
<td>20 - 149 (4.68 - 4.92)</td>
<td>1</td>
</tr>
<tr>
<td>10 - 19 (2.58 - 4.22)</td>
<td>1</td>
</tr>
<tr>
<td>4 - 9 (0.94 - 2.11)</td>
<td>1</td>
</tr>
<tr>
<td>&lt;3 (0.23 - 0.70)</td>
<td>1</td>
</tr>
</tbody>
</table>
PowerPoint Presentations Recommendations

• **General Information**
  • Your audience will be **multinational**. Be sure to explain/define any slang terms, acronyms, etc.
  • Slides should **not have more than five lines** of information apiece.
  • Be aware of time limitations.
  • Space information evenly on the slides.
  • Your speech should not written but highlighted on the page.

• **Color/Font**
  • Use the option for “Font TrueType”.
  • Maintain consistent fonts throughout, using **no more than two fonts on one slide**.
  • **Use traditional bullets (i.e., circles or squares)**, instead of ‘fun’ bullets. Depending on the version of PowerPoint used, some bullets may not transfer.
  • Ensure that your **background and font colors are easy to read** at a distance.
  • Fonts should be easy to read (**no smaller than 24-point**).
  • Style **headers in the same font and point size throughout** the presentation.
  • The **body of the slides should be in the same font and font size throughout** the presentation.

• **Animation**
  • Limit animations.
  • If you are using animation, be sure that it is **timed and that transitions do not occur on the click**.