

**Title:**

Implementing a Systems-Level Change Model to Increase Capacity of One VA Spinal Cord Injury Center

**Christine M. Nicholas, DNP**

*Consultant, San Antonio, TX, USA*

Seth D. Chandler, DO

*Spinal Cord Injury Center, South Texas Veterans Health Care System, San Antonio, TX, USA*

Nancy Cuevas-Soto, DNP

*Nursing Education, South Texas Veterans Health Care System, San Antonio, TX, USA*

Frank Puga, PhD

*School of Nursing, University of Texas Health Science Center San Antonio, San Antonio, TX, USA*

---

**Session Title:**

Evidence-Based Practice in the ICU

**Slot:**

H 12: Monday, 30 October 2017: 2:45 PM-3:30 PM

**Scheduled Time:**

2:45 PM

---

**Keywords:**

Evidence-based change, Organizational efficiency and Quality improvement

**References:**

Breimaier, H. E., Halfens, R. J. G., & Lohrmann, C. (2015). Effectiveness of multifaceted and tailored strategies to implement a fall-prevention guideline into acute care nursing practice: A before-and-after, mixed-method study using a participatory action research approach. *BMC Nursing*, 14(1). doi:10.1186/s12912-015-0064-z

Breimaier, H. E., Heckemann, B., Halfens, R. J. G., & Lohrmann, C. (2015). The Consolidated Framework for Implementation Research (CFIR): A useful theoretical framework for guiding and evaluating a guideline implementation process in a hospital-based nursing practice. *BMC Nursing*, 14(1). doi:10.1186/s12912-015-0088-4

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science : IS*, 4(50). doi:10.1186/1748-5908-4-50

Damschroder, L. J., Moin, T., Datta, S. K., Reardon, C. M., Steinle, N., Weinreb, J., . . . Richardson, C. R. (2015). Implementation and evaluation of the VA DPP clinical demonstration: Protocol for a multi-site non-randomized hybrid effectiveness-implementation type III trial. *Implementation Science*. doi:10.1186/s13012-015-0250-0

Donabedian, A. (1980). Explorations in quality assessment and monitoring: The definition of quality and approaches to its assessment (Vol. I). Ann Arbor, MI: Health Administration Press.

Gardner, G., Gardner, A., & O'Connell, J. (2014). Using the Donabedian framework to examine the quality and safety of nursing service innovation. *J Clin Nurs*, 23(1-2), 145-155. doi:10.1111/jocn.12146

Garg, S. K., Lyles, C. R., Ackerman, S., Handley, M. A., Schillinger, D., Gourley, G., . . . Sarkar, U. (2016). Qualitative analysis of programmatic initiatives to text patients with mobile devices in resource-

limited health systems Healthcare Information Systems. BMC Med Inform Decis Mak, 16(1). doi:10.1186/s12911-016-0258-7

Hung, D., Gray, C., Martinez, M., Schmittiel, J., & Harrison, M. I. (2016). Acceptance of Lean redesigns in primary care: A contextual analysis. Health Care Management Review. doi:10.1097/HMR.000000000000106

Khan, A., Boustani, M., & Lasiter, S. (2015). The critical care recovery center: An innovative collaborative care model for ICU survivors. AJN The American Journal of Nursing, 115(3), 24-31. doi:10.1097/01.NAJ.0000461807.42226.3e

Kullgren, J. T., McLaughlin, C. G., Mitra, N., & Armstrong, K. (2012). Nonfinancial Barriers and Access to Care for U.S. Adults. Health Services Research, 47(1 Pt 2), 462-485. doi:10.1111/j.1475-6773.2011.01308.x

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. Implement Sci, 6. doi:10.1186/1748-5908-6-42

Michie, S., & West, R. (2013). Behaviour change theory and evidence: a presentation to Government. Health Psychology Review, 7(1), 1-22. doi:10.1080/17437199.2011.649445

Stroebe, C. K., McDaniel, R. R., Crabtree, B. F., Miller, W. L., Nutting, P. A., & Stange, K. C. (2005). How Complexity Science Can Inform a Reflective Process for Improvement in Primary Care Practices. Joint Commission Journal on Quality and Patient Safety, 31(8), 438-446.

Waxmonsky, J. A., Giese, A. A., McGinnis, G. F., Reynolds, R. T., Abrahamson, A., McKittrick, M. L., . . . Thomas, M. R. (2011). Colorado access' enhanced care management for high-cost, high-need Medicaid members: preliminary outcomes and lessons learned. J Ambul Care Manage, 34(2), 183-191. doi:10.1097/JAC.0b013e31820f64be

**Abstract Summary:**

This presentation will describe the implementation of a systems-level change model to guide the evaluation of one Spinal Cord Injury and Disorders Center (SCIC). The model provided a framework to assess organizational culture and context, system processes, organizational behavior and, organizational learning. The presentation includes a discussion of initial outcomes.

**Learning Activity:**

| LEARNING OBJECTIVES   | EXPANDED CONTENT OUTLINE  |
|---|---|
| Participants will be able to list methods used to identify opportunity for improvement. | I. Improvement project overview and review a. Opportunity for improvement b. Current state of extended care services at a VA SCIC                     |
| Participants will be able to list components of the Systems-Level Change Model.         | II. Description of the Systems-Level Change Model a. Organizational context b. System processes c. Organizational behavior d. Organizational learning |
| Participants will be able to describe benefits of using the Systems-Level Change Model. | III. Benefits of each component of the Systems-Level Change Model a. Consolidated Framework for Implementation Research                               |

|  |  |
|--|--|
|  | (CFIR) b. Donabedian Conceptual Model c. Behaviour Change Model d. Multimethod Assessment Process/Reflective Adaptive Process e. Program Management Plan |
| Participants will be able to apply the Systems-Level Change Model for improvement in their respective organizations. | IV. Program Evaluation and Results a. Project Team b. Organizational assessment c. Stakeholder interviews d. Evaluation plan e. Sustainability           |
| Participants will be able to discuss implications for use of the Systems-Level Change Model.                         | V. Next steps a. Further use of the System-Level Change Model b. Dissemination of results achieved using this model                                      |

**Abstract Text:**

**PURPOSE:** Access to healthcare is a national problem, with approximately 18% of U.S. adults experiencing barriers to services meeting their healthcare needs (Kullgren, McLaughlin, Mitra, & Armstrong, 2012). This gap is especially evident in persons with physical disabilities. The purpose of this project was to increase capacity of Home Care and Telehealth Extended Care Services in a Veterans Health Administration (VHA) Spinal Cord Injury and Disorders Center (SCIC) using an evidence-based Systems-Level Change Model.

**METHODS:** Healthcare is a complex adaptive system with interdependent, non-linear components. The complexity of healthcare has implications for system implementation of evidence based interventions and quality improvement due to the multiple system levels influencing process and clinical outcomes. Thus this project focused on developing and implementing a model to better understand the relationship between interacting agents within a system. The Systems-Level Change Model is comprised of four different models/frameworks, each addressing a different aspect of assessment and understanding, as well as guiding selection of interventions and recommendations. The Consolidated Framework for Implementation Research (CFIR) guided assessment of the organizational culture and context (Breimaier, Halfens, & Lohrmann, 2015; Breimaier, Heckemann, Halfens, & Lohrmann, 2015; Damschroder et al., 2009; Damschroder et al., 2015; Garg et al., 2016; Hung, Gray, Martinez, Schmittiel, & Harrison, 2016). Donabedian's Conceptual Model for healthcare quality provided a structure for identifying and assessing the SCIC processes (Donabedian, 1980; Gardner, Gardner, & O'Connell, 2014). Assessment of organizational behavior and selection of interventions was guided by application of The Behaviour Change Wheel (S. Michie, van Stralen, & West, 2011; Susan Michie & West, 2013). Finally, the Multimethod Assessment Process/Reflective Adaptive Process (MAP/RAP), which is grounded in complexity science, was used to facilitate data collection, analysis and reflection (Khan, Boustani, & Lasiter, 2015; Stroebel et al., 2005; Waxmonsky et al., 2011). MAP/RAP incorporates both qualitative and quantitative data collection and analysis (MAP), in addition to thoughtful reflection of the data to move an organization from mechanistic thinking to adaptive learning (RAP). Qualitative and quantitative data were collected through formal and informal stakeholder interviews, surveys, process mapping and time logs.

**RESULTS:** Results from the evaluation revealed a hierarchical and internally-focused culture, leadership lacking access to information and data that would help improve management of operations, programs, and inefficient processes. Stakeholder interviews revealed incongruent interpretation of directives among SCIC personnel, inefficient processes, duplication of work, and ineffective use of professional resources. A patient needs assessment revealed a widely geographically-dispersed patient population with varied program awareness, and high interest rates in the Extended Care services.

**CONCLUSIONS:** Using a Systems-Level Change Model provided a holistic view of the SCIC and resulted in: 1) an immediate 41.6% increase in the number of patients seen by the extended care services, 2) an immediate change in management interaction with staff, 3) the development of a Program Management

Plan to measure and monitor program and patient outcomes, to set baseline data in preparation for future iterative improvement intervention implementations and, 4) verbal and non-verbal indications of improved staff morale.

**IMPLICATIONS:** Implications for nursing and administration include 1) further use of this Systems-Level Change Model by the quality improvement community and researchers to test its efficacy in evidence-based improvement implementations and, 2) dissemination of implementation results achieved with use of the Systems-Level Change Model so others may benefit from valuable experiences.