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An Innovative Nurse Leader Redesign to Improve Span of Support

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Nursing Practice

by

Michelle Carolyn Tolentino

2020

ABSTRACT OF THE DISSERTATION

An Innovative Nurse Leader Redesign to Improve Span of Support

by

Michelle Carolyn Tolentino

Doctor of Nursing Practice

University of California, Los Angeles, 2020

Professor Felicia S. Hodge, Chair

Background: Hospital budget constraints and re-allocation of resources have led to a decrease in nurse manager positions, increasing spans of control (SOC). Large SOC can have direct impacts on nurse engagement and clinical outcomes. Nurse managers in the organization with large SOC were overwhelmed by administrative functions that took them away from daily interactions with patients, families, and staff. Management roles and responsibilities were not clearly defined, resulting in role confusion and role blending. Wide ranging SOC were worsened by the varying levels of experience and competency among managers. Additionally, there was an increase in labor activity in the organization and a notable reduction in nurse participation in hospital surveys, with Press Ganey Nurse Engagement survey scores lower than national benchmarks. **Methods:** This quality improvement project examined the feasibility of a nursing leadership structure and practice-based change. The project involved conducting a needs assessment and re-designing unit leadership structure to improve SOC. A thorough needs assessment, review of past performance in standardized benchmarking surveys, and review of the literature were

utilized in the leadership redesign. Baseline measurements were established for the organization to assess the effectiveness of the change. The measurements included: 1) Leadership Access and Responsiveness domain from Press Ganey Nurse Engagement survey; 2) nurse perception of unit management and work environment using a focus group approach and Qualtrics survey with pilot unit staff; 3) patient satisfaction scores; and (4) nurse sensitive indicators.

Results: Comprehensive needs assessment, SWOT analysis, nurse manager ratios, nurse sensitive indicator performance, and patient satisfaction scores suggested the need for quality improvement project to address the gaps in unit leadership.

Conclusion: A new leadership structure was designed and new manager position was created to improve SOC. Outcome measures that include nurse engagement, patient satisfaction, and nurse sensitive indicators were established. The best evidence suggests that smaller SOC is related to higher levels of nurse engagement and ultimately to improved patient safety and staff satisfaction. Redesigning the SOC model is essential to achieving improved nurse engagement and clinical outcomes.

The dissertation of Michelle Carolyn Tolentino is approved.

Mary-Lynn Brecht

Carol L. Pavlish

Jian Li

Felicia S. Hodge, Committee Chair

University of California, Los Angeles
2020

Dedication

To my father, Dominador A. Tolentino who passed away February 2020, four months before

completing the DNP program, in your memory I persevered.

To my two children, Alma and Santiago, you inspire me every day to have strength and courage

to overcome anything.

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To all of my family members, friends, and colleagues that supported me through this journey, there were many challenging times that I had to endure the last two years and you all encouraged and inspired me to persevere through those moments… I did it!

Biographical Sketch

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MSN University of California, Los Angeles (UCLA), Nursing Administration
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PUBLICATIONS

Tolentino, M**.,** Huang, C., & Urbano, E. **(2016).** Strategies to Reduce the Use of Sitters on an Acute Care Pediatric Unit. *American Journal of Medical Quality*, **31** (supplement 1), p. 17S.

PRESENTATIONS AND INVITED LECTURES

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Poster Presentation. *Nursing Always Report: Using the electronic health record to increase transparency and inspire individual accountability.* International Council of Nurses (ICN) Congress 2019 – Beyond Healthcare to Health. Singapore, June 2019
Poster Presentation. *Improving Patient Safety through a Nursing Volunteer Program at a Large Academic Medical Center in Southern California.* International Council of Nurses (ICN) Congress 2017 – Nurses at the Forefront of Transforming Care. Barcelona, Spain. June 2017
Podium Presentation. *UCLA Health Nursing and Magnet.* 20 Junior Faculty from Shanghai University. Ronald Reagan UCLA Medical Center. Los Angeles, CA. June 2017
Podium Presentation. *Strategies to Reduce the Use of Sitters on an Acute Care Pediatric Unit.* Presented at the UCLA Evidence Based Practice (EBP) Conference 2016. Los Angeles, CA. March 2016
Podium Presentation. *Strategies to Reduce the Use of Sitters on an Acute Care Pediatric Unit.* Presented at the University Health System Consortium (UHC) Annual Conference 2015. Orlando, FL. October 2015

Chapter 1

Financial and economic challenges forced healthcare organizations to reassess existing

processes and innovate to remain fiscally viable. For hospital nursing, changes in budgets and re-

prioritization of resources resulted in downsized leadership structures and variations in practice

models. These constraints led to reduction in nurse manager positions for the same number of

nursing units and direct reports, increasing spans of control (SOC), (Wong et al., 2015). Span of

control is defined as the number of staff a supervisor or manager oversees (Cathcart, Jeska,

Karnas, Miller, Pechacek, & Rheault, 2004). The authors note that with classic SOC, having

eight to 12 people to manage was appropriate. However, having up to 30 people to manage was

acceptable for "simple" operations. Nurse engagement decreased when managers supervised

more than 15 people and decreased again with 40 or more people (Cathcart et al., 2004).

Downward trends in quality and performance indicators in units is associated with large SOC

(Simpson, Dearmon, and Graves, 2017).

Nurse managers are essential to create and maintain a supportive work environment and

to achieve optimal patient outcomes (Squires, Tourangeau, Spence Laschinger, & Doran, 2010).

Larger SOC, time constraints, and the nature of 24/7 operational hours can affect a manager's

capacity to influence nurse satisfaction, having a direct negative impact on patient care (Meyer,

O'Brien-Pallas, Doran, Streiner, Ferguson-Pare, & Duffield, 2011). Reducing SOC may improve

nurse engagement and patient clinical outcomes (Cathcart et al., 2004). Healthcare organizations

must continue to find ways to support clinical operations in a fiscally responsible way to remain

competitive in today's healthcare environment. Span of control is one of the operational

opportunities that must be addressed due to its impact on patient care outcomes, which in turn

influences patient wellbeing and financial viability of healthcare organizations.

Problem Statement

At an academic medical center in Southern California, the need for change in SOC was identified by senior leadership based on several factors including recent labor action that brought to light the need for more supervision during night, weekend, and holiday shifts. Additional factors included staff feedback through annual engagement surveys, manager input, and nurse sensitive indicator performance. Complexity and cost of care over time have contributed to variations in inpatient nursing unit management structures, resulting in inconsistent clinical patient outcomes. The organization's annual nurse engagement scores collected by a third-party vendor are below national benchmarks as compared to similar academic medical centers and there is an increase in hospital-acquired conditions (HACs). National benchmarks are essential to maintain nursing Magnet status, obtain reimbursement, and to maintain quality standing in the medical community.

Throughout the organization, wide ranges of SOC exist and leaders possess varying levels of experience, skills, and competencies. Nurse leaders today continue to have an increased responsibility for 24-hour oversight and the efficient management of staff providing patient care in acute care settings. Staff and patient needs are important factors to assess and manage, as both can positively or negatively influence patient outcomes. A thorough needs assessment is needed to collect further data on the problem to determine how to address these issues.

Concepts

For the purposes of this process change, the senior nursing leadership team agreed to rename SOC to span of support (SOS). These terms will be used synonymously. The goal of changing this term to SOS was to embody a more positive image of the change that would better support clinical staff and unit leadership. Nurse sensitive indicators for this project, as defined by

(National Database of Nursing Quality Indicators, NDNQI), include Catheter Associated Urinary Tract Infections (CAUTI), Central Line Associated Blood Infections (CLABSI), and Patient Falls.

Purpose and Objectives

The overall purpose of this quality improvement project is to assess nurse manager SOS and baseline quality indicators and collaborate with a leadership advisory group to develop an innovative infrastructure that improves SOS to increase staff access to nursing leadership and nurse leader responsiveness. Specifically, the objectives of the project were:

1. To examine the current nursing leadership structure, practice, and SOS

2. To analyze baseline nurse sensitive indicators of quality care and nurses' perceptions of current leadership structure

3. To redesign nursing leadership structure and practice to achieve an improved SOS using a collaborative approach

4. To establish evaluation measures to assess impact of SOS changes

The purpose and objectives of this project align with nursing department strategic priorities in sustaining a thriving community of outstanding staff and future nurse leaders by creating a nurturing environment to support staff in achieving goals aligned with the nursing mission (UCLA Health Department of Nursing, 2017). The department of nursing vision is to deliver leading edge patient care through professional nursing practice, education and research.

Theoretical Framework

Organizational change is inevitable in meeting the demands of a complex, costly, and growing healthcare system. Utilizing a theoretical framework when planning a successful change initiative creates a structure for the work and can contribute to its success (Moran & Burson,

2020). To achieve the specific goals of this quality improvement project, Lewin's Theory of Planned Change was utilized. Lewin's change theory addresses the specific steps achieve the goal to move from current state to ideal state (Hussain et al., 2018). In this case, the academic medical center explored the need to move from a large to a small nurse manager SOS by preparing a needs assessment, literature review, and collaborative design process.

Three elements of Lewin's change theory include Unfreezing, Moving, and Refreezing. The first stage of Lewin's change theory termed Unfreezing positions organizations for change. Shirey (2013) states that this stage is initiated by a change agent acknowledging the need for change in response to a problem, and that as a team, the group agrees with the change. In the first stage of this project, a comprehensive needs assessment that included an evaluation of the nursing leadership current state, Strengths, Weaknesses, Opportunities and Threats (SWOT), and a gap analysis were conducted to position the organization for the change. Key element of this stage includes staff recognition of the importance of improving access to and nurse engagement with leadership and relationship to clinical outcomes. Forming the right teams with key stakeholders to drive the change is important to the successful implementation and acceptance of process change (Institute for Healthcare Improvement (IHI), 2020)

The second stage of Lewin's framework is the Moving or Transitioning stage, in which change should be treated as a process (Shirey, 2013). In this transitional stage, leaders develop a plan and engage others in the change process. Difficulties may arise in this stage as individuals respond differently to change and resistance to change may need to be addressed. To improve SOS, the second stage of the quality improvement project included the collaborative process of redesigning the unit leadership structure new management role, education and communication on the phased implementation plan. To achieve a clearer understanding of the need for change a

comprehensive education and communication plan was implemented which included the innovative redesign of leadership structure to improve SOS and the introduction to the newly developed Clinical Nurse Manager (CNM) position.

Refreezing is the third stage of Lewin's change theory. It occurs after the change has been implemented and focuses on assuring changes are sustained (Shirey, 2013). Managing the staff response to this change will be a priority for nursing leadership. Having a new manager with specific roles and responsibilities, the staff will have to adjust to previous reporting structure and to additional oversight. It will take time to adjust to this change in leadership structure that supports a smaller SOS. The addition of the CNM into the culture and environment will need time and attention until it becomes the new norm on the nursing unit (Shirey, 2013). The passage of time will determine the stability of the unit from the change and if necessary, the process may need to start over and be revised if after evaluation, it is not meeting the needs of the patients, staff, and unit. This third stage will occur after the new CNMs have started and adequate time has passed to evaluate the process.

According to Shirey (2013), strengths of this theoretical framework include its ease of use, versatility, and adaptability. The author further suggests that this theory helps support nurse leaders in championing change. The success of the implementation of a new CNM to improve nursing SOS will rely heavily on the implementation of this new design by nursing leadership. Leadership will play a key role in the acceptance and sustainment of the unit leadership design and practice change that supports a smaller SOS. Ongoing assessment of the change should be completed over time for a more accurate evaluation of the new role's effects on staff perception of leadership access and responsiveness and nurse sensitive indicators.

Chapter 2 Synthesis of Evidence

PICO(T)

The PICO(T) question used to support the literature search on the topic of SOS, the initial

needs assessment, and the collaborative change-planning process was: For clinical nurses in an

adult acute care unit at an academic medical center (P), will the introduction of a change in

nursing leadership structure to address SOS (I) compared to current practice (C) improve nurse

perception of access and responsiveness of nursing leadership and nurse sensitive clinical

outcomes (O) in the year following its implementation (T)?

Evidence Search

In performing the literature review for the project, PubMed, EMBASE, and the

Cumulative Index to Nursing and Allied Health Literature (CINAHL) were utilized to search key

concepts derived from the project PICO(T) question. Search items used were SOC, SOS, nurse

manager SOC, nurse engagement, nurse satisfaction, nurse engagement and clinical outcomes,

nursing unit management, nursing leadership, nursing leadership structure, and needs

assessment. Possible synonyms searched included adverse clinical outcomes and manager scope.

Additionally, through Boolean logic, terms were searched including SOC and nursing, SOC and

nurse manager, SOC and nurse engagement, SOC and clinical outcomes, SOC and academic

medical centers, needs assessment and nursing leadership, and other similar searches. Medical

Subject Headings (MeSH) terms were utilized to link to additional literature topics found

relevant to the PICO question including nursing administration; nursing,

supervisory/organization and administration; and job satisfaction. To find additional relevant

literature, the cited link was utilized to access other articles in which the author(s) were cited.

The articles reviewed were all in English and dated between the years 2004 - 2019. Based on the

literature search, the earlier publications were still relevant and cited by majority of research literature published on SOC.

Synthesis

The literature utilized in support of the leadership practice change in SOC is outlined within the Table of Evidence (TOE) (see Table 1). Wong et al. (2015) examined the relationships between SOC and manager job and unit performance outcomes through a non-experimental predictive survey. The researchers examined nurse manager characteristics and SOC in relation to performance outcomes, nurse engagement, job satisfaction, retention, quality clinical outcomes, and patient safety. Nurse managers in academic medical centers participated in the study, which is similar to the site of this scholarly project. A validated and reliable SOC tool established by The Ottawa Hospital (TOH) measured manager performance and outcomes. A low response rate, however, limits generalizability of the research study and accounts for potential bias. This research proposed that SOC predicted manager assessed adverse outcomes, contributed to decreased job satisfaction, and work control. Managerial experience, self-esteem, SOC, and availability of resources affected manager job and unit outcomes (Wong et al., 2015).

Research by Doran et al. (2004) examined the impact of SOC on leadership and leader performance. Conducted in academic and community medical centers, the study examined nurse manager leadership styles and SOC on nurse job satisfaction, patient satisfaction, and turnover. The study reported a 96% survey response rate and 99% participation rate from those who met study criteria. Results showed negative correlation of SOC on patient satisfaction and turnover, but did not report such correlations regarding nurse satisfaction. Leadership styles examined showed some positive effects, yet none could overcome wide SOC (Doran et al., 2004).

In a third research article, researchers found a downward trend in quality and performance indicators in units with large SOC (Simpson, Daemon, & Graves, 2017). The validated Ottawa-TOH tool was also used in this study to measure SOC and Leadership Practices Inventory (LPI) to assess leadership behaviors. The internal reliability of the LPI was measured by the Cronbach alpha, showing strength with all scales above the .70 level and validity of 0.92. Study findings supported the need to address manager SOC and to provide additional resources to managers with large SOC. Nurse managers reported increased satisfaction and less burnout after being given administrative resources and the opportunity to participate in leadership development. Limitations of this study include a small sample size and short timeframe for implementation. For this scholarly project, the same limitations on sample size and timeframe were considered.

Meyer et al. (2011) examined SOC of nurse manager's influence on nurse supervision satisfaction using a descriptive, correlational design to collect survey data, work log, and human resource data from urban acute care hospitals. Half of the participating hospitals were academic medical centers. A convenience sample of managers garnered a 33.3% agreement of participation; however, there was an 86% survey completion from this group. The staff nurse participation rate per manager was 33.6%. The researchers also used LPI to assess managers' behavior and the Satisfaction with My Supervisor Scale, to measure nurse satisfaction with a Cronbach alpha of 0.97 for this sample. Meyer et al. (2011) suggest that transformational leadership positively influenced nurse supervisor satisfaction. SOC, time, and operational hours affect a manager's capacity to influence nurse supervision satisfaction and should be factored into management positions (Meyer et al., 2011).

Cathcart et al. (2004) found a positive change in employee engagement scores after the reduction in SOC for four managers within the institution. The researchers utilized employee engagement questions using a 5-point Likert scale. Further analysis on SOC and employee engagement using employee demographics, position, and job type found a consistent relationship between low mean engagement scores and increased SOC (Cathcart et al., 2004). Demographic variables of the employees in this study included full time versus part time status, management versus non-management role, membership in union, and patient care versus non-patient care role. Declining mean engagement scores were found across each demographic variable (Cathcart et al., 2004). A relatively small sample size was used in this study. There is value in this research as the scope of the proposed scholarly project intervention will be limited to one unit and will utilize a nurse engagement survey as an outcomes measure.

To summarize, overall the literature review suggests that SOC has an influence on staff engagement, staff satisfaction, staff retention, organizational outcomes, patient adverse outcomes, and patient satisfaction. For organizations to adequately support a healthy practice environment, SOS needs to be assessed and addressed. However, SOC alone cannot be examined independently in determining factors that affect nursing engagement and patient outcomes. Organizations need to address SOS in conjunction with factors such as administrative clerical support, manager engagement and support through coaching, education, mentoring, and increased locus of control.

Chapter 3 Methods

Institutional Review Board (IRB) Statement

This quality improvement project examined a leadership practice-based issue and implementation of best evidence to implement change. Approval from UCLA Health Research and Innovation Council (RIC), formerly known as Nursing Research Practice Council (NPRC) and the UCLA IRB was obtained prior to the collection of data. As a quality improvement project, it was exempt from full IRB review.

Project Design

The project involved conducting a thorough needs assessment and gap analysis and utilizing the results to design a new leadership SOS structure. By adding a new manager position to an inpatient adult acute care unit, the nursing leadership structure, practice, and SOS would change. A pilot unit strategy and evaluation criteria were established to assess the effectiveness of the change in SOS 12 months post implementation.

Steps to assess and design the leadership structure and practice change included: (a) conducting a baseline assessment and current state of the nursing leadership structure, the unit leader's number of direct reports or nurse manager to staff ratio, leader experience and preparation, number of open nursing managerial positions, administrative support structure, patient satisfaction scores, nurse sensitive indicator outcomes, and nurse engagement scores; (b) reporting data findings to nurse leaders at leadership retreat; (c) conducting SWOT and gap analysis as part of the planned change process; and (d) identifying a plan for change. A timeline of these steps can be viewed in Appendix C.

Setting

The project site is a quaternary care academic medical center, located in Southern California. The hospital site is also an American Nurse Credentialing Center (ANCC) Magnet™ Designated hospital since 2005. The ANCC designates organizations worldwide for excellence in nursing service, where leadership strategic goals improve patient outcomes. An adult acute care inpatient unit from this academic medical center was selected as a pilot unit to evaluate for this project.

Participants

At the time the needs assessment was conducted, there was a total of 84 staff members on the pilot unit. Sixty-two (62) out of 84 staff members were RNs. Seventy-six percent (76%) of RN staff had a baccalaureate degree in nursing or higher and 23% possessed national specialty certification in nursing.

Tools and Instruments

Nurse Demographic Data

Demographic data collected by the nursing department included the total number of all unit staff, number of RNs, years of service, highest degree, and specialty certification.

Press Ganey Nurse Engagement Survey

The Press Ganey Survey is a validated nurse engagement tool acquired from NDNQI. Originally developed by the American Nurses Association (ANA), it was first administered in 2002 through the University of Kansas, School of Nursing (Montalvo, 2007). Thousands of Press Ganey Nurse Engagement surveys have been completed in hundreds of hospitals across the nation by eligible RNs. The survey is used as part of the application for ANCC Magnet™ designation.

The survey contains seven domains that measure nurse engagement and satisfaction. The seven domains include adequacy of resources and staffing, autonomy, fundamentals of quality nursing care, interprofessional relationships, leadership access and responsiveness, professional development, and RN-to-RN teamwork and collaboration. The survey uses a Likert type scale (1-6), ranging from strongly agree (1) to strongly disagree (6). For this project, the unit outcomes from the items of the leadership access and responsiveness domain will be assessed. Items from the leadership category of the Press Ganey Nurse Engagement Survey are listed in Appendix A.

The Press Ganey survey was disseminated to eligible nursing staff through a unique individual link by hospital email. This link was created to prevent nursing staff replication and to assure confidentiality. An email was sent from Press Ganey on Monday morning each week of the survey, over a two-week period. Once an employee completed the survey, the survey email reminder stopped. One final email was sent out on the last day of survey to the RNs who still had not completed the survey. Huddle messages, emails, and flyers sent out by the nursing department were used to promote survey participation.

Registered Nurse engagement survey participation rates were taken from a retrospective review of survey completed by pilot unit in March 2019. Survey participation requirements excluded staff with less than 90 days of employment as a RN with the medical center. RN staff on a leave of absence (LOA) or separated from the organization were removed post survey completion.

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Survey

To measure patient satisfaction the academic medical center uses the Center for Medicare and Medicaid (CMS) HCAHPS survey, a standardized national survey instrument and data collection methodology for measuring patient's perspective on hospital care (HCAHPS, 2020).

In May 2005, the National Quality Forum (NQF), an organization established to standardize

health care quality measurement and reporting, formally endorsed the CAHPS® Hospital

Survey. The HCAHPS Survey is composed of 29 items: 19 items that encompass critical aspects

of the hospital experience. For nursing, the key driver to assess patient satisfaction is through the

nursing communication domain. From this domain, the hospital measures four of the

fundamental questions that assess patient satisfaction with nursing (see Appendix B).

Pilot Unit Group Session

Staff from the pilot unit participated in a small group session at the hospital in which

proposed change to leadership structure and CNM role was presented by Power point, followed

by opportunity to ask questions on what was presented. The 10 participants of the pilot unit

group session were RNs who were committee members of the unit practice council (UPC)

(professional governance council).

Qualtrics® Span of Support Unit Survey

To assess more recent sentiment of staff in terms of leadership access and responsiveness

and to seek qualitative comments from staff, a Qualtrics® Span of Support survey was developed

(Appendix F). The survey was administered to pilot unit staff via an online Qualtrics® platform

post group information session. Qualtrics® is an online survey platform that is accessible and

securely administered through the organization. Staff scan a Quick Response (QR) code with

mobile phone, post UPC member group session, to access and complete the survey. The

participants did not have to provide a name, which allowed responses to remain anonymous. A

follow up email to complete the Qualtrics® survey was sent out by project leader to members of

the UPC if it was not completed on the day of the group session. Participant demographic

information was collected for this survey that included years as nurse, specialty certification,

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highest nursing degree, work primarily on day or night shift, and number of weekend shifts per month. A five-point Likert type scale was used for SOS survey questions. Qualitative comments were reviewed from survey to identify any SOS and leadership themes.

Nurse Sensitive Indicators

Nurse sensitive indicator unit performance in CLABSI, CAUTI, and Patient Falls was accessed via Tableau® database made available by the medical center department of nursing. Tableau® is an online data and analytics platform utilized by the organization to track nurse sensitive indicators, nurse engagement scores, and other quality outcomes.

Project Timeline

The initial timeline established for the quality improvement project was revised multiple times due to different internal and external factors. Due to the COVID-19 global pandemic, the original time frame for the new CNMs to start in March was postponed. The project identification and needs assessment was initiated in September 2018 culminating in the next phase of the project of onboarding the new CNMs at the end of June 2020 and evaluation in June 2021 (see Appendix C for revised timeline).

Chapter 4 Results and Recommended Redesign

A current state and gap analysis were developed from the comprehensive and collaborative needs assessment performed for this project. Outlined below are the results from the needs assessment including a SWOT analysis, nurse to manager ratio, nurse engagement, patient satisfaction, and nurse sensitive indicators. Furthermore, future recommendations based on needs assessment outcomes are presented.

Results

SWOT Analysis

Internal and external forces can affect a project or program implementation. Internal forces examine strengths and weaknesses of the project (Waxman & Barter, 2018). External forces look at opportunities and threats. A SWOT analysis was completed during a senior leadership retreat to determine gaps and market analysis for the SOS project (see Appendix D). Based on the SWOT analysis, strengths include having a leadership structure with a UD, assistant manager, nurse educator, and Clinical Nurse Specialists (CNS) to support some units and there is adequate senior director level support for unit managers. Adapting new structure and positions would be budget neutral for most units. Additionally, having a pilot unit to inform and adjust as necessary before hospital wide implementation.

Weaknesses identified in collaboration with senior nursing leadership include large manager to nurse ratios; no structured leadership development and succession planning; manager role blending and confusion; and limited access to managers especially on "off shifts". Off shifts are usually evening, night, weekend and holiday shifts that are often not attractive to potential nurse managers. Not all nursing units have available positions for leadership restructure. There are low nurse engagement scores, which is of concern because research suggests that it is critical

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to patient satisfaction and clinical outcomes (Dempsey &Reilly, 2016). Evaluation of one pilot unit may not provide sufficient evidence to support hospital wide implementation. To address the weaknesses, adding additional pilot units should be considered. Flexibility in hours in the evenings and nights may make the position more attractive to candidates. Initially the Administrative house supervisor in partnership with Unit Directors (UD) will need to be the main source of support and mentoring at night until more CNMs that will cover off-shifts are hired on other units.

For external forces, opportunities include the assessment of all units for development of an innovative redesign to improve SOS; manager role clarification; specific manager role professional development model; influence on recruitment of new nurses and nurse manager; and positive impact on patient satisfaction and clinical outcomes. Potential threats to the project include union inquiries regarding the management change; staff resistance especially to night and weekend supervision; night and weekend salary differentials; and undesirable work hours for ideal candidates interested in promotion opportunities. Developing a clear and consistent message from leadership and professional governance helped mitigate some of the external threats including the union issues and the demands of the role in terms of scheduling and salaries.

Manager to Staff Ratio

In non-healthcare industries, an average SOC for a manager is nine direct reports (The Advisory Board Company, 2015). In healthcare organizations it is not unusual for nursing unit managers to have spans of up to 200 staff. In an assessment of the current manager to staff ratio for the nursing department, the SOC was as large as one manager to 138 direct reports. With the assistance of nursing finance department, pilot unit needs were determined from the current SOC

ratios with the established nursing department goal of achieving optimal SOC ratio of one

manager to 30 direct reports. Although literature suggests that there is no magic ratio for the

number of staff assigned to a manager, the senior nursing leadership determined that a 1:30 ratio

would appropriately cover staff support for both day, night, and weekend shifts (Figure 1). An

assessment and projections of the pilot unit specific manager to staff ratio is outlined in Figure 2.

Figure 1

Manager to Staff Ratio for Inpatient Units

# staff	# Educator	# ANII	# UD	Total Leaders	# Leader Goal (based on 1 to 30)	Leader Shortage/Overage (based on 1 to 30)	CNM NEEDS
75	1	1	1	2.0	2.5	(0.5)	1.0
84	0	1	1	2.0	2.8	(0.8)	1.0
72	0	1	1	2.0	2.4	(0.4)	1.0
73	0	1	1	2.0	2.4	(0.4)	1.0
67	0	1	1	2.0	2.2	(0.2)	1.0
57	1	0	1	1.0	1.9	(0.9)	1.0
103	0	1	1	2.0	3.4	(1.4)	1.0
138	0	2	1	3.0	4.6	(1.6)	2.0
126	0	2	1	3.0	4.2	(1.2)	1.0
78	0	1	1	2.0	2.6	(0.6)	1.0
44	0	1	1	2.0	1.5	0.5	1.0
						(8.1)	**12.0**

Figure 2

*Pilot Unit Manager to Staff Ratio Projection*

Unit	# staff	# Educator	# ANII	# UD	Total Leaders	# Leader Goal (based on 1 to 30 span)	Leader Shortage/Overage (based on 1 to 30)	CNM NEEDS
Pilot	84	0	1	1	2.0	2.8	(0.8)	1.0
								1.0

Nurse Engagement

Fifty-seven RNs from the pilot unit were eligible to participate in the 2019 Press Ganey Nurse Engagement survey and 50 (88%) completed the survey. The March 2019 survey results in the leadership domain are reported in Figure 3 below. The pilot unit did not outperform national benchmarks of similar academic medical centers in three out of four items from the leadership domain and are colored red on the figure below (Figure 3). Press Ganey Nurse Engagement survey results of the leadership access and responsiveness domain from the past 2 years (2018 and 2019) did not outperform national benchmarks compared to the unit performance in 2016 (see Appendix E). In 2014, the UD retired and the assistant manager became interim UD without additional managerial support. In 2016, a new UD was in place and initial staff response was positive as reflected in improved leadership domain performance. However, this performance was not sustained. The assistant manager on this unit had a blended role having to do Charge Nurse shifts, lunch break coverage, education, and administrative tasks and responsibilities. The leadership domain results suggest that there is opportunity to improve leader access and responsiveness for this pilot unit.

Figure 3

Press Ganey Nurse Engagement Survey Leadership Domain Results
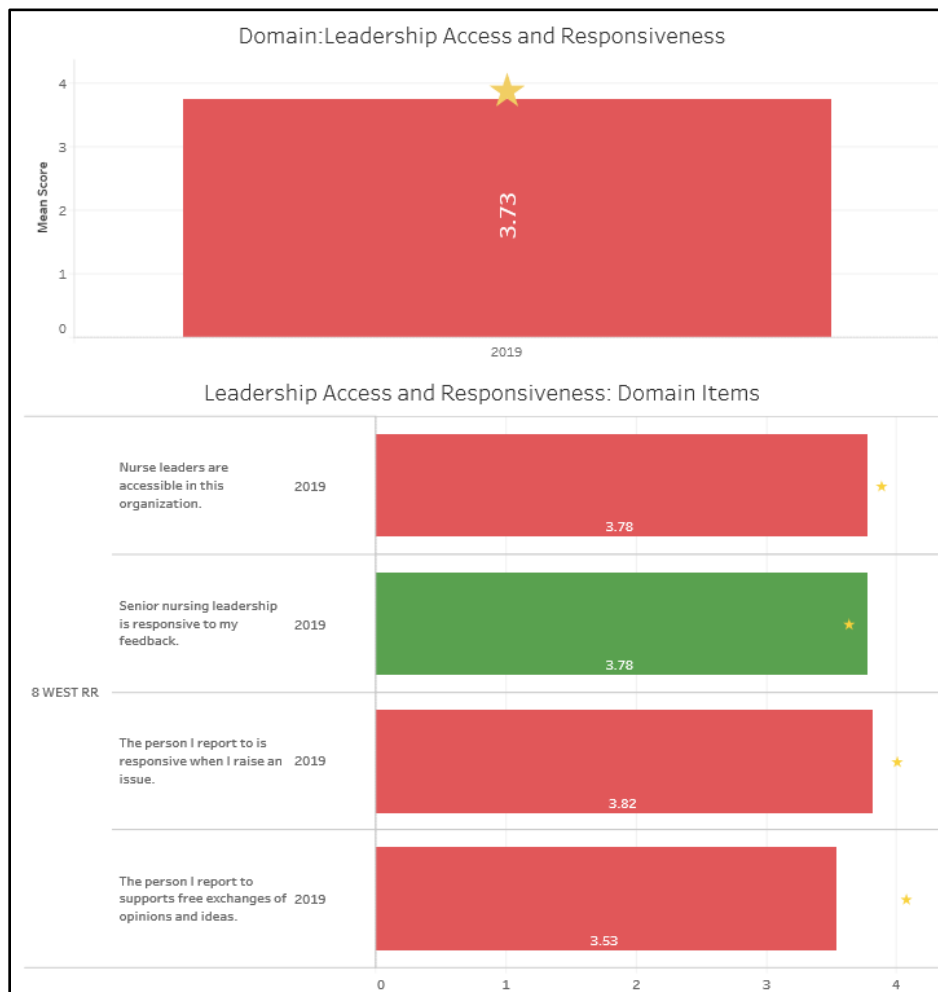
Patient Satisfaction

Pilot unit patient satisfaction scores from communication with nurse's domain were

assessed in Quarter 3 of year 2018 and again in Quarter 4 of year 2019 (see Figure 4). In the 3rd

quarter of 2018, the pilot unit did not meet hospital threshold in 3 out of 4 domains. In quarter 4,

2019, the pilot unit did not meet thresholds in all four domains of communication with nurses. In

quarter 3, 2018, "overall communication with nurses" decreased from 42nd percentile to 17th

percentile in quarter 4 of 2019. "Nurses explaining in a way you understand" decreased from 87th

percentile to 33rd percentile in quarter 4, 2019. "Nurses listen carefully to you" decreased from 27th percentile to 5th percentile in quarter 4 2019. Lastly, "nurses treat you with courtesy and respect" increased from 24th percentile to 34th percentile in the same periods, however, despite the increase in percentile it was still below thresholds.

Figure 4

HCAHPS Patient Satisfaction Survey Nurse Communication Results
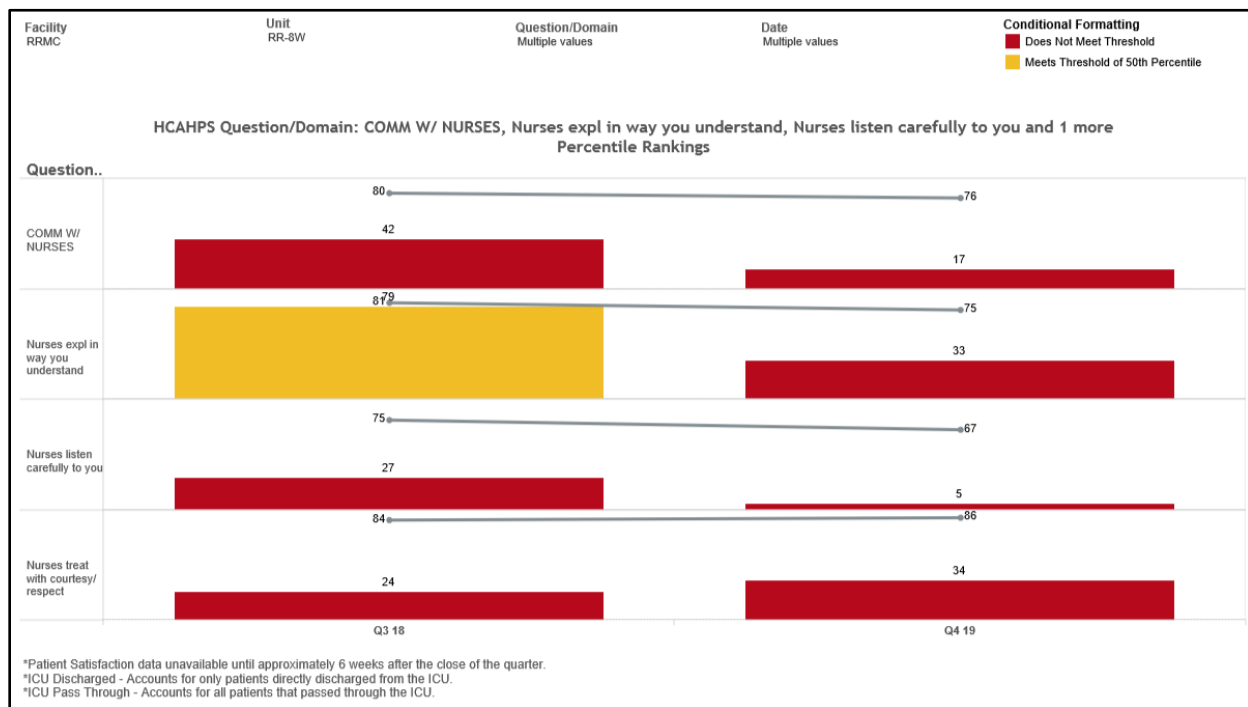
Unit Staff SOS Satisfaction

A total of 10 out of 13 invited survey participants who were part of the pilot unit UPC, answered the pre-intervention unit-based SOS survey administered through Qualtrics® platform. SOS unit survey participant's years as a nurse ranged from 1.5 to 32 years with 90% of staff having a baccalaureate degree in nursing. Forty percent (40%) of the RN participants were nationally certified. Eighty percent (80%) of staff worked primarily on day shift and worked a minimum of four weekend shifts a month.

Despite 80% staff satisfaction with unit leader's response to work related issues, the

majority of respondents agreed that additional support would improve response times to work

related issues and improve performance in nurse sensitive indicators (see Table 2). There was a

total of three staff comments from survey. Two out of three comments emphasized the need for

night shift manager support and availability. The third comment suggested the need for a nurse

educator.

Nurse Sensitive Indicators

An additional component of the project needs assessment included compiling baseline

nurse sensitive indicators that could be used to determine the current clinical outcomes of the

pilot unit and for evaluation of SOS changes. Nurse sensitive indicators utilized for baseline

performance of the pilot unit include nurse sensitive indicators such as Patient Falls (Figure 5)

CLABSI (Figure 6) and CAUTI (Figure 7). The unit's current nurse sensitive indicator

performance show that there is opportunity for improvement to meet a goal of zero patient harm.

Figure 5

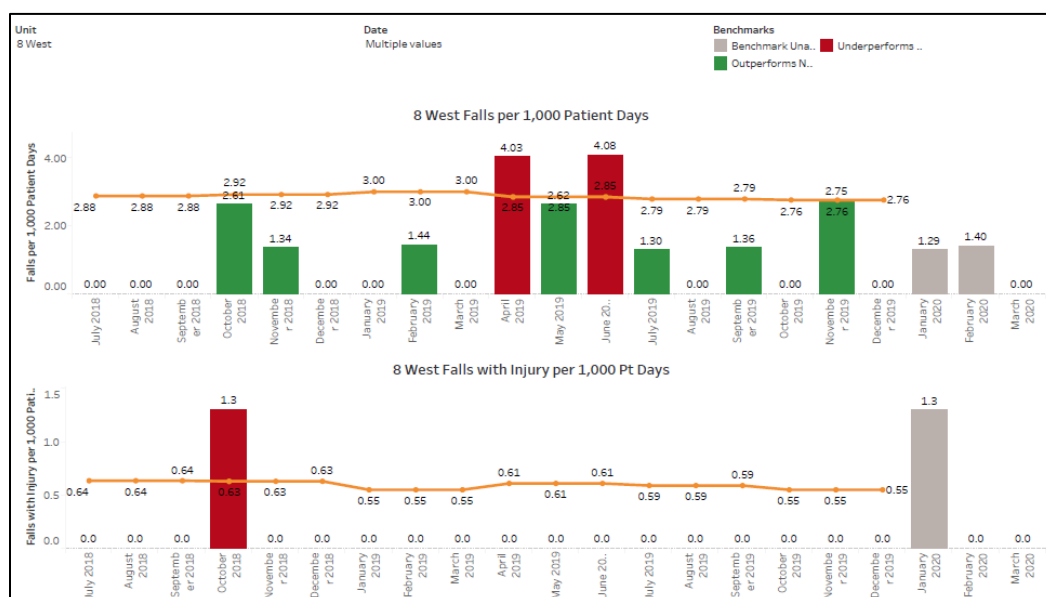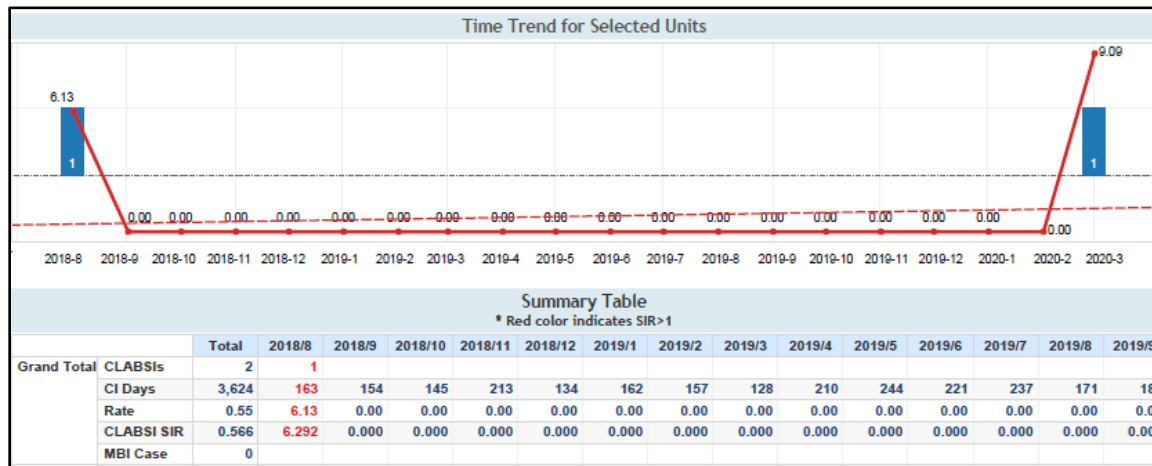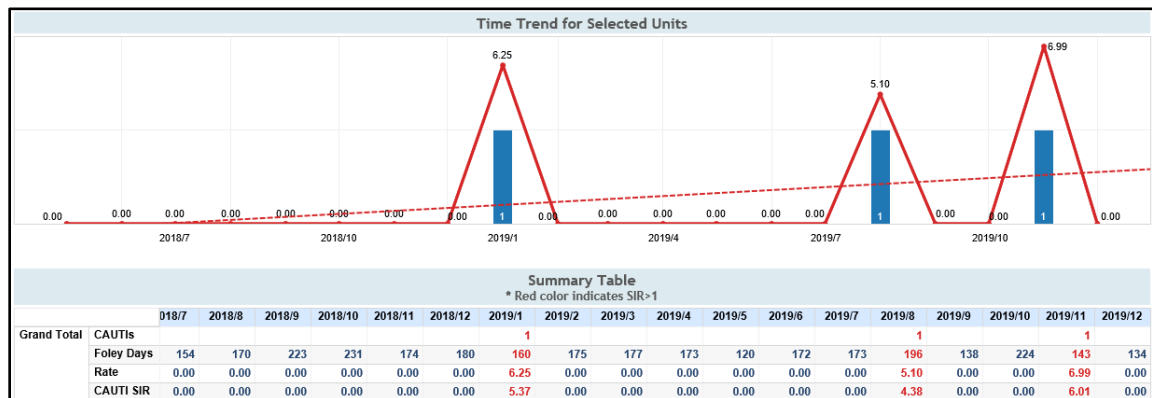*Patient Falls Rates per 1,000 Patient Days*

Figure 6

CLABSI Rate

	Total	2018/8	2018/9	2018/10	2018/11	2018/12	2019/1	2019/2	2019/3	2019/4	2019/5	2019/6	2019/7	2019/8	2019/9
Grand Total CLABSIs	2	1													
CI Days	3,624	163	154	145	213	134	162	157	128	210	244	221	237	171	18
Rate	0.55	6.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
CLABSI SIR	0.566	6.292	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
MBI Case	0														

Figure 7

CAUTI Rate

	018/7	2018/8	2018/9	2018/10	2018/11	2018/12	2019/1	2019/2	2019/3	2019/4	2019/5	2019/6	2019/7	2019/8	2019/9	2019/10	2019/11	2019/12
Grand Total CAUTIs														1			1	
Foley Days	154	170	223	231	174	180	160	175	177	173	120	172	173	196	138	224	143	134
Rate	0.00	0.00	0.00	0.00	0.00	0.00	6.25	0.00	0.00	0.00	0.00	0.00	0.00	5.10	0.00	0.00	6.99	0.00
CAUTI SIR	0.00	0.00	0.00	0.00	0.00	0.00	5.37	0.00	0.00	0.00	0.00	0.00	0.00	4.38	0.00	0.00	6.01	0.00

Recommended Redesign

Based on the results of the needs assessment, literature review, and collaborative leadership discussion of SWOT and gap analysis, the nursing leadership team developed a template for implementation of a redesigned nursing leadership model and associated workflows. The assessment, completed over eight months, was comprehensive and included the examination

of best evidence, collaborative analysis and planning by leadership groups, and bedside nurses

perspectives (refer to Appendix C).

Leadership structure design

To determine changes required improving SOS, workgroups from both nursing

leadership and clinical staff were developed. The first group involved in the development of the

new leadership design was the Chief Nurse Executive Council (CNEC) composed of senior

nursing leadership and the second group was the CNM workgroup composed of unit leaders and

clinical staff. A series of retreats were conducted with members of the CNEC group over the

course of 6 months. In deciding on the new leadership structure design to improve SOS, current

nursing leadership roles were reviewed, an assessment of administrative needs was completed,

an ideal manager to staff ratio was determined, and 24/7 manager availability was determined.

An innovative leadership structure redesign was finalized for implementation on the pilot

unit. The current state of unit leadership as outlined in an organizational chart (see Appendix G)

had a UD and one assistant manager whose role was a blend of administrative and clinical

activities and worked a day shift schedule. This structure did not have enough managers to

provide clinical and administrative support to nursing staff on nights, weekends, and holidays.

The new unit leadership redesign would add another nurse manager, which would help improve

SOS and provide more access to leadership on nights, weekends, and holiday shifts.

Administrative clerical support was added and a distinct education, clinical specialist, and

professional development support structure is clearly delineated to prevent role blending and

confusion (Appendix H).

New manager position

A consistent organizational management structure among nursing units has contributed to role confusion and role blending for directors, managers, educators, and clinical nurse specialists. Based on the needs assessment and ideal state for new nursing leadership structure, the decision was made to create a new position that would replace the current assistant manager position. The opportunity to have a new manager role that mirrors elements of the American Association of Colleges of Nursing (AACN) (2013) Clinical Nurse Leader (CNL) role was needed to better support clinical operations and care coordination. The dimensions of the CNL role include being able to understand the intertwining of the complexity of care, evidenced based practice, and healthcare delivery (AACN 2013). Clinical nurse leaders are not only expected to have clinical skills but to be effective communicators, knowledgeable in conflict management and facilitate interprofessional collaboration (Gabuat, Hilton, Kinnaird, & Sherman, 2008). The new CNM position created to implement with the redesigned leadership infrastructure models the AACN CNL role. Delineating standard work and expectations of new CNMs was aimed to decrease role confusion and role bending.

To develop the ideal role and responsibilities for the new CNM a workgroup was formed that included all levels of nursing leadership. The workgroup reviewed literature on the AACN (2013) CNL role to help develop the new CNM role and responsibilities. Deliverables included a job description (JD), role standard work, role expectations, and hours of availability, orientation needs and identification of professional role development needs. Communication strategies and education material were developed for both nursing leadership and staff. Leadership from the organization's Center for Nursing Excellence helped develop a CNM orientation, competency validation checklist, and a professional development fellowship. Plans to administer a CNM

competency assessment were established to individualize the new CNMs professional

development and as a means to measure professional improvement post 12-month fellowship.

The proposed CNM position was submitted to the nursing executive leadership for initial

review and approval. Thereafter it was presented to UDs, assistant managers, educators, clinical

nurse specialists, charge nurses, and staff nurses via the nursing professional governance

structure for feedback and input. A comprehensive plan was developed and used to introduce the

change in unit leadership structure and the new CNM positon designed to improve SOS, utilizing

Lewin's change model to guide the process.

Supporting Infrastructure

Job Description

After senior nursing leadership final approval, the new CNM JD was submitted to Human

Resources (HR) for market assessment and evaluation to assess completeness and analysis for

the assignment of a market value pay grade. The process with HR underwent multiple steps and

revisions due to the implementation of a new human resource system which led to delays in the

implementation of the new CNM position. The professional role summary of the new CNM

position is in Appendix I.

Leader Standard Work

To better understand the responsibilities and expectations of the CNM in relation to other

unit nursing leadership roles, the workgroup developed standard work guidelines for all nursing

leadership positions. Developing standard work was necessary to prevent duplication of work

and decrease role confusion that existed with current nursing UDs, assistant managers, and

educators. The standard work guidelines were cross-referenced when developing the CNM

orientation and initial competency validation checklists.

Professional Development

The supporting infrastructure includes and CNM transitional support. As the literature recommends, constant communication between unit leadership and staff for feedback to ensure continual improvement of the new SOS design and CNM position. Support and mentoring for new CNMs and their direct supervisors is important to ensure a successful transition to the role and normalizing this new position on the unit. Orientation of the new CNMs will primarily be the responsibility of the UD. For specialty areas, the CNM will meet with senior nursing director of those areas for a more comprehensive orientation to the specialty area. If assigned to off-shifts, the CNM will gradually transition hours when orientation is completed. Hours and days of work schedules will vary depending on unit and staff needs, which will include nights, weekends, and holidays.

To ensure clinical preparedness, the new CNMs will participate in initial clinical validation sessions and a population specific competency validation. Additionally, a yearlong professional development fellowship has been developed to support the CNMs in this new role), to help increase manager satisfaction, decrease burnout, and better prepare the CNM for the role (Simpson, Dearmon, & Graves (2017).The redesign included the addition of administrative clerical support for the pilot unit to alleviate the CNMs from having to complete tasks that would take them away from providing staff with critical clinical support.

A professional development fellowship for CNS will include separate evaluations of each participant utilizing American Organization of Nursing Leadership (AONL) leadership assessment tool before and after the start of the fellowship. Additionally, the new CNMs will be assigned a nurse leader mentor, who is not a direct supervisor.

Chapter 5 Discussion and Future Plans

Over the course of project development, planning, and leadership structure redesign,

several challenges and opportunities were identified. The role of a Doctor of Nursing Practice

(DNP) leader and plans for the third stage of the project are outlined and discussed.

Challenges/Barriers

There were both internal and external barriers throughout the development of the new

leadership structure design and development on the new CNM position. During the second stage

of the project, which aligns with Lewin's transitioning stage, the initial development of new

CNM position and JD was delayed due to the organizational implementation of a new job

classification system. The new career track system changed all nursing job titles and role

descriptions. To align the new CNM position with this new platform, the JD had to be revised,

however no existing job class aligned with the CNM role. Multiple negotiations with HR that

took place over a period of two months resulted in the final placement of the positon within the

appropriate classification.

Lewin's transitional stage also emphasized the importance of engaging stakeholders in

the process (Shirey, 2013). Early communications on the proposed change to the leadership

structure and management roles met resistance from staff, leading to another challenge for the

organization. This initial reaction by both staff and nurse managers caused senior leadership to

redesign the communication plan to include additional meetings where staff could express

concerns, ask questions about the proposed changes, and provide input on the changes. This

strategy extended the initial timeline but was crucial for better understanding of the evidence and

goals for the change to help with the adoption of the change.

A major external barrier to implementing the last phase of the quality improvement project was the academic medical centers urgent response to the COVID-19 global pandemic. In March 2020, the organizational response to the pandemic resulted in the halt of normal hospital operations including work stoppages and freezing of normal HR operations. This led to a halt in the onboarding of the new CNMs and delayed the project implementation. As the organization returns to normal operations in the coming months, the last phase of the intervention will resume.

Future Plans

The intervention of adding CNMs to the pilot unit is expected to occur at the end of June 2020. The same Press Ganey Nurse Engagement Survey tool should be utilized for the post intervention assessment of the influence of the improved SOS, 12 months after implementation. Due to anonymity of the survey, pre- and post-participants ratings will not be available to compare individually in post intervention measurements, meaning there will not be an analysis of individual differences in scores. Similarly, the Qualtrics® based SOS unit survey should be re-administered after a unit-based group session 12 months post leadership structure change.

Nurse sensitive indicators should be monitored monthly and re-evaluated 12 months post leadership structure redesign implementation to determine if there are any significant changes in clinical outcomes. Furthermore, HCAHPS patient satisfaction scores from the nurse communication domain should be compared to baseline performance established for this quality improvement project.

Role of DNP in Redesign

Guided by the AACNs (2006) eight essentials of DNP practice, a DNP prepared nurse is positioned to successfully lead and evaluate evidence based quality improvement projects such as this SOS redesign. This work must be done collaboratively with nursing leadership and

stakeholders for successful process change. Continued oversight of project implementation, checkpoints, and evaluation is needed to assure goal attainment. A DNP prepared leader has the knowledge and tools to evaluate outcomes and make changes to processes and structures as needed based on evidence and organizational resources.

Conclusion

An extraordinary level of preparation using Lewin's model sets up the new leadership design, new position, and workflow changes for successful implementation. Successful implementation of a nursing SOS redesign strategy is anticipated to positively influence staff engagement, and quality of clinical care for the organization. Nurse managers play a key role in maintaining a work environment to achieve optimal patient outcomes. Redesigning leadership support structure and ensuring the manager has appropriate training and resources will help achieve the desired organizational outcomes. This quality improvement project will be an important gauge for the future of nursing unit leadership for the organization. Sustaining nurse manager and staff relations through an improved SOS, that allows more leadership access and responsiveness, will positively influence work engagement, patient satisfaction, and clinical outcomes.

Table 1

Table of Evidence (TOE)

Author, Year	Purpose	Sample & Setting	Methods Design Interventions Measures	Results	Discussion, Interpretation, Limitation of Findings

Cathcart, D., Jeska, S., Karnas, J., Miller, S.E., Pechacek, J., & Rheault, L. (2004). Span of control matters. *Journal of Nursing Administration (JONA), 34*(9), 395-399.	• To study relationship between SOC and employee engagement
	• To demonstrate that increasing SOC to decrease costs has adverse effects
		• Large integrated Midwest health system
		• Wide ranges of SOC, from <15 to >80 employees
		• 13% of managers had more than 40 direct reports
		• 4 patient care units participating in study had from 98 up to 114 direct reports
			• Relationship between SOC and employee engagement measured by average of 12 Gallup employee engagement questions using 5 point Likert scale
			• Analyses conducted to assess group size and engagement scores:
			   <15 employees = engagement score 3.84
			   16-40 employees = 3.61
			   41-80 employees = 3.42
			   >80 employees = 3.29
			• Employee demographic variables (tenure,
				• 30% to50% reduction in the 4 managers SOC
				• Positive change in employee engagement mean score was observed in the survey results the following year
				• Unit A (n=98) mean engagement scores increased from 3.15 to 3.37
				• Unit B (n=90) mean engagement scores increased from 3.08 to 3.52
				• Unit C (n=167) mean engagement scores increased from 2.70 to 3.06
				• Unit D (n=114) mean engagement scores increased from 3.48 to 3.60
					Discussion:
					• Study demonstrated direct relationship between employee engagement and SOC
					• Study helped provide common definition of SOC
					• Information allowed for re-organization to address SOC
					Limitations
					• Small sample size of 4 units
					• Short implementation period cannot quantify longitudinal effects of NM SOC
					Implications:
					• Span of control results presented to leadership lead to re-assessment of organizational structure to consider more appropriate SOC
					• Particular attention to units with largest spans of control
					Conclusion:
					• Quantitative effects of SOC not yet realized
					• Increase in awareness of SOC and effects of increasing SOC on employee engagement
					• Health system discovered SOC does matter

			work status, contract status, job type) were explored to determine relationship between SOC and engagement • Comparison of mean engagement scores before and after controlling for demographics was performed and found similar relationship • Discriminate analysis applied to data to identify items from survey that differentiated groups • Work groups of 15 or fewer employees engagement influenced if employee felt their opinions counted in the workplace • Groups more than 15 employees, engagement most affected by whether someone at work encouraged their development		

Doran, D., McCutcheon, A.S., Evans, M.G., MacMillan, K., Hall, L.M., Pringle, D., Smith, S., & Valente, A. (2004). *Impact of the manager's span of control on leadership and performance.* Retrieved from Canadian Health Services Research Foundation (CHSRF) website: http://www.chrsf.ca	• To examine relationship between leadership, SOC, and nurse satisfaction, patient satisfaction, and unit outcomes	• Seven teaching and community hospitals with similar organizational structure
		• 51 units total
		• 41 nurse managers on medical, surgical, obstetrics, and day surgery unit
		• 680 patients, going home in next 24 hours and 18 years or older, able to read and write English
		• 717 staff nurses, full-time, part-time, or casual
		• Target sample size was 10 nurses and 10 patients per participating unit
		• 6 month data collection April to September 2002
			• Study used descriptive correlation design using survey methods for individual and unit data
			• Theoretical framework developed from leadership styles, SOC theory, and leadership theory
			• IRB approved Nurse manager questionnaires given to participants:
			  - Modified Multifactor Leadership Questionnaire
			  - McCloskey Mueller Satisfaction Scale
			  - Nurse Demographic Questionnaire
			• Participants consented and informed of risk and benefits
			• SOC measured by total number of direct reports
			• Patient satisfaction measured from
				• Large SOC mean=81, range of 36-258 (n=41)
				• Nurse job satisfaction mean=3.2, range of 1.06-4.94 (n=717)
				• Patient satisfaction mean=2.16, range of 1-5 (n=680)
				• Unit turnover rate mean = .18, range .10-.63 (n=51)
				• Transformational and transactional leadership styles had positive effect on nurse job satisfaction and patient satisfaction
				• Wide SOC decreases the positive effect of both transactional and transformational leadership styles on nurses job satisfaction
				• Wide SOC decreased patient satisfaction
				• Wide SOC was not found to be a predictor of nurses job satisfaction
				• SOC increases turnover
					Discussion:
					Leadership and Outcomes
					• Transformational was significant predictor to nurse job satisfaction
					• Transactional leadership significant predictor to patient satisfaction
					• Management by exception had negative effect on staff but not on patients
					SOC and Outcomes
					• SOC has moderating influence on job satisfaction but significant effect on patient satisfaction and unit turnover
					SOC, Leadership and Outcomes:
					• As work unit size increases, manager and staff become less positive
					• Less timely communication with large SOC
					Confounding Variables:
					• No link between nurse job satisfaction and demographic variables
					• Manager unit experience decreased unit turnover
					• Patient satisfaction increased for managers supervising different staff categories
					• Patient satisfaction decreased with long tenured nurses, staff resources not reporting to manager, short stay units, unit unpredictability
					Implications:
					• First study to theorize SOC as moderating variable relationship between leadership and outcomes
					• Theoretical model links effects of leadership style and SOC on outcomes

			• section of Patient Judgements of Hospital Quality Questionnaire that used Likert scale • Unit turnover measured by percentage of nurse who left position during one year period (Jan 2001-Dec 2001) • Data analysis in consultation with Statistical Consulting Services • Study hypotheses tested using hierarchal linear model • Regression analysis conducted on SOC		• No firm guidelines on size of SOC, however study shows that 1.6% turnover rate for every increase of 10 staff Conclusions: • Empirical evidence demonstrating relationship between leadership and patient satisfaction • Wider SOC related to higher turnover rate and lower patient satisfaction • No leadership style can overcome a large SOC • Moderating effects of SOC on relationship between leadership styles and nurse job satisfaction and patient satisfaction Recommendations: • For practice, organizations needs to develop effective leaders with facilitative leadership styles • Develop guidelines on the leader to staff ratio because no leadership style can overcome large SOC • For future research, relationships between SOC, leadership and outcomes that are patient-specific
Meyer, R.M., O-Brien-Pallas, L., Doran, D., Streiner, D., Ferguson-Pare, M., & Duffield, C. (2011). Front-line managers as boundary spanners: effects of span and time on nurse supervision	• To examine the influence of NM SOC, time in staff contact, leadership style, and accessibility on nurse satisfaction	• Large urban hospital in Ontario, Canada selected through purposive sampling (3 academic hospitals and 1 academic-	• Descriptive, correlational design used for survey collection, work log, and survey data • Cross-sectional survey data collected for leadership practices	• Average span 86.6 was slightly higher than other Ontario means of 77, 77.5 and 70 • Spans ranged from 29.0 to 174.3 direct reports • 1/3 of managers responsible for 90 or more staff • Daily time in staff contact averaged 3.2 hours, higher	Discussion: • Study partially supports span and leadership association with nurse satisfaction • Results indicated time is another type of boundary spanned by managers • Capacity of managers to influence nurse supervision satisfaction varied relative to operational hours Limitations:

satisfaction. *Journal of Nursing Management, 19*, 611-622. doi:10.1111/j.1365-2834.2011.01260.x	• To assess SOC, leadership, and other variables on nurse satisfaction and manager supervision	affiliated community hospital) • Convenience sample of 558 nurses in 51 clinical areas • 31 front-line acute care hospital managers in 2007-2008 • Inclusion criteria included being in current position at least 3 months	managerial job characteristics, and nurse supervision satisfaction • Longitudinal data collected for direct reports, time in staff contact, and worked hours • Demographics and job characteristics of manager collected through survey • Time in staff contact and worked hours was self-reported • Written consent was obtained • HR provided span data • Statistical analyses was conducted using SPSS • Descriptive statistics used for variables and outliers was corrected • Testing of main effects of predictors on outcomes performed	than 2 hours from Swedish managers • On average, staff nurses rated satisfaction with supervision above midpoint of scale, mean = 3.82, SD = 0.8 • Intra-class correlation co-efficient indicated 18% variance in nurse supervision satisfaction • Managers assigned extended operational hours were more satisfied (3.91 vs 3.67) under transformational leadership (at 1 SD above mean, leadership =8.6) in combination with a wider span (at 1 SD above mean, span=115.5)	• Cross sectional study design limits claims of cause and effect • Years of experience, education did not explain difference in satisfaction levels • Potential bias of self-reported measures Implications: • For nursing management, organizations should invest in leadership development for transformational leadership because it positively influences satisfaction • Span and leadership cannot be considered in isolation, operational hours need to factored in • Co-manager models should be considered when compressed hours are combined with wide spans Conclusion: • Compressed operational hours = lower satisfaction with highly transformational leaders in combination with wider spans • Extended operational hours = higher satisfaction with transformational leader with wide spans • Operational hours influence manager's daily span should be factored into the design of front-line management positions • Front-line managers are critical to retention and supervision of human resources

| Simpson, B.B., Dearmon, V., & Graves, R. (2017). Mitigating the impact of nurse manager large spans of control. *Nursing Administration Quarterly, 41*(2), 178-186. doi: 10.1097/NAQ.0000000000000214 | • To evaluate nurse managers SOC using evidenced-based measurement instrument
• To evaluate the effectiveness of providing nurse manager's with the largest SOC with additional non-clinical administrative support and transformation-al leadership development | • 447 bed non-profit Magnet hospital in urban city
• 16 nurse managers within organization assessed with Ottawa – TOH
• Average age of NM was 42.6
• Years of experience as an RB averaged 18.6
• Years in nursing
• Nurse managers have 24 hour accountability and responsibility for 1 or more cost centers
• Nurse vacancy rate 15% increase from 7% previous year
• Patient satisfaction slipped to 48th percentile
• Decline in nurse | • NM SOC measured using Ottawa TOH tool
• Tool measured unit, staff and program variables
• Unit focused indicators included hours of operation, unpredictability, high patient turnover, risk of litigation, incidents
• Staff focused indicators included staff volume, absenteeism, diversity, skill, autonomy, and stability
• Program focused indicators included diversity, budget, and support
• SOC data for cost centers collected and evaluated by team
• Results were disseminated to shared governance
• Results were used to strategize decrease in SOC | • Excessive SOC identified
• 8 out of 16 managers had appropriate SOC
• 8 out of 16 had excessive SOC
• LPI internal reliability measured by Cronbach alpha with all scales above the .70 level and validity, is 0.92
• Nurse Manager satisfaction was 4.63 (SD = 0.518) pretest and 5.50 (SD = 0.518) posttest ($t7$ = -2.97; P=.021)
• Nurse manager likeliness to recommend nursing leadership as a career choice to other nurses pretest of 4.5 (SD = 0.535) and posttest 5.38 (SD = 0.518) (t7 = -3.86; P = .006)
• Consideration for leaving due to burnout decreased to 11.1%
• Manager transformational leadership competency
• Overall TL competency increased from pretest 42.91 (SD = 7.655) and on posttest was 49.31(SD = 2.681); (t7 = -2.392; P = .048) | Discussion:
• NM role critical to organizational success
• NM experiencing increased job demands
• Assessing SOC important beyond number of FTEs
• Consideration of manager scope of duties, job complexity
• NM likely to leave when workload is excessive
• Organizational quality metrics are negatively impacted when NMs are assigned large spans of control
• Providing support of AAs decreased the amount of workload tasks by NMs including payroll functions, scheduling, supply management
Limitations:
• Sample size of NMs was small and timeframe for implementation was short
• NM satisfaction tool was not tested for validity and reliability
• Further investigation is needed into SOC mitigation strategies needed based on positive results of initial project
Implications:
• SOC measurement can determine how additional administrative support is budgeted and deployed
• Written standard work process should be created to sustain project efforts
• NM focus groups valuable for re-assessment |

		sensitive performance indicators and nurse satisfaction	• 8 nurse managers were invited to participate in the project • Participation was voluntary • NM satisfaction measured using updated instrument and weighted scale • Adapted 6 point Likert scale measuring RN job satisfaction and anticipated turnover • NM transformational leadership competency assessment and data analysis were performed from software furnished with LPI • LPI tool used to assess TL behaviors		• Leadership competency and development is crucial for NM improvement • Incorporate tenets of transformational leadership into NM orientation Conclusion: • Financial constraints on organizations plays a role in the increase in spans of control • NMs are important to creating a supportive work environment to achieve optimal patient outcomes • Further study is needed on the impact of SOC and strategies to mitigate adverse effects of large SOC
Wong, C.A., Elliott-Miller, P., Laschinger, H., Cuddihy, M., Meyer, R.C., Keatings, M., Burnett, C., Szudy, N. (2015). Examining the	• To examine nurse manager characteristics and SOC in relation to unit performance and manager outcomes	• Convenience sample of 500 nurse managers • Adult acute care, rehabilitation or complex	• Non-experimental predictive survey design to look at front line managers and SOC • Power analysis for appropriate sample size	• The mean TOH score by the manager was 89 (SD = 14.3) out of a possible 137 • Manager TOH Scores: High (91+) - 51% (n = 62) Appropriate (61-90)– 47% (N=57) Low(51-60) = 2% (n=2)	Discussion: • Managerial experience, self-esteem, SOC and resource support affected manager job and unit outcomes Limitations: • The non-random sample and low response rate limits generalizability of study • Potential selection bias

relationships between span of control and manager job and unit performance outcomes. *Journal of Nursing Management*, *23*, 156–168. doi.org/10.1111/jonm.12107	• To determine relationship between manager SOC and turnover, unit frequency of adverse outcomes, job satisfaction, time to facilitate employee engagement	continuing care, pediatric acute care, geriatric care, and mental health units • 14 Canadian academic hospitals • N=121 managers from sample size • Female 92.3% • Mean age 48.9 years • Mean years of manager experience 8.9 • Average # direct reports 77	• Managers participating were sent a confidential PIN # and link to online survey • Work characteristics survey and The Ottawa Hospital (TOH) SOC tool administered to managers • Survey conducted 1-2 weeks apart • May 2010 to March 2011, survey data was collected among the 14 organizations in groups of 3-5 • Unit specific outcomes data collected from individual organizations • Data analysis using Statistical Package for the Social Sciences (version 20.0; SPSS Inc.) • Collected data was reviewed through descriptive statistics, Pearson correlations, analysis of	• Managers with high TOH scores had significantly higher total resource supports ($t_{(119)} = \_2.87$, $P < 0.01$) than managers with scores below 91 (M = 9.36, SD = 8.29 and M = 5.90, SD = 4.24, respectively) • Managers with high TOH scores had significantly higher clinical and charge supports ($t_{(119)} = \_4.19$, $P < 0.001$) than managers with scores below 91 (M = 3.6, SD = 2.3 and M = 1.9, SD = 2.0, respectively) • The TOH scores were significantly ($F_{(3,117)} = 4.33$, $P = 0.006$) higher for managers of: Pediatric acute care (M = 98.0, SD = 10.9) Mental health (M = 81.7, SD = 15.5) Rehabilitation/geriatric (M = 82.0, SD = 11.3) Adult acute care units (M = 90.5, SD = 14.3) • Higher TOH scores higher role overload, lower work control and job satisfaction, and adverse clinical outcomes • Core self-evaluation had strong associations with manager outcomes but not	• Web-based surveys garner 23% lower response then mail surveys • Did not account for organizational level effects on outcomes Implications: • Nursing management needs to look beyond number of direct reports in defining SOC • TOH tool better indicator for span Future Research: • More studies using TOH needed with larger samples • Address complex patient populations and influence of stability and expertise on work span Conclusions: • SOC increased manager overload and unit adverse outcomes • SOC contributed to decreased job satisfaction and work control • Manager core self-evaluation had strong positive effects on job outcomes but no association with adverse outcomes or turnover • TOH Span tool is helpful in assessing resource support needed to mitigate effects of large SOC

			variance, internal consistency reliabilities, linear regression analysis	unit performance and not correlated to TOH score • TOH SOC predicted manager assessed adverse outcomes	

Table 2

Qualtrics® Unit Staff SOS Questionnaire Results

Are your unit manager's available to you when you have work-related issues?	How satisfied are you with your unit manager's response to work-related issues?	How much do you agree or disagree with this statement: Additional unit manager support would improve response to work-related issues.	How much do you agree or disagree with the statement: Additional unit manager support would improve your unit's nurse sensitive quality indicators (ex. Falls, CLABSI, and CAUTI).
Most of the time	Satisfied/Most of the time	Agree	Agree
Most of the time	Satisfied/Most of the time	Agree	Agree
Most of the time	Very satisfied/Always	Strongly Agree	Strongly Agree
Sometimes	Dissatisfied/Seldom	Strongly Agree	Strongly Agree
Always	Satisfied/Most of the time	Strongly Agree	Strongly Agree
Sometimes	Neutral/Sometimes	Agree	Agree
Most of the time	Very satisfied/Always	Strongly Agree	Agree
Always	Very satisfied/Always	Disagree	Neutral
Always	Satisfied/Most of the time	Strongly Agree	Strongly Agree
Always	Satisfied/Most of the time	Agree	Agree

Press Ganey Nurse Engagement Survey Domain and Items

Domain: Leadership Access and Responsiveness
Items:
Nurse leaders are accessible in this organization.
Senior nursing leadership is responsive to my feedback.
The person I report to is responsive when I raise an issue.
The person I report to supports free exchanges of opinions and ideas.

Appendix B

HCAHPS Patient Satisfaction Survey Nursing

Category: Nurse Communication

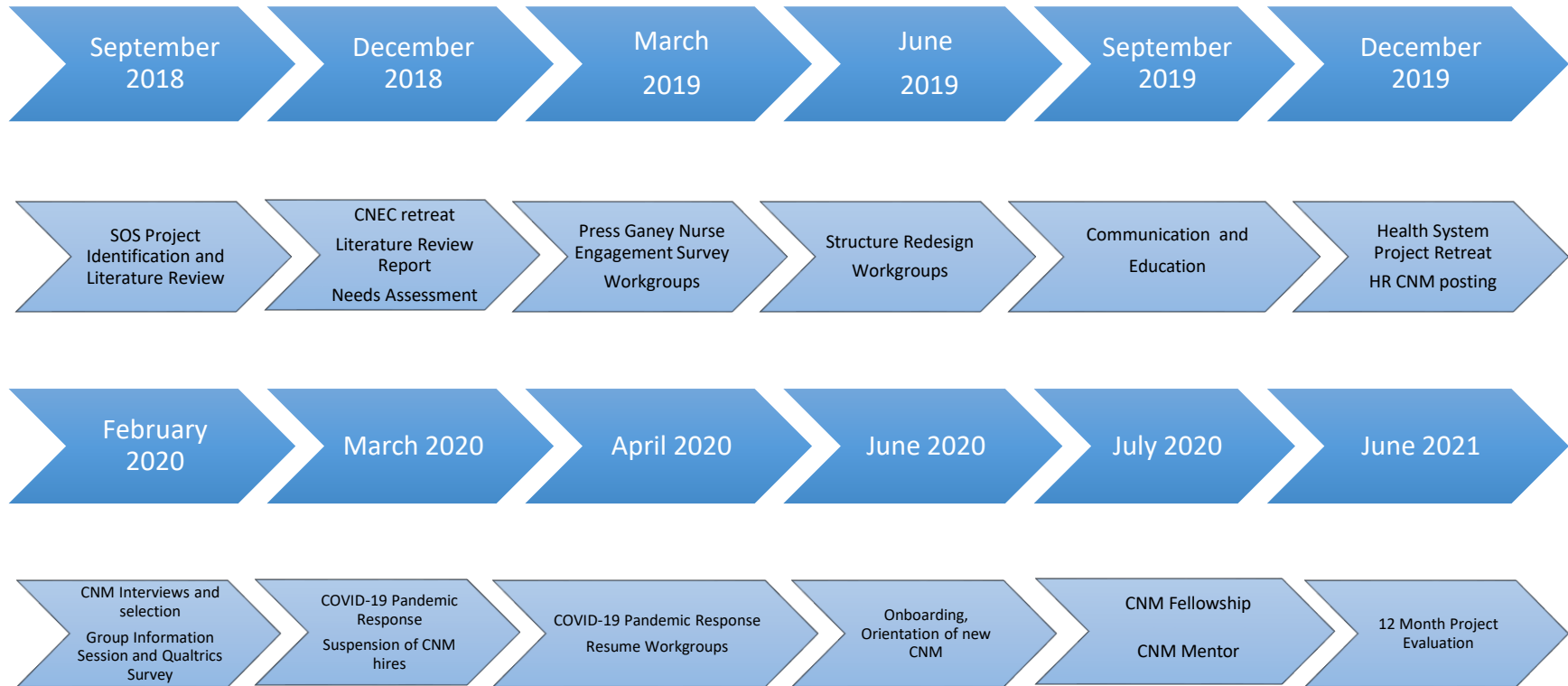
Items:

Communication with nurses

Nurses explained in a way you understand

Nurses listen carefully to you

Nurses treat you with courtesy and respect
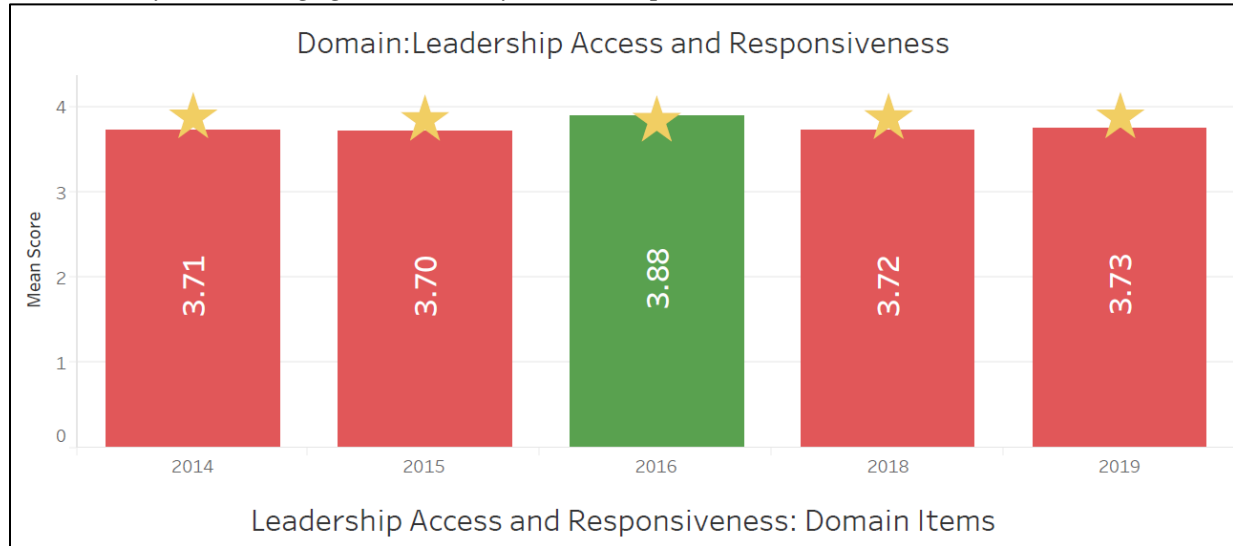

Appendix C

Project Timeline

September 2018	December 2018	March 2019	June 2019	September 2019	December 2019

SOS Project Identification and Literature Review	CNEC retreat Literature Review Report Needs Assessment	Press Ganey Nurse Engagement Survey Workgroups	Structure Redesign Workgroups	Communication and Education	Health System Project Retreat HR CNM posting

February 2020	March 2020	April 2020	June 2020	July 2020	June 2021

CNM Interviews and selection Group Information Session and Qualtrics Survey	COVID-19 Pandemic Response Suspension of CNM hires	COVID-19 Pandemic Response Resume Workgroups	Onboarding, Orientation of new CNM	CNM Fellowship CNM Mentor	12 Month Project Evaluation

Appendix D

SWOT Analysis

Strengths	Weaknesses
• UD, assistant managers, nurse educators and Clinical Nurse Specialists (CNS) to support some units • Adequate senior director level support for unit leaders • Adapting new structure and positions would be FTE Neutral for most units • Pilot unit to learn from • Leadership opportunities for staff •	• Large manager to nurse ratio • No structured leadership development and succession planning • Manager role blending and role confusion • Limited access to managers especially on off-shifts • Off shift, night, weekend hours not attractive to potential managers • Few resources and support at night for staff • Not all nursing units have available FTE for positions needed to restructure • Only one pilot unit will be evaluated • Low nurse engagement scores
Opportunities	**Threats**
• Redesign leadership structure to meet needs of managers and staff • Role clarification and expectations for nursing leadership • Assess all units for implementation • Nurse Manager professional development • Model for other units • Recruitment incentive • Improve patient satisfaction and clinical outcomes • Improve staff support and engagement	• Union labor action • Staff resistance • Salary differentials • Hours of work

Appendix E

Press Ganey Nurse Engagement Survey Leadership Domain Pilot Unit Trended Results

Appendix F

Qualtrics® Span of Support Unit Survey Questions

What Unit do you work on?

   ○ 8 West

   ○ 6 west

   ○ Other _____

Number of Years as a Registered Nurse (RN)

What is your highest degree?

   ○ Associate Degree

   ○ Bachelor's Degree

   ○ Master's Degree

   ○ Doctoral Degree

   ○ Other _____

Do you currently have a nursing certification (ex. CCRN, ACRN, NE-BC)?

   ○ Yes

   ○ No

What shift do you normally work?

   ○ Day

   ○ Night

   ○ Rotate (day and night)

How many weekend shifts do you usually work in a month?

Are your unit manager's available to you when you have work-related issues?

○ Never

○ Seldom

○ Sometimes

○ Most of the time

○ Always

How satisfied are you with your unit manager's response to work-related issues?

○ Very dissatisfied/Never

○ Dissatisfied/Seldom

○ Neutral/Sometimes

○ Satisfied/Most of the time

○ Very satisfied/Always

How much do you agree or disagree with this statement: Additional unit manager support would improve response to work-related issues.

○ Strongly Disagree

○ Disagree

○ Neutral

○ Agree

○ Strongly Agree

How much do you agree or disagree with the statement: Additional unit manager support would improve your unit's nurse sensitive quality indicators (ex. Falls, CLABSI, CAUTI).

○ Strongly Disagree

○ Disagree

○ Neutral

○ Agree

○ Strongly Agree

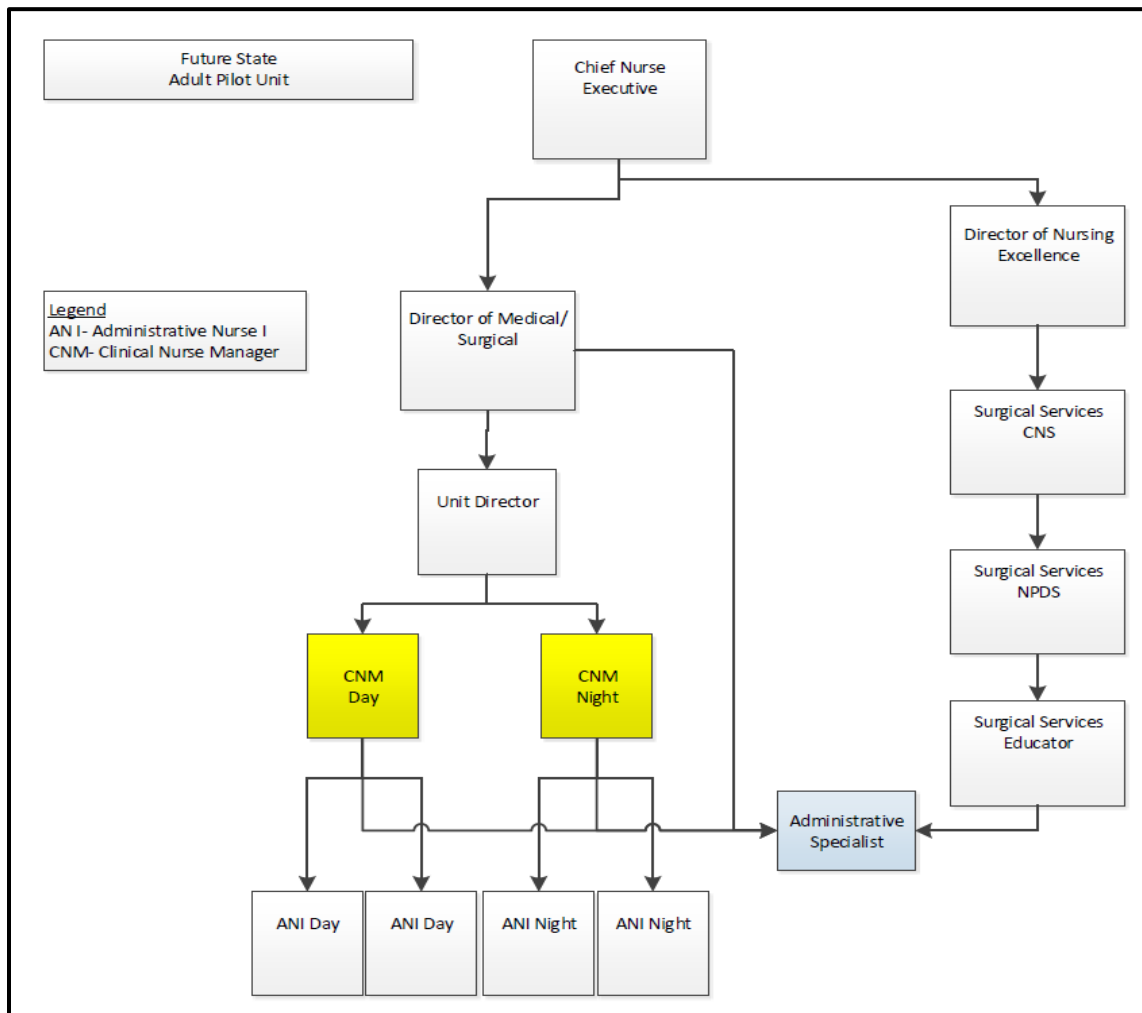Please provide any additional comments on your unit's management support structure.

Appendix G

Current State Nursing Leadership Org Chart
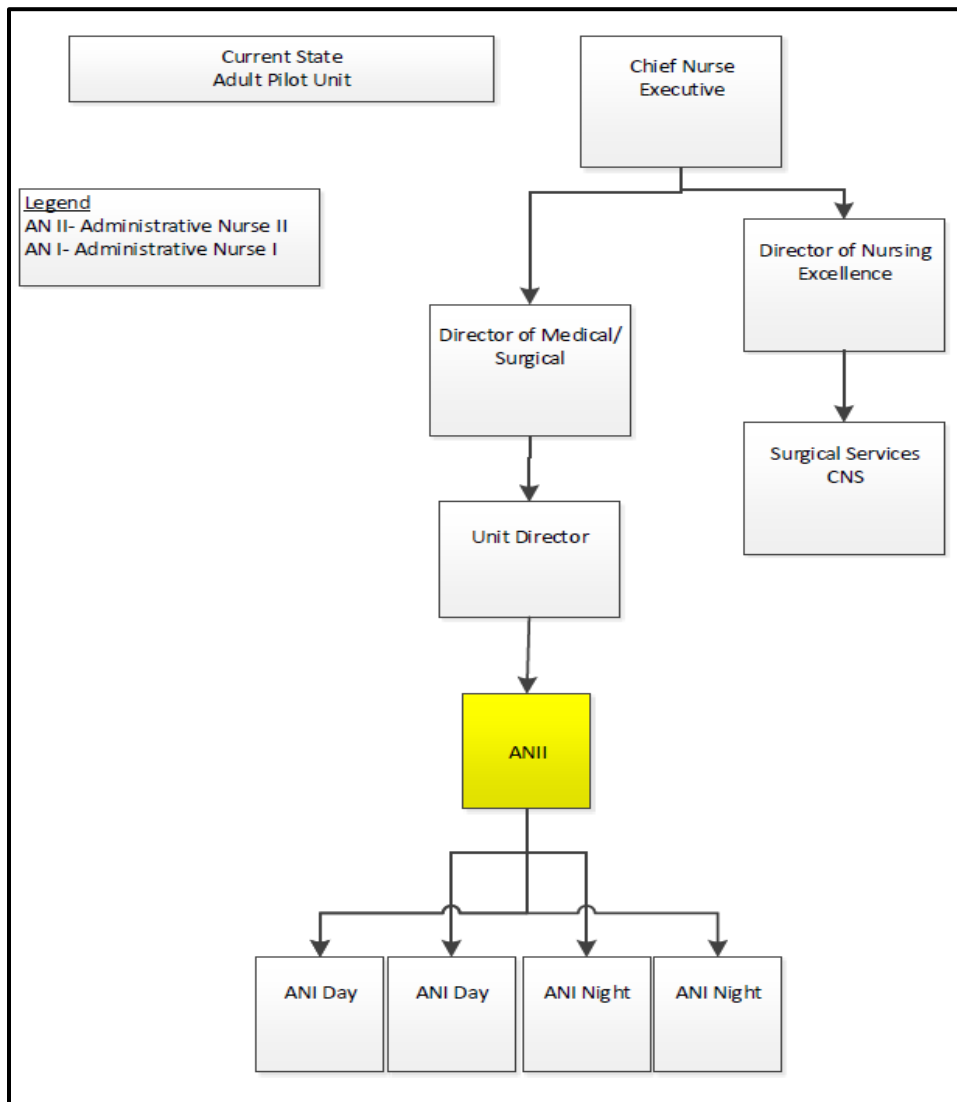
Appendix H

Future State Nursing Leadership Org Chart

Appendix I

CNM Job Description Professional Role Summary

Professional Role Summary: In support of the organization nursing leadership and professional practice, the clinical nurse manager (CNM) serves as:

Leader: The CNM provides leadership in the professional practice setting.

Scientist: The CNM integrates evidence into practice and contributes to new knowledge and innovation.

Transferor of Knowledge: The CNM demonstrates and shares knowledge, skill, attitude, and competency that reflects an expert level of nursing practice.

Practitioner: The CNM develops, maintains, and evaluates an environment that empowers and supports the professional nurse in analysis of assessment data and in decisions to determine relevant problems, diagnoses and interventions.

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