

Intradisciplinary Nursing Communication Post Hospital Merger:
A Quality Improvement Project Using Online Communities of Practice in the ICU

DNP Final Project

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Abstract

After hospital mergers, unit work environments are at risk of being unhealthy due to poor intradisciplinary two-way communication in times of change. This quality improvement project explored the impact a 4-week, social media-based, intradisciplinary communication strategy had on a post-merger ICU work environment. The sample (N = 14) included eleven ICU bedside nurses (78.6%) and three administrative nurses (21.4%) working in a 22 bed southwestern United States medical center ICU. The nurses participated in a *Facebook* closed group community of practice called *N2N*, a total 25.9% participation rate. Eleven nurses completed the pre-*N2N* survey, a 20.4% completion rate, while eight nurses completed the post-*N2N* survey, a 14.8% completion rate. The overall skilled communication score increased to 3.79 after *N2N* completion, a .06 improvement. Question 3, which measured zero tolerance behavior perception, jumped from 3.91 to 4.00 after *N2N*, a 0.9 improvement, boosting this metric to excellent status. *N2N* utilization data revealed 68 comments posted within the four week *N2N* implementation, with 56 showing horizontal communication (73.5%) and 24 displaying vertical communication (26.5%). Of the 68 comments, 12 utilized both horizontal and vertical communication simultaneously (17.6%). Views were plentiful, with a total of 217 ICU bedside nurse views (81.3%) and 50 administrative nurse views (18.7%) noted. The online communication-focused community of practice demonstrated feasibility to enhance communication among bedside and administrative nurses working in an ICU setting. Intradisciplinary communication strategies such as online communities of practice via social media was feasible for enhancing communication among one post-merger ICU work environment.

Keywords: Nursing, communication, online, social media, communities of practice, retention and merger.

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Section One: Nature of the Problem

Communication is vital in all healthcare settings, yet it is most critical in facilities during and after the significant changes a merger produces. According to Morris (2017), the goal of hospital consolidation is to create a successful new entity while preserving the positive characteristics of the previous facilities. To do this, Timmers, Hulstaert & Leenen (2014) contend administrative and bedside nurses must work together to retain nurses by creating a healthy work environment (HWE), especially in high stress intensive care units (ICUs). Morris (2017) states during times of organizational change, retention issues can intensify, related to increased uncertainty and decreased two-way communication.

In 2014, a 177-bed southwestern United States (US) medical center was acquired by a large non-profit hospital system, with many changes post-merger. The medical center's CEO stated nurse retention in the ICU has dwindled since acquisition, decreasing the number of experienced nurses (Personal communication, October 12, 2017). The ICU director agreed, discussing retaining ICU nursing staff is problematic, leading to frequent use of travel and registry nurses, resulting in less engagement of staff (Personal communication, November 8, 2017). ICU nurses discussed lack of consistent communication is a barrier to nurse retention (Personal Communication, October 3, 2017). These statements suggest that lack of two-way interdisciplinary communication impacts the healthy ICU work environment, leading to decreased nurse retention. Retaining seasoned staff within the ICU by achieving a HWE was a compelling reason to examine characteristics of and remedy issues within nurse administrator-bedside nurse communication.

Purpose of the Project

Facilitation of intradisciplinary nursing communication to promote a HWE was the purpose of this Doctor of Nursing Practice (DNP) project. The goal was to create a healthy collaborative work environment by empowering the intradisciplinary nursing team to improve vertical and encourage horizontal communication among all nurses. Within a 22-bed southwestern US ICU, 43 bedside nurses deliver primary care to critically ill patients. Along with four case managers and four ICU nurse managers who work within the ICU, the administrative structure at the facility consists of nurses in the roles of ICU senior manager, ICU director and Chief Nursing Officer (CNO). A four week trial Community of Practice (CoP) was made available to this intradisciplinary team of both bedside and administrative nurses, offering opportunities for education, communication and collaboration. Objectives for this DNP project follow the PDSA framework and included: (a) developing an evidence-based plan to improve intradisciplinary nursing communication, (b) designing and implementing an online, evidence-based communication intervention, (c) measuring and analyzing technology utilization and acceptance outcomes, and (d) revising the communication intervention to encourage ongoing intradisciplinary nursing communication.

Section Two: Review of the Literature

Clinical Practice Problem Statement

The PICOT question utilized for this DNP project was: In ICU bedside nurses, nurse managers and CNOs, (P), will participation in a dedicated online community of practice (CoP) (I), compared to participation in current communication methods (C), affect the post-merger ICU work environment (O) after a 4 week time period (T)?

Evaluation/Summary of the Evidence From the Literature

Search methods. Databases searched via EBSCO host included: (a) Academic Search Complete, (b) CINAHL, (c) Cochrane Database of Systematic Reviews (CDSR), (d) Communication & Mass Media, (e) ERIC, (f) MEDLINE and (g) PsycINFO. Keywords utilized in the literature search included nurse, nursing leaders, communication, online, social media, communities of practice, retention and merger. For the initial advanced search, inclusion criteria required articles be written in English and peer-reviewed. Exclusion criteria included articles older than 2009, with the exception of seminal works and a particularly relevant merger article. The articles retrieved spanned dates from 1994-2018 and those from 1999 and more recent were kept for further examination. While the preferred level of evidence for DNP projects would be systematic reviews or controlled trials with or without randomization, it is reasonable to consider that case-control or cohort studies and systematic reviews of qualitative or descriptive studies may provide valuable information for a communication project with qualitative nuances.

The first search yielded 28 articles, the second produced 21 articles. Of those 49 articles, 33 were considered relevant, addressing mergers, hierarchical communication, healthcare and nursing, warranting further appraisal. Additional snowball and journal searches, utilizing the terms communities of practice, healthy work environment and social media were completed to exhaust the project literature search, yielding another 17 articles. After critical appraisal, 18 most relevant articles spanning 2003-2018 were selected, with 15 of 18 articles within the last 5 years.

Tabular synthesis of evidence. Critical appraisal of articles was conducted to determine the effect of post-merger communication on nurse retention and work environments, as well as to locate evidence-based communication interventions that could improve intradisciplinary

nursing communication. According to Melnyk & Fineout-Overholt, after critical appraisal and selection of evidence-based studies is complete, the evidence should be fused into a framework on which to base practice change (2015). This body of evidence is then the basis for all interventions for the evidence-based project. Evaluation (Tables 1 & 2, Appendix A), levels of evidence synthesis (Tables 3 & 4, Appendix B) and outcomes (Tables 5 & 6, Appendix C) tables were prepared to display the synthesis of the evidence for both articles exploring nursing communication and retention, as well as nursing communication interventions to enhance HWEs.

Critical Appraisal of the Evidence

According to Morris, hospital mergers are a commonplace occurrence in modern healthcare, resulting from “regulatory changes, reimbursement reductions, market leverage, rising information technology costs, and capital equipment needs” (2017, p. 200). Marmenout indicates post-merger hospital employee attitudes are affected by peers focusing on the negative aspects of change as opposed to possible positive outcomes, further proposing a three prong plan focusing on leadership communication (2011). A seminal work by Appelbaum & Gandell (2003) discusses five communication strategies to be implemented following mergers, including organizational observation of workers’ comprehension of change communication and utilization of innovative communication techniques. Bragg & Bonner (2017) posit lack of relational links between hospital administration and bedside nursing staff can support a nurse’s intention to leave.

Nationally, healthcare economist Peter Buerhaus (Larson, 2016) posits discussion between experienced nurses and hospital administration can lead to successful healthcare reform and hospital sustainability. From a community perspective, hospitals with poor published

outcomes may be utilized less, creating a negative effect on the local economy by challenging employee job security. Hospital systems experiencing nurse attrition have increased expense via educating new nurses, litigating inexperienced nurse errors, and incentivizing to recruit experienced nurses. Blake (2015) advocates HWEs are essential to delivering great patient care and keeping experienced nurses at the bedside, positing the importance of creating nursing work areas that utilize cooperative teamwork, thoughtful interaction and free idea exchange.

Fisher, Jabara, Poudrier, Williams, & Wallen (2016) indicate "...a committed team of empowered staff members in tandem with supportive institutional leadership is necessary to lead and sustain change" (p. 16). Removing hierarchical communication barriers including lack of empowerment to voice opinions, poor conflict resolution and minimal inclusion in decision-making must also be included in the intervention plan (Timmers, Puck & Luke, 2014). Also, utilizing technology currently in place in a new way, such as utilizing nurse communication devices to broadcast start of multidisciplinary rounds, is desirable in today's cost-conscious healthcare environment (Wickersham, Johnson, Kamath & Kaboli, 2018). *The evidence suggests communication interventions that are cost effective, easy to use and professionally maintained will satisfy bedside and administrative nurses, thus increasing their utilization and acceptance.*

A large body of evidence concludes nursing communication is integral to maintaining HWEs (Timmers, Puck & Luke, 2014; Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus, 2013; Blake, Leach, Robbins, Pike & Needleman, 2013; Mikkelsen, York & Arritola, 2015; Zurmehly, Martin & Fitzpatrick, 2009; Geertshuis, Morrison, & Cooper-Thomas, 2015; Bragg & Bonner, 2016; Fisher, Jabara, Poudrier, Williams & Wallen, 2016; Morris, 2017). Lara et al. (2017) discuss the positive influence of instantaneous online sharing of content, known as Web 2.0 technologies, on professional communication and knowledge

sharing. Online virtual Communities of Practice (CoPs), which bring professionals with similar interests together, are venues that provide online space for nurses to share ideas and transfer knowledge (Rolls, Hansen, Jackson & Elliott, 2014; Ziebarth & Hunter, 2016; Isaccson & Looman, 2017; Lara et. al, 2017).

Presentation of Theoretical Basis

The Roy Adaptation Model (RAM) (Figure 1, Appendix D) was an appropriate framework for this DNP communication project, as one of its major strengths is considering the various reasons things happen, as well as the multiplicity within each person that can affect situational perspective (Warren, 2017). Communication styles and techniques are as diverse as human personality, and have many influences on the acute care environment as a whole. Bedside ICU nurses possess much communicative variability and desire to be part of decision-making during times of change, as do administrative nurses. Effectiveness of intradisciplinary interaction will only be successful when barriers to communication are recognized and overcome. This aligns closely with experienced clinical perspectives, which suggest change communication must be judiciously disseminated and frequently updated. Social media is a reasonable venue in which to perform these vital communication tasks.

Roy does not allow practitioners to forget that patients, staff, and settings are unique and should be analyzed as such (Warren, 2017). Unique qualities of both administrative and ICU nurses include a need for satisfactory rationale and detailed explanatory communication for change initiatives to be successful and sustainable. Dong, Ainsworth, & Baumeister (2018) posit social capital theory is networking in the most personally beneficial sense. They discuss possessing social capital is more than having contacts, but knowing these colleagues can be of assistance when needed. This encourages human interaction with others as a means to receive

potential support, pushing individuals to maintain these relationships (Dong, Ainsworth, & Baumeister, 2018). “Bridging” social capital, otherwise known as building groups of acquaintances, is a reasonable expectation when using social media for professional communication, because coworkers can transfer knowledge and develop trusting relationships within social media platforms (Dong, Ainsworth, & Baumeister, 2018, p. 370).

The specific evidence-based practice (EBP) framework that was utilized for implementation and dissemination of this project was the Iowa model (Figure 2, Appendix E). Whereas the Roy model guides the specific process of change communication, the Iowa model formulates a set plan for project implementation. The model consists of three “decision points” including topic prioritization, evidence measurement and practice change appropriateness, interspersed with steps of team creation, evidence discovery/critique, practice change development/ implementation, change sustainability evaluation and results dissemination (Iowa Model Collaborative, 2017, p. 178).

The project site’s concentrically designed professional nursing framework is composed of clinical practice contributions to patients, profession and society, each one building upon another (Banner Health, 2018). There are nine components within the professional contribution circle, including collegiality, collaboration and leadership. Utilizing a CoP to enhance and encourage each of these three communication-based components aligns directly with the organization’s nursing theory of practice.

Utility/Feasibility

Creating and implementing a CoP communication intervention via social media is a reasonable intervention within the ICU microsystem. Existing equipment utilization is important for cost neutrality when implementing a new intervention (Wickersham, Johnson, Kamath, &

Kaboli, 2018). Computer access was available to all bedside and administrative nursing staff and current intradisciplinary roles all required computer and internet competency. Additionally, social media applications for smart phones enabled nurses to take the CoP with them wherever they go. Although some facilities block social media venues and restrict phone usage during work hours, these remain available for use within the project site ICU. The largest feasibility of use issue with a social media based CoP is available time to participate for both bedside and administrative nurses. Online offerings planned both asynchronously and synchronously at times conducive to nurse shiftwork enabled staff to take part in CoP activities.

The benefits of a social media based CoP include quick access to clinical knowledge sharing and facility nursing issue information, as well as collaborative support from nurses of all preparations and roles (Rolls, Hansen, Jackson & Elliott, 2016). Also, social media provides a platform for multiple modes of communication, such as video, audio and text, in both synchronous and asynchronous formats, enabling flexibility and availability for nursing staff. Although private social media platforms exist, internet information safety is always a risk, along with lack of direction and strategy with online offerings (Isaacson & Looman, 2017). The biggest risk, however, was lack of participation. Isaacson & Looman (2017) continue, stating creating a strategy such as their 4 prong approach for development and implementation of a CoP is key to its success.

Timeline and Cost Analysis

The implementation timeline included defense of the project proposal completed by November 26, 2018, approved proposal sent to facility research council by November 26, 2018, application for exempt IRB approval filed by December 4, 2018, and IRB approval obtained by December 19, 2018. The DNP student recorded four 15 minute educational videos within the

Ohio State Denney Video Studio by November 1, 2018. CoP educational posters and computer memos were posted (Appendix F), as well as application for CE credit submitted by January 4, 2019. ICU bedside nursing and leadership staff, along with hospital administrative nurses, received an introductory email (Appendix G) including informed consent information, links to a CoP educational video and the AACN HWE survey by January 13, 2019, and required survey completion by January 26, 2019. Responding to the invitation and asking to join the group was considered participant consent. Aggregate data was compiled and analyzed by the AACN and become available to the DNP student immediately after the survey period has passed. Four ICU and one administrative CoP champions were educated face-to-face by January 15, 2019. A 4-week ICU bedside nurse and administrative nurse CoP intervention via an invitation only Facebook group began January 27, 2019. Post intervention AACN HWE surveys were administered via email by February 24, 2019. Aggregate demographic information was obtained from the ICU nurse manager by February 27, 2019. Data analysis and final manuscript composition ensued following survey return, with final project defended March 26, 2019.

Required resources included DNP student time, personal computer and inkjet printer; computers/smart phones (provided per facility/participant); posters (\$5 per poster x 3 = \$15); computer memo cards (\$5 for 20 cards); one hour of paid champion education (\$35-50/hour x 5 = \$175-250); gift cards (\$90). There were no expenses for the use of Facebook, the AACN HWE surveys, Denney Video Studio or for CE credit application. Total expenses for this DNP project = \$185-360, however, the DNP project facility was willing to give in-kind support by allowing staff to attend champion training on work time, decreasing expenses to a negligible amount that was covered by the DNP student. The hospital may recoup their investment many times over, as a major benefit of a supportive communication include increased nurse empowerment and

decreased nurse intention to leave their current position (Zurmehly, Martin & Fitzpatrick, 2009). According to the Nursing Solutions Incorporated (2016), nurse turnover averages \$37,700-58,400 per nurse, costing individual facilities \$5.2-8.1 million every year.

Recommendations Summary

One culprit of nurse attrition post-merger is lack of a HWE (Morris, 2017). Stakeholders, including patients and their families, bedside and administrative nurses, allied staff and physicians, and the facility as a whole require a HWE for safety and job satisfaction. A large body of evidence concludes nursing communication is integral to maintaining HWEs (Timmers, Puck & Luke, 2014; Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus, 2013; Blake, Leach, Robbins, Pike & Needleman, 2013; Mikkelsen, York & Arritola, 2015; Zurmehly, Martin & Fitzpatrick, 2009; Geertshuis, Morrison, & Cooper-Thomas, 2015; Bragg & Bonner, 2016; Fisher, Jabara, Poudrier, Williams & Wallen, 2016; Morris, 2017). Online virtual Communities of Practice (CoPs), which bring professionals with similar interests together, are venues that provide online space for nurses to share ideas and transfer knowledge (Rolls, Hansen, Jackson & Elliott, 2014; Ziebarth & Hunter, 2016; Isaacson & Looman, 2017; Lara et. al, 2017). Use of social media platforms to house CoP was recommended for ease of use and quick access to clinical knowledge and information sharing throughout the discipline (Rolls, Hansen, Jackson & Elliott, 2016). In an effort to enhance intradisciplinary communication within the ICU and achieve a HWE, a CoP called *N2N* was developed and implemented via a private social media platform such as invitation-only, password-protected Facebook secret groups.

Utilizing a 4 prong approach of curating, connecting, collaborating and contributing as a guiding framework, *N2N* assisted with nurse engagement (Isaacson & Looman, 2017).

Additionally, offering CE credit as incentive for participation also boosted use of this new communication tool. Unit champions and the DNP student were available to support those using *N2N*, however, making it a consistently utilized communication tool was a challenge. The biggest barriers to this intervention included lack of nursing confidence regarding the security of these discussion formats, lack of willingness of the intradisciplinary nursing team to communicate horizontally and perceived risk of punitive repercussions. The key to the success of this communication project depended solely on nursing's willingness to understand how their individual role in improving communication is vital to the health of the ICU work environment and thereby the ICU patients.

Section Three: Methods

Recommendations of practice change

Just as Morris (2017) discusses the importance of a HWE, a large body of evidence concludes nursing communication is integral to maintaining HWEs (Timmers, Puck & Luke, 2014; Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus, 2013; Blake, Leach, Robbins, Pike & Needleman, 2013; Mikkelsen, York & Arritola, 2015; Zurmehly, Martin & Fitzpatrick, 2009; Geertshuis, Morrison, & Cooper-Thomas, 2015; Bragg & Bonner, 2016; Fisher, Jabara, Poudrier, Williams & Wallen, 2016; Morris, 2017). Online virtual Communities of Practice (CoPs), which bring professionals with similar interests together, are venues that provide online space for nurses to share ideas and transfer knowledge (Rolls, Hansen, Jackson & Elliott, 2014; Ziebarth & Hunter, 2016; Isaccson & Looman, 2017; Lara et al, 2017). Use of social media platforms to house a CoP is recommended for ease of use and quick access to clinical knowledge and information sharing throughout the discipline (Rolls, Hansen, Jackson & Elliott, 2016).

In an effort to enhance intradisciplinary communication within the ICU and achieve a HWE, an online CoP called *N2N* was developed using social media via a secret group within Facebook. ICU bedside nursing and leadership staff, as well as hospital administrative nurses were introduced to *N2N* first by posters and computer memos hung in their respective areas, and then by email invitation. As invitees request group membership, the DNP student moderator of *N2N* notified each member of their acceptance into the group. To maintain group privacy, members were able to invite others without contacting the moderator. The Centers for Disease Control and Prevention [CDC] (2016) suggests developing a charter for a CoP may help with establishing rules to maintain a professional, collaborative and educational atmosphere, therefore an *N2N* Charter was created (Appendix H). The charter lists guidelines for members within area 5.3, including respecting patients and other practitioners, working toward solutions and speaking from personal experiences.

Plan for implementation of EBP practice change

Evidence-based practice model. The recently revised Iowa model for evidence-based practice approach is a good choice for an effective, methodically executed communication project. This frequently used EBP framework is validated by practitioner utilization from 50 states and 130 countries (Iowa Model Collaborative, 2017, p. 175). The components of this model flow within a decision tree format, making application of the model manageable.

The identified issue is a southwestern United States medical center was acquired by a large non-profit hospital system in 2014, with many changes post-merger. Since acquisition, the health of the ICU work environment has declined, affecting staff and thereby patient satisfaction. The clinical question was can facilitation of intradisciplinary communication, using an online social media CoP, enhance a HWE in the ICU? It is significant that both the hospital CEO and

ICU director expressed concern regarding ICU nurse retention post-merger. Facility ICU nurses voiced lack of consistent communication from administrative nurses, both during and after the merger, as a barrier to achieving and maintaining a healthy ICU work environment. Research has shown that lack of a healthy work environment can have a negative effect on patient outcomes, especially in critical care settings (AACN, 2018).

Bedside ICU nurses, as well as the CNO, ICU director and ICU nurse managers, were approached regarding this project. IT staff and administrative assistants were also asked to be a part of the communication support team. An exhaustive search was completed and studies appraised as discussed. There is sufficient evidence to support the need for effective communication during and after a merger situation. Additionally, there is adequate evidence to support lack of intradisciplinary communication contributes to attrition. Communication interventions were discussed abundantly throughout the literature, however, intradisciplinary nursing-specific interventions were minimal. As communication and leader-follower relationships are part of all work environments, it is reasonable to apply communication initiatives put into place by other businesses, just as healthcare has taken quality improvement direction from the aviation and automotive industries (Dominiczak & Khansa, 2018).

N2N consisted of an online social media CoP with 24/7 access along with weekly educational offerings including live intradisciplinary forums. Information offered on the CoP message board included, but was not limited to, planned and impromptu learning opportunities including communication education, real time online conversations with community members, linked scholarly resources and continuing education offerings. *N2N* was patient identifier free and no HIPAA data was accessed, existing simply to allow free expression of professional nursing thoughts and ideas regarding communication issues. The weekly *N2N* real time offering

was a place to allow all nurses to exchange additional ideas, work towards understanding of others and maintain open levels of communication throughout the nursing team. Recruiting nurses of all preparations and roles is important to the success of *N2N*. Although they are not a part of the formal structure, bringing stakeholders' thoughts and ideas to *N2N* could certainly occur via nursing staff. The existence of a structured communication format in both an online and synchronous live format presented nurses of all roles with an opportunity to engage with others, empower their ideas and grow personally and professionally.

Making *N2N* a consistently utilized communication tool was a challenge. The biggest barriers to this intervention included lack of nursing confidence regarding the security of these discussion formats, lack of willingness of the intradisciplinary nursing team to communicate horizontally/vertically and perceived risk of punitive repercussions. The key to the success of this communication project depended solely on nursing's willingness to understand how their individual role in improving communication is vital to the health of patients, as well as their personal job satisfaction and coworker retention. The intervention itself created an easily accessible way to disseminate information. On a more formal basis, submitting this project to journals such as the American Journal of Critical Care (AJCC), International Journal of Evidence-Based Healthcare, Computers, Informatics, Nursing (CIN) and Online Journal of Issues in Nursing (OJIN) has ensued after project completion. Submitting the project abstract to conferences for presentation will also take place in the near future.

Practice setting and sample. The practice setting was a 177-bed southwestern US medical center that has been acquired by a large hospital system within the last four years. A convenience sample of nurses who work in a 22-bed medical-surgical ICU was used for this DNP project. The participants made up the ICU intradisciplinary nursing team, which consisted

of 43 ICU bedside nurses as well as administrative staff including four case managers, four ICU nurse managers, ICU senior nurse manager, ICU director and Chief Nursing Officer (CNO). The ICU was chosen for this project because of decreasing retention post-merger.

Clinical context description. Communication in the post-merger time frame within the literature discussed settings which possess supervisory-employee relationships including ICUs, healthcare institutions, businesses and universities. Nursing HWE environments are discussed within healthcare as a whole, as are nurses. Online communication modalities were discussed more from the social media subscriber perspective. The project site has a hierarchical nursing structure, HWE needs and social media availability, just as the described sites within the literature.

Selection process. Morris (2017) states during times of organizational change, retention issues can intensify, related to increased uncertainty and decreased two-way communication. According to the American Association of Critical Care Nurses [AACN] (2016), research has shown lack of practitioner communication can have a negative effect on patient outcomes, especially in critical care environments. For this reason, the AACN has established guidelines for HWE, with the leading component being proficient communication (2016). The southwestern United States ICU project site has recently been affected by a merger, resulting in diminished intradisciplinary communication, thus decreasing the health of the work environment and leading to decreased nurse retention. Working to improve the ICU work environment at this facility by establishing intradisciplinary communication opportunities is a reasonable quality improvement plan for a DNP project. *N2N* education (Appendix I) was based upon Isaacson & Looman's (2017) communication in CoP framework "curate, connect, collaborate and contribute" (p. 82), as well as Appelbaum & Gandell's (2003) post-merger "prescriptives", including "treating the

past with respect; monitoring and reinforcing mechanisms; helping cope with loss; CEO & executives practice what they preach; and communicate in different ways” (p. 403).

Nursing preferences. Given that this is not a patient-centered project, ICU bedside and administrative nurse preferences and values were evaluated. ICU nurses need rationale for change initiatives to be successful and sustainable. Administrative nurses require benefit/risk ratios for all they do. Both administrative and ICU nurses prefer to be part of the decision-making process, especially during times of change (personal communications, October 3, 2017). Most important is the need for open intradisciplinary horizontal and vertical communication, a professional and organizational culture change that will require healthcare hierarchical relationships be left behind.

Organizational Readiness for Change

Systems issues. Schein (2017) laments, “It is sad to see how many fatal accidents over the years have resulted from communication failures that have (organizational) cultural roots” (Eschelons as Macro Cultures section, para 3). Morris (2017) continues, stating organizational compatibility is often disregarded during mergers, yet transition and assimilation of cultures will occur. Hospital macrosystems possess specific cultures that embrace varying ideas regarding the culture of communication among employees of different statuses. Each employee in a complex adaptive system experiences their role in a different way and culture is created when these experiences come together (Schein, 2017). Transdisciplinary teams can help to advance organizational communication cultures by creating individual intradisciplinary high-performing microsystems that collectively build a superior macrosystem.

Change readiness. A post-merger southwestern US medical center has an ailing ICU microsystem where nurse retention is decreasing. The hospital CEO indicated hospital

administration is aware of nursing retention issues within their facility and was eager to work towards a communication remedy for this problem (Personal communication, October 12, 2017). The ICU director agreed, saying retaining ICU nursing staff is problematic, leading to frequent use of travel and registry nurses, resulting in less engagement of staff (Personal communication, November 8, 2017). The ICU nurses discussed lack of consistent communication is a barrier to nurse retention, however the larger issue was understanding their role in nurse leader to ICU nurse interaction. These statements suggest that lack of two-way intradisciplinary communication impacts the healthy ICU work environment, leading to decreased nurse retention. Retaining seasoned staff within the ICU by achieving a HWE was a compelling reason to examine characteristics of and remedy issues within nurse administrator-bedside nurse communication.

Potential Implementation Barriers/Facilitators

Barriers. Implementation of *N2N* was a challenge to the culture of the ICU. Removing hierarchical communication barriers including lack of empowerment to voice opinions, poor conflict resolution and minimal inclusion in decision-making (Timmers, Puck & Luke, 2014, p. 127) were included in the implementation plan. The biggest barriers to this intervention included lack of nursing confidence regarding the security of these discussion formats, lack of willingness of the intradisciplinary nursing team to communicate horizontally and perceived risk of punitive repercussions. The key to the success of this communication project depended solely on nursing's willingness to understand how their individual role in improving communication is vital to the health of the ICU work environment and thereby critical to the health of ICU patients.

Strategies to remove barriers included presenting this communication quality improvement initiative in a positive light and educating staff that the intervention would improve

not only their work environment, but their patient outcomes. Another strategy was using eye-catching, humorous posters and emails to introduce and disseminate project rationale and information clearly. A final strategy included using CE credit and a small gift cards as incentive for participation in the online educational offerings via *N2N*.

Facilitators. Four bedside ICU nurse champions, as well as the ICU director were approached regarding this project. They willingly assisted the DNP student with any project aspect and received a one hour dedicated instruction to the *N2N* platform. All of the administrative nurses who participated in this project are critical care nurses, therefore their understanding of ICU microsystem needs helped to facilitate communication changes within the ICU environment. IT staff and administrative assistants were part of the communication support team. Additionally, the facility research team was onboard with the DNP project.

Measurement Methods/Tools

As facilitation of intradisciplinary nursing communication to promote a HWE was the purpose of this DNP project, utilizing a tool to measure the health of the ICU environment was desirable. The AACN (2016) Healthy Work Environment Assessment Tool (Appendix J, Table 7) was administered via email within a 2 week time frame pre- and post-intervention. Within this anonymous assessment, the aggregate communication scores, compiled by the AACN, were compared by the DNP student pre and post intervention, determining the success of the intervention. Additionally, the overall standard communication scores were further divided into three separate measures which were also examined critically, including questions that addressed intradisciplinary communication frequency, role modeling and respect (Appendix K). The AACN does provide a benchmarking report to compare facility aggregate data to other organizations, which will be used to create camaraderie among staff.

The AACN states the HWE Assessment tool is best used to assess the development of a HWE and that the tool's validity was tested by 500 subjects divided into two groups, resulting in internal consistency with Cronbach's Alpha scores of 0.80 or above (2016). The most recent iteration was also tested for reliability and validity with good outcomes. The AACN does post the possibility of their use of aggregate data collected by the use of their free tool, but will not reveal any participant or organizational identifiers.

Data collection process and logistics. The DNP student served as the HWE assessment administrator by organizing the dissemination of the survey and interpreting the results of the communication portion pre and post-intervention. AACN HWE surveys were administered via encrypted work email and tabulated online per the AACN. Aggregate demographic information was obtained from the ICU manager. Barriers to data collection included compliance with completion and timely return. Data was collected within a two week period pre and post-intervention. HWE survey results and aggregate demographic data were filed on a password protected, encrypted computer.

Data analysis plan. Whereas the quantitative data was analyzed by the AACN, the qualitative data was collected and analyzed by the DNP student. Via *N2N* moderation, observation of and direct communication with the group was completed per the DNP student. Participation in educational activities, discussions and quality of interactions was monitored and grouped into themes for analysis. This data was placed into a spreadsheet and housed on a password protected, encrypted computer.

Practice Model Use Analysis

The IOWA model consists of three "decision points" including topic prioritization, evidence measurement and practice change appropriateness, interspersed with steps of team

creation, evidence discovery/critique, practice change development/ implementation, change sustainability evaluation and results dissemination (Iowa Model Collaborative, 2017, p. 178).

Hospital mergers have become a common occurrence within American healthcare and working toward alleviating communication issues that arise with these changes are critical to success of the new organization, making this a top priority (Appelbaum & Gandell, 2003). As noted in the *N2N* Charter (Appendix H), an intradisciplinary team was formed, consisting of ICU bedside and supervisory nurses, as well as administrative nurses. An exhaustive literature search was performed, providing sufficient evidence communication is a critical issue in the post-merger time frame and online CoPs are a reasonable way to enhance communication and provide education.

The *N2N* CoP was designed using existing organizational resources and ground rules for use have been developed via the *N2N* charter (Appendix H). Evaluation, implementation and data collection plans were discussed at length in previous portions of this proposal. The project team and stakeholders voiced this communication project was reasonable to adopt within the ICU environment. The next steps included implementation of *N2N*, qualitative evaluation of nurse utilization and quantitative evaluation of the effect on the ICU work environment and dissemination of results via a local staff presentation, *N2N* podcast and journal publication.

Proposed Budget, Time, and Resources Plan

A budget table and project implementation timeline were included as tools to determine resource needs (Appendices L and M). A timeline for implementation was developed as a visual aid to chart project process. Selection of ICU champions, administrative champions and information technology experts was completed. Educating them and engaging their assistance

was one of the first steps in project implementation. Few deficiencies were noted, although the DNP student did consult with others who were familiar with *Facebook* closed groups.

Section Four: Findings

Sample

Fifty-four nurses were sent email invitations to join *N2N*, including 43 ICU bedside nurses and nine administrative nurses. Fourteen nurses responded to the anonymous survey with eleven completing the survey, a 20.4% completion rate. Upon completion of the four week *N2N* implementation, an email link was sent to the same 54 ICU bedside and administrative nurses, requesting they take the AACN HWE survey once again. Nine nurses responded to the anonymous survey with eight completing the survey, a 14.8% completion rate.

HWE Skilled Communication Scores

Figure 1 displays data from both the survey taken before and after *N2N* implementation, showing an overall skilled communication score of 3.73 before *N2N* implementation and 3.79 after *N2N* completion, a .06 improvement. Question 1, which assessed frequency of intradisciplinary communication in regard to decision making, showed an increase from 3.55 to 3.63 after *N2N* implementation, a .08 improvement. Question 2, which evaluated if nurses' actions match their words, rose slightly from 3.73 to 3.75 after *N2N* implementation, a 0.2 improvement. Question 3, which measured zero tolerance behavior perception, jumped from 3.91 to 4.00 after *N2N* implementation, a 0.9 improvement, boosting this metric to excellent status.

***N2N* Participation Outcomes**

Fourteen nurses agreed to join *N2N*, a 25.9% participation rate. Of those fourteen nurses, eleven were ICU bedside nurses (78.6%) while three were administrative nurses (21.4%). Table

2 displays data collected by the author and compiled via *Facebook Insights*, a free data gathering service offered per *Facebook*. A total of 68 comments were posted within the four week N2N implementation, with 56 showing horizontal communication (73.5%), while 24 displayed vertical communication (26.5%). Also, of the 68 comments, 12 utilized both horizontal and vertical communication simultaneously (17.6%). Posts and subsequent interactions were most often seen on Tuesdays and Fridays each week, when merger communication discussions and professional interaction activities took place. However, views were more plentiful, with a total of 217 ICU bedside nurse views (81.3%) and 50 administrative nurse views (18.7%) noted. Additionally, weekly educational unit participation views revealed 80 ICU bedside nurse views (85%) and 14 administrative nurse views (14.9%). Observations without posts occurred 4-5 days every week, with the most frequent views showing on Sundays, when educational units were published. Four nurses completed all content within each unit.

Section Five: Recommendations and Implications

The online communication-focused community of practice called *N2N* demonstrated feasibility to enhance communication among bedside and administrative nurses working in an ICU setting. One measure that improved from “good” to “excellent” was the zero tolerance for disrespect and abuse. The Joint Commission compels organizations to create and apply zero tolerance policies when dealing with aggressive and troublesome behaviors.²¹ Factors that may have accounted for the success of this online communication-focused community of practice project was the information was introduced by visuals, verbal discussion and electronic media.

Limitations included low response rates to participate in *N2N*. Therefore, additional recruitment visits on both shifts were conducted by the author and the completion timeframe was extended for one week, giving the nurses two weeks to both join *N2N* and take the survey. When

the staff and administration were asked anecdotally about their thoughts on the usefulness and whether they would recommend continuation of *N2N*; several staff members voiced concerns regarding the professional and safe use of social media, as well as their lack of comfort with mixing bedside and administrative ICU nurses in one venue. Yet, others felt uncomfortable with technology and social media as a whole. This potentially contributed to the small percentage of staff participation. According to Edgar Schein, former MIT professor and founder of the Organizational Culture Model, “One of the major challenges for learning leadership is how to establish trust in a network where people may not have face-to-face contact”.^{22(p.348)} Yet, given this was a completely voluntary project offered at an extremely busy time of year for this facility, those who chose to participate were actively engaged with posts in the discussion of *N2N*. A final limitation was the inability to separate bedside nurse and administrative nurse responses to the healthy work environment survey as the data was collected anonymously and aggregately. Valuable information regarding perception of communication between bedside nurses and administrative nurses could be obtained from this data.

Despite these limitations, valuable lessons were learned about disseminating information to ICU bedside and administrative nurses using *N2N*. Few bedside nurses checked their email daily, while administrative nurses did routinely. In contrast, most administrative nurses were slow to respond to *N2N* offerings, while bedside nurses were more timely. Also, bedside nurses more often performed the curating role of idea scout by posting articles and information within *N2N*. During the implementation of *N2N*, horizontal communication continued to be the interactive mode of choice for participants and camaraderie among bedside staff emerged, yet vertical communication remained minimal. It is reasonable to consider that participation in *N2N* would likely grow over time, increasing the incidence of all types of communication.

Conclusion

Future application of communication-focused online communities of practice in post-merger organizations should include hierarchical nursing barrier reduction, as well as communication culture change strategies. Via a closed group social media, we were able to provide a free venue for intradisciplinary nurses to communicate safely and professionally. It is feasible that online communities of practice can enhance communication among bedside and administrative nurses working in an ICU setting, improving the health of the post-merger work environment, directly affecting nurse retention. Still, the desire to work toward better nursing communication and healthier work environments must come from the intradisciplinary nursing team as a whole. If excellent patient outcomes are truly nursing's goal, then the evidence compels nurses to provide patients with an intradisciplinary nursing team who communicates well, collaborates often and cares greatly for their well-being.

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Appendix A

Table 1.

Evaluation Table for N=11 Articles Exploring Nursing Communication and Retention

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|------------------------------------|--|---|--|--|-----------------------|--|
| Appelbaum & Gandell, 2003. Juggling Corporate Culture Change | Mergers & Acquisitions (M&A) Model | Case Study | N = 11 AN within 4 hospitals sampled (merged to become Maple Leaf Medical Center) | Conducted interviews using 6 PM guidelines from M&A model, collected questionnaires | Hospitals with PM success utilize present and intentional CM from many directors to employees, no one primary communicator | IV High | -PM CM only 1 aspect of study -Possible lack of congruency with AN guideline application -Stats provide evidence of CM importance PM |
| Blake, Leach, Robbins, Pike & Needleman, 2013. Healthy Work Environments and Staff Nurse Retention | Magnet work environment measures | Descriptive, Cross-Sectional Correlational | N = 415 BNs from 10 PICUs Convenience sample | Coded Practice Environment Scale of the Nursing Work Index Revised Surveys were taken, patient outcome data collected and correlated | Communication and collaboration are crucial in constructing HWE | VI Medium | -2 of 4 models significant, but not strong enough predictors of IL |

Legend: BN = Bedside Nurse AN = Administrative Nurses PM = Post-Merger CM = Communication IL = Intent to Leave

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|---|--|-------------------------------------|---|--|---|-----------------------|--|
| Bragg & Bonner, 2016. Degree of Value Alignment: A Grounded Theory Look at Rural Nurse Resignations | Grounded Theory Application | Descriptive | N = 12 Advertisement placed for rural nurses, 11 females, 1 male | Interviews | Alignment of values between rural BNs and places of work affected BNs IL. Lack of connectedness (CM), shared vision with hospital ANs added to IL. | VI Medium | -Small sample, rural area BNs -No PM scenario - 2 component approach to reduce IL, BNs to reflect on practice, ANs to support BN value alignment |
| Fisher, Jabara, Poudrier, Williams & Wallen, 2016. Shared Governance: The Way to Staff Satisfaction And Retention | Three component framework for HWEs and nurse retention | Expert Opinion | All BNs at the NIH Clinical Center | -NDNQI data analysis for best practices -Journal club for retention and recognition -Mentoring program and resource site for leadership and autonomy | Good patient outcomes result from retention of specialized BNs working in a HWE. Supportive AN and empowered BN relationship is important. | VII High | -Authors leaders at the NIH Knowledgeable regarding nurse retention and healthy work environment -Description of efforts at NIH clinical center, no study activity |

Legend: BN = Bedside Nurse AN = Administrative Nurses PM = Post-Merger CM = Communication IL = Intent to Leave

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|---|--|--|--|--|-----------------------|---|
| Geertshuis, Morrison, & Cooper-Thomas, 2015. It's Not What You Say, It's The Way That You Say It | Leader-Member Exchange (LMX) Theory | Descriptive | N = 107 Convenience sample of those working at least 15 hours/week in a leadership or management role | Survey with online data collection | BNs with higher LMX AN relationships and upward CM are viewed as more rational CM than those with low LMX relationships with ANs | VI High | -Emphasizes the "importance of building strong supervisor-subordinate relationships" -Encourages use of "upward influencing communication" |
| Marmenout, 2011. Peer Interaction in Mergers: Evidence of Collective Rumination | Random scenario assignment and associated questionnaire | Controlled Trial without Randomization (CCT) | N = 81 Convenience sample of undergraduate college students | Random scenario education and associated questionnaire | Collective rumination of BNs leads to low morale PM; positive AN leadership focusing on CM is one of 3 levers to remedy | III High | -Not random sample -Strong evidence AN leadership deal/style affects IL p < 0.05 |

Legend: BN = Bedside Nurse AN = Administrative Nurses PM = Post-Merger CM = Communication IL = Intent to Leave

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|--------------------------------------|-------------------------------------|--|---|---|-----------------------|---|
| Mikkelsen, York & Arritola, 2015. Communication Competence, Leadership Behaviors, and Employee Outcomes in Supervisor-Employee Relationships | CM Competence | Descriptive Correlational | N = 276 144 male, 127 female employees from various industries Convenience sample of registered website users | -Questionnaire consisting of 110 questions assessing CM and leadership in employee-boss relationships. -Online data collection | 4/6 hypotheses fully supported, (p < .001), 2 of which were CM related. Leader-employee relationships with effective CM were best predictors of job satisfaction | VI High | -Different industries, same CM outcomes -no discussion about specific communication behaviors |
| Morris, 2017. Frontline Leadership During Hospital Consolidation | Three prong success merger framework | Literature review | NA | NA | ANs who CM appropriately, manage standardization and centralization effectively, and create a shared culture are necessary for the success of any hospital consolidation. | VII Medium | -Recent supporting literature; doesn't define successful hospital merger -Provides template highlighting CM as first intervention for successful merger. |

Legend: BN = Bedside Nurse AN = Administrative Nurses PM = Post-Merger CM = Communication IL = Intent to Leave

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|---|--|---|--|--|-----------------------|---|
| Timmers, Hulstaert & Leenen, 2014. Patient Outcomes Can Be Associated With Organizational Changes. | Acute Physiology and Chronic Health Evaluation II score; Therapeutic Intervention score | Observational Cohort Study | N = 45 (8 physicians, 37 BNs) 10 bed University SICU; 1477 patient outcomes reviewed post intervention | SICU restructure and CM huddle intervention/ Medical record review | CM, along with work ethics, organization and ICU structure intervention have a positive effect on patient outcomes. | IV High | -Study describes nurse-doctor relationship, not BN/AN -Many similar hierarchical CM issues exist between BN/AN |
| Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus, 2013. Effective Strategies For Nurse Retention in Acute Hospitals | International Hospital Outcome Study Framework | Mixed Methods (Quantitative & Qualitative) | N = 272 Convenience sample, Nursing units in Belgian hospitals (Quantitative) N = 6 AN nurses (Qualitative) | -BN Surveys (Quantitative) -AN Interviews (Qualitative) | -Significant association ($p < 0.001$) between the quality of BN work milieu and intention to leave. -high performing hospitals have horizontal AN structure. | V Medium | -Limited to certain Magnet components -Not a random sample |

Legend: BN = Bedside Nurse AN = Administrative Nurses PM = Post-Merger CM = Communication IL = Intent to Leave

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|---|----------------------|-------------------------------------|---|------------------------------------|--|-----------------------|---|
| Zurmehly, Martin & Fitzpatrick, 2009. Registered Nurse Empowerment and Intent to Leave Current Position and/or Profession | Survey | Descriptive correlational | N = 1231 Random BNs, Distance Setting Power analysis required N = 1300; 10% respondents not used r/t incomplete survey data | Survey with online data collection | IL was strongly related to BN empowerment. Dissatisfaction may be result of perceived lack of AN support and decreased information management (CM) resulting in overall BN job discontent. | VI High | - Used CWEQ-II, Cronbach's Alpha -IL strongly r/t BN empowerment p < 0.001 -elements of BN empowerment were need for information and management support |

Legend: BN = Bedside Nurse AN = Administrative Nurses PM = Post-Merger CM = Communication IL = Intent to Leave

Table 2.

Evaluation Table for N=8 Articles Exploring Nursing Communication Interventions that Enhance HWEs

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|---|-------------------------------------|---|--|--|-----------------------|---|
| Dong, Ainsworth & Baumeister, 2016. A Meta-Analysis of Social-Networking Online and Social Capital | Bridging or bonding social capital | Meta-analysis | N = 22,290 Social networking participants. 58 articles. 50 effect sizes of bridging social capital; 43 effect sizes of bonding social capital | Analyzed studies of SNS use effect on bridging and bonding social capital. Also looked at specific activity effect on bridging. | Use of SNS via social media encourages connection and knowledge transfer among those who have met offline. | I High | + moderate association between SNS use and bridging social capital (p>.001) |
| Gresh, Mena-Carrasco, Rauh, & Pfaff, 2017. Utilization of Communities of Practice for Ongoing Learning and Knowledge Dissemination | Global Alliance for Nursing and Midwifery (GANM) Multimodal CoP | Exploratory Descriptive | N = 4000 Members of GANM CoP, nursing and midwifery specialty | GANM CoP utilized student interns & collaborative leadership, webinars, blogs, SM, discussion boards, library, podcasts and publications to disseminate information. | The Nursing and Midwifery CoP combines online CM with collaborative leadership, delivering specialty specific education to nurses. | VI Medium | -CoPs encourage networking and are cost-effective -Difficulty maintaining consistent moderators -Created student interns to manage moderation |

Legend: BN = Bedside Nurse AN = Administrative Nurse CM = Communication CoP = Community of Practice
SM = Social Media SNS = Social Networking Sites

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|--------------------------------------|-------------------------------------|--|--|--|-----------------------|--|
| Isaccson & Looman, 2017. Strategies for Developing Family Nursing Communities of Practice Through Social Media | CoP framework; Social Capital Theory | Literature review | NA | NA | Development of curate, connect, collaborate and contribute model for professional SM-based CoPs | VII High | -Recent supportive literature -Authors have much clinical and academic experience, including SM in nursing research |
| Lara et al., 2017. Knowledge Management Through Two Virtual Communities of Practice | Virtual CoPs | Cohort | N = 181 Healthcare professionals (physicians, BNs) Convenience sample of 2 distinct specialties | -Use of virtual CoPs. -Data collected included visits, contributions and most frequented to the sites x 24 months | 26,372 visits and 2351 contributions were noted; Virtual CoPs are a realistic communication tool for clinical practice | IV High | -more geared toward physicians, would need BN specific environment |

Legend: BN = Bedside Nurse AN = Administrative Nurse CM = Communication CoP = Community of Practice
SM = Social Media

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|---|----------------------|-------------------------------------|--|--|---|-----------------------|--|
| Rolls, Hansen, Jackson & Elliott, 2014. Analysis of the Social Network Development of a Virtual Community for Australian Intensive Care Professionals | Virtual CoPs | Retrospective Descriptive | N = 1042 Australian intensive care clinicians (85% nurses, 10% doctors, 5% other) Convenience sample of CoP online membership database | -Retrospective data collection from CoP database -Looked at non-identified continued membership over a 6 year period | -Clinical unit managers use CoPs most. -Intensive care professionals remained members, valued online CoPs for shared culture and values | VI Medium | -All CoP members were analyzed -CoP technology does not provide data on reading of SM or engagement |
| Rolls, Hansen, Jackson & Elliott, 2016. How Health Care Professionals Use Social Media to Create Virtual Communities: An Integrative Review | Virtual CoPs | Integrative Literature Review | N = 72 studies 44 qualitative, 20 mix-methods, 8 lit reviews. Sample included 24 physicians, 15 nurses, 14 allied health professionals, 8 general health professionals, a multidisciplinary clinical specialty area (n=9), and 2 midwives. | -Data collection included Web-based observation (n=39), surveys (n=23), interviews (n=11), focus groups (n=2), and diaries (n=1) | -SM use influenced by user's attitude, ease of SM use -Reasons to start a virtual CoP via SM are knowledge sharing and issue discussion -Most members didn't post as often as they read/accessed SM | VII High | - Of 36 virtual communities, 31 were single discipline. |

Legend: BN = Bedside Nurse AN = Administrative Nurse CM = Communication CoP = Community of Practice
SM = Social Media

| Study Citation (Authors and Date) | Conceptual Framework | Design/patient or subject selection | Sample (characteristics and size) and Setting | Intervention/ Data Collection | Findings/author conclusions | Level/ Quality Rating | Reviewer's comments (strengths and limitations) |
|--|--|--|---|--|--|-----------------------|---|
| Wickersham, Johnson, Kamath & Kaboli, 2018. Novel Use of Communication Technology | Data categorized into themes via informal word-repetition analysis | Qualitative | N = 60 nurses and doctors (53% Pre Survey Response, 54% Post Survey Response) Three separate wards in an academic affiliated hospital | -Pre-post survey -Vocera intervention; An existing electronic communication tool signals BN to attend physician rounds | -Increased BN input and improved perceptions in communication, teamwork, and care coordination -May impact patient outcomes | VI Medium | -Describes novel use of existing device -Describes only nurse-doctor relationship -Many similar hierarchical CM issues for BN/AN |
| Ziebarth & Hunter, 2016. Moving Toward a Virtual Knowledge Platform for Faith Community Nurses | Virtual Knowledge Platform | Systematic Qualitative Integrative Literature Review | NA | Interviews and surveys done in articles chosen for literature review | -BN working in isolated environments want accessible platforms that encourage realtime CM and intentional messaging. | VII | -Assessed single nursing specialty's platform needs. -Defined 3 literature supported goals of platform use, including creating a culture of knowledge, visibility, and infrastructure. |

Legend: BN = Bedside Nurse AN = Administrative Nurse CM = Communication CoP = Community of Practice
SM = Social Media

Appendix B

Table 3.

Levels of Evidence Synthesis Table for N=11 Articles Exploring Nursing Communication and Retention

| Articles | Levels of Evidence | | | | | | | | | | |
|--|--------------------|---|---|---|---|---|---|---|---|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Level I: Systematic review or meta-analysis | | | | | | | | | | | |
| Level II: Randomized controlled trial | | | | | | | | | | | |
| Level III: Controlled trial without randomization (CCT) | X | | | | | | | | | | |
| Level IV: Case-control or cohort study | | X | X | | | | | | | | |
| Level V: Systematic review of qualitative or descriptive studies | | | | X | | | | | | | |
| Level VI: Qualitative or descriptive study (includes evidence implementation projects) | | | | | X | X | X | X | X | | |
| Level VII: Expert opinion or consensus, literature review | | | | | | | | | | X | X |

Legend: 1. Marmenout, 2011 2. Timmers, Puck & Luke, 2014 3. Appelbaum & Gandell, 2003 4. Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus, 2013 5. Blake, Leach, Robbins, Pike & Needleman, 2013 6. Mikkelson, York & Arritola, 2015 7. Zurmehly, Martin & Fitzpatrick, 2009 8. Geertshuis, Morrison, & Cooper-Thomas, 2015 9. Bragg & Bonner, 2016 10. Fisher, Jabara, Poudrier, Williams & Wallen, 2016 11. Morris, 2017

Table 4.

Levels of Evidence Synthesis Table for N=8 Articles Exploring Nursing Communication Interventions that Enhance HWEs

| Articles | Levels of Evidence | | | | | | | |
|--|--------------------|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Level I: Systematic review or meta-analysis | X | | | | | | | |
| Level II: Randomized controlled trial | | | | | | | | |
| Level III: Controlled trial without randomization (CCT) | | | | | | | | |
| Level IV: Case-control or cohort study | | X | | | | | | |
| Level V: Systematic review of qualitative or descriptive studies | | | X | | | | | |
| Level VI: Qualitative or descriptive study (includes evidence implementation projects) | | | | X | X | | | |
| Level VII: Expert opinion or consensus, literature review | | | | | | X | X | X |

Legend: 1. Dong, Ainsworth & Baumeister, 2016 2. Lara et al., 2017 3. Wickersham, Johnson, Kamath & Kaboli, 2018
 4. Gresh, Mena-Carrasco, Rauh, & Pfaff, 2017 5. Rolls, Hansen, Jackson & Elliott, 2014 6. Ziebarth & Hunter, 2016
 7. Rolls, Hansen, Jackson & Elliott, 2016 8. Isaccson & Looman, 2017

Appendix C

Table 5.

Outcomes Table for N=11 Articles Exploring Nursing Communication and Retention

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|----|----|
| Effect of improved bedside nurse/ administrative nurse communication on post-merger /organizational change success* | ↑ | ↑ | ↑ | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ | ↑ |
| Effect of improved bedside nurse/ administrative nurse communication on bedside nurse empowerment | ↔ | ↑ | ↔ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Effect of improved bedside nurse/ administrative nurse communication on bedside nurse intention to stay | ↔ | ↔ | ↑ | ↑ | ↔ | ↑ | ↑ | ↔ | ↑ | ↔ | ↑ |

Legend: ↑ = positive ↔ = no effect ↓ = negative

1. Marmenout, 2011 2. Timmers, Puck & Luke, 2014 3. Appelbaum & Gandell, 2003 4. Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus, 2013 5. Blake, Leach, Robbins, Pike & Needleman, 2013 6. Mikkelsen, York & Arritola, 2015 7. Zurmehly, Martin & Fitzpatrick, 2009 8. Geertshuis, Morrison, & Cooper-Thomas, 2015 9. Bragg & Bonner, 2016 10. Fisher, Jabara, Poudrier, Williams & Wallen, 2016 11. Morris, 2017

*One component of PM success is nurse retention

Table 6.

Outcomes Table for N=8 Articles Exploring Nursing Communication Interventions that Enhance HWEs

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Effect of utilization Communities of Practice on the nursing work environment | ↑ | ↑ | ↔ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Utilization of online social media platforms on which to build Communities of Practice | ↑ | ↔ | ↔ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Cost containment by using existing technology and personnel | ↔ | ↔ | ↑ | ↑ | ↔ | ↔ | ↔ | ↔ |

Legend: ↑ = positive ↔ = no effect ↓ = negative

1. Dong, Ainsworth & Baumeister, 2016 2. Lara et al., 2017 3. Wickersham, Johnson, Kamath & Kaboli, 2018
 4. Gresh, Mena-Carrasco, Rauh, & Pfaff, 2017 5. Rolls, Hansen, Jackson & Elliott, 2014 6. Ziebarth & Hunter, 2016
 7. Rolls, Hansen, Jackson & Elliott, 2016 8. Isaccson & Looman, 2017

Appendix D

Figure 1.

The Roy Adaptation Model (RAM) – Diagrammatic Representation of Human Adaptive Systems

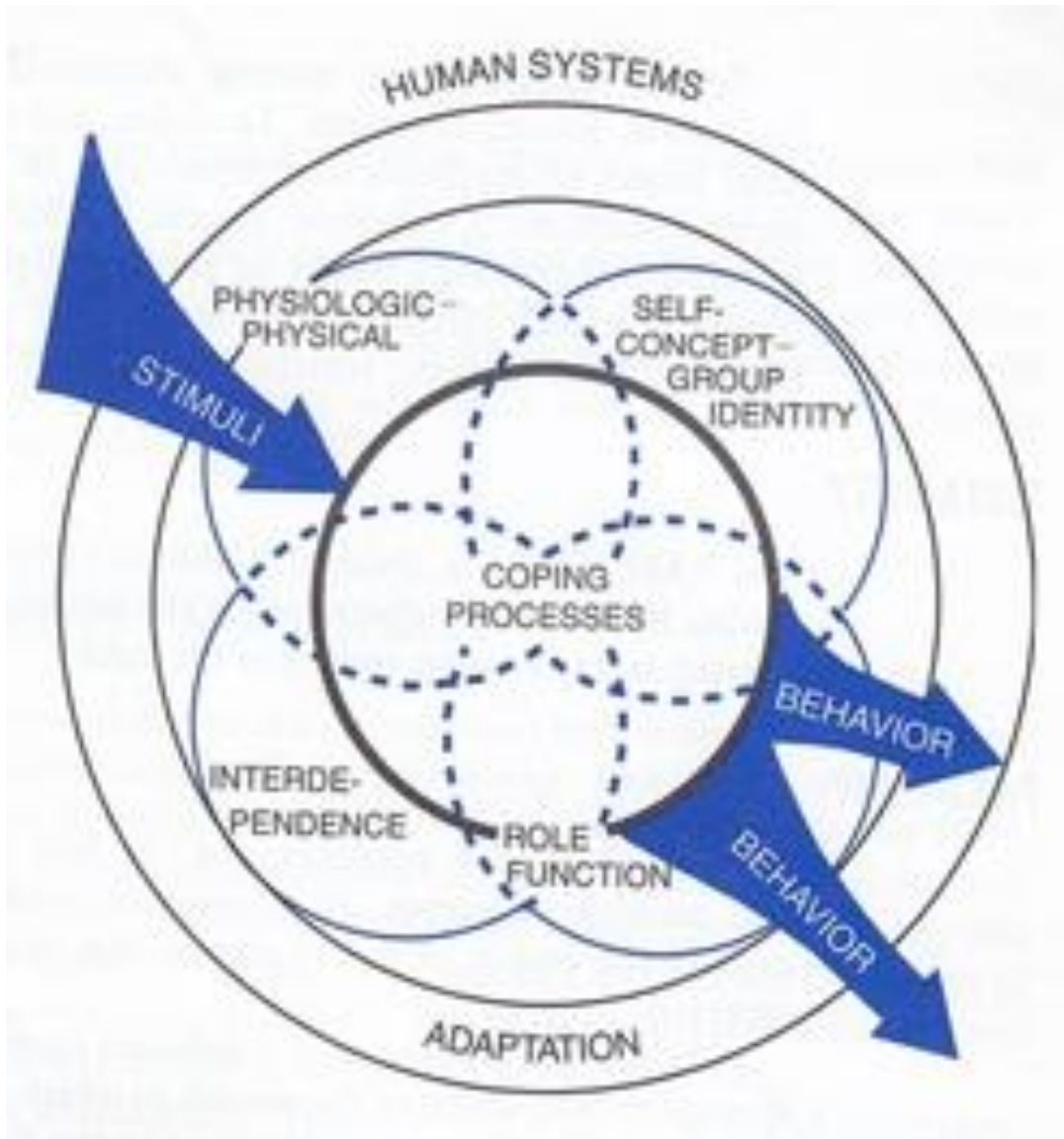


Figure 1. The Roy Adaptation Model (RAM)- Diagrammatic Representation of Human Adaptive Systems. Used/reprinted with permission from Dr. Barbara Warren

Appendix E

Figure 2.

The Iowa Model

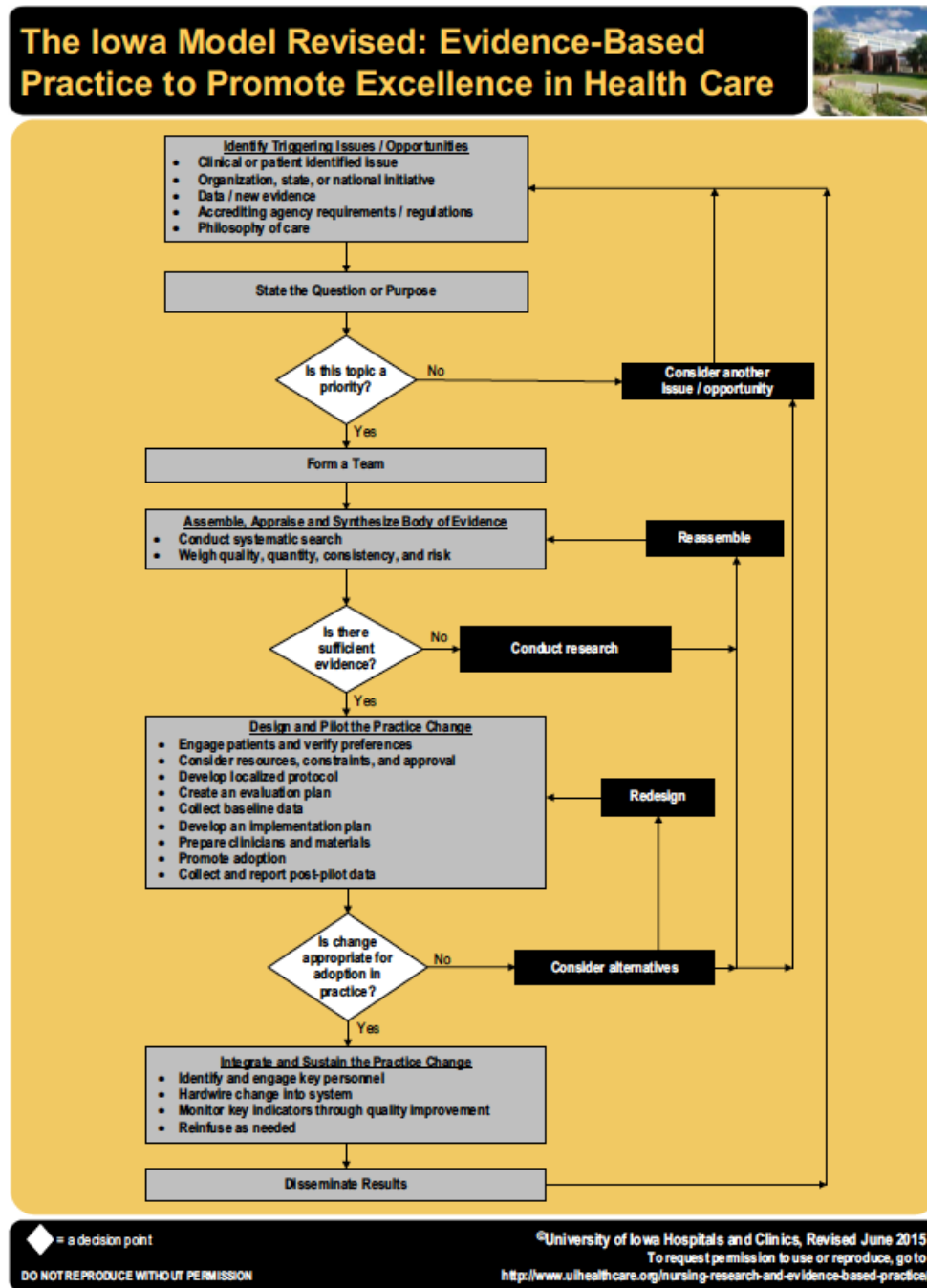


Figure 2. The Iowa Model-Revised. Used/reprinted with (pending) permission from the University of Iowa Hospitals and Clinics, Copyright 2015

Appendix F

N2N poster and computer memo

1:1 THE SICK PATIENTS
WE CARE FOR

7-7 THE CRAZY
SHIFT WE WORK

N2N A GREAT PLACE
NURSES CAN TALK

STARTING JANUARY 13TH
COMING SOON TO AN EMAIL NEAR YOU!!

The poster is a white rectangular graphic with a red border, set against a background of a brick wall. It features three photographs: a nurse in a green uniform attending to a patient in a hospital bed, a nurse in blue scrubs resting her head on her hand, and two nurses, a man and a woman, smiling and talking. The text is in bold, red and white fonts. At the bottom, a red banner contains the launch information in white text.

Appendix G

*Emails for N2N invitation, consent and HWE survey***Email #1**

Hello Nurses!

My name is Ann Deerhake and I am requesting your assistance with a doctoral communication project. This activity involves application of research to practice, participation is voluntary, and participants may withdraw at any time without penalty or loss of benefits. The purpose of this project is to facilitate ICU bedside staff and hospital administrative staff nursing communication and a healthy work environment by implementing an online community of practice via a Facebook closed group called *Nurse2Nurse (N2N)*.

The N2N Project

You are being asked to participate in this project because you are:

- an RN.
- part of the ICU intradisciplinary nursing team.

Participation requires:

- taking a 15 minute pre and post Healthy Work Environment survey online.
- at least twice weekly visits for 4 weeks to *N2N*.
- online attendance to at least one of the live interviews within the 4 week period.

N2N format includes:

- Sundays - 30 minute communication education
- Tuesdays - discussion board starters regarding post-merger issues
- Wednesdays, 4:30 pm - 30 minute live interviews/discussions
- Fridays – fun activities with nursing☺

Gift cards and CE credit opportunities will be offered to all participants.

All data will be collected as a group; no individual participant identifiers will be collected. Results from project will be published via the *N2N* group site, as well as submitted for journal publication.

For questions or concerns, contact:

- Dr. Tara O'Brien, Principal Investigator, o'brien.782@osu.edu, 614-292-8045
- Ann Deerhake, MS, RN, Co-Investigator, deerhake.13@osu.edu, 419-296-9911

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Thank you for considering participation in this project!
By clicking “Join N2N Here” below, you are giving consent to participate in this project.

JOIN N2N HERE

The AACN Healthy Work Environment Survey

Ann Deerhake requests you take the AACN Healthy Work Environment Assessment. This assessment will allow you to provide valuable feedback concerning the health of your work environment.

The survey takes about 15 minutes to complete and your answers will be confidential. Your response will be due by 1/20/2019.

This invitation to participate is specifically for you. Please do not forward this email to others. Also, to protect data integrity and your anonymity, please answer the survey only once.

Click to access the assessment or go to the following Web address:
<http://mini.aacn.org/dm/hwe/hwetakeassessment.aspx?passcode=776912>

This assessment is based on the AACN Standards for Establishing and Sustaining Healthy Work Environments. To download the standards and learn more about creating a healthier work environment, visit [our Healthy Work Environments home page](#).

Thanks,
The AACN Healthy Work Environment Team

Email #2

Ann Deerhake recently requested you take the Healthy Work Environment Team Assessment. If you have already taken the survey, thank you for your participation. In case you have not yet provided your valuable feedback concerning the health of your work environment, the survey is still open and awaiting your input.

The survey takes about fifteen minutes to complete and your answers will be confidential. Your response deadline has been extended and is due by 1/27/2019.

This invitation to participate is specifically for you--please do not forward this email to others. Also, to protect data integrity and your anonymity please answer the survey only once.

Click to access the assessment or go to the following Web address:
<http://mini.aacn.org/dm/hwe/hwetakeassessment.aspx?passcode=776912>

This assessment is based on the AACN Standards for Establishing and Sustaining Healthy Work Environments. To download the standards and learn more about creating a healthier work environment, visit [our Healthy Work Environments home page](#).

Thanks,
The AACN Healthy Work Environment Team

Email #3

Hello Nurses!

I appreciate all of the time and effort put in by everyone to help make *N2N* a success! The final piece of the project is to take the AACN Healthy Work Environment Assessment once again. Thank you for your cooperation!

Ann Deerhake

The AACN Healthy Work Environment Survey

Ann Deerhake requests you take the AACN Healthy Work Environment Assessment. This assessment will allow you to provide valuable feedback concerning the health of your work environment. The survey takes about 15 minutes to complete and your answers will be confidential. Your response will be due by 3/3/2019.

This invitation to participate is specifically for you. Please do not forward this email to others. Also, to protect data integrity and your anonymity, please answer the survey only once.

Click to access the assessment or go to the following Web address:
<http://mini.aacn.org/dm/hwe/hwetakeassessment.aspx?passcode=776912>

This assessment is based on the AACN Standards for Establishing and Sustaining Healthy Work Environments. To download the standards and learn more about creating a healthier work environment, visit [our Healthy Work Environments home page](#).

Thanks,
The AACN Healthy Work Environment Team

Email #4

Ann Deerhake recently requested you take the Healthy Work Environment Team Assessment. If you have already taken the survey, thank you for your participation. In case you have not yet provided your valuable feedback concerning the health of your work environment, the survey is still open and awaiting your input.

The survey takes about fifteen minutes to complete and your answers will be confidential. Your response deadline has been extended and is due by 3/10/2019.

This invitation to participate is specifically for you--please do not forward this email to others. Also, to protect data integrity and your anonymity please answer the survey only once.

Click to access the assessment or go to the following Web address:

<http://mini.aacn.org/dm/hwe/hwetakeassessment.aspx?passcode=776912>

This assessment is based on the AACN Standards for Establishing and Sustaining Healthy Work Environments. To download the standards and learn more about creating a healthier work environment, visit [our Healthy Work Environments home page](#).

Thanks,
The AACN Healthy Work Environment Team

Appendix H

N2N Community of Practice Charter

N2N COMMUNITY OF PRACTICE CHARTER

Version 1.0

10/1/2018

VERSION HISTORY

| Version # | Implemented By | Revision Date | Approved By | Approval Date | Reason |
|------------------|-----------------------|----------------------|--------------------|----------------------|---------------------------------|
| 1.0 | Ann Deerhake | 10/1/2018 | | | Initial community charter draft |
| | | | | | |
| | | | | | |

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| 3 | JUSTIFICATION..... | ERROR! BOOKMARK NOT DEFINED. |
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| 4.1 | Mission | Error! Bookmark not defined. |
| 4.2 | Goals..... | Error! Bookmark not defined. |
| 4.3 | High-Level Requirements | Error! Bookmark not defined. |
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1 INTRODUCTION

1.1 PURPOSE OF COMMUNITY CHARTER

The *Nurse2Nurse (N2N)* intradisciplinary community charter documents information required by decision makers to approve and supports the activities necessary for a successful launch, cultivation, and sustainability of the Community of Practice. The community charter includes the needs, scope, justification, and resource commitments.

The intended audience of the *N2N* Community of Practice community charter is the DNP student community sponsor, senior leadership, and the ICU community members.

2 COMMUNITY OVERVIEW

A Community of Practice (CoP) represents a group of professionals, informally bound to one another through exposure to a common class of problems and common pursuit of solutions. Communities of Practice are a way of developing social capital, nurturing new knowledge, stimulating innovation, and sharing knowledge. Communities of practice knit people together with peers and their outputs can include leading practices, guidelines, knowledge repositories, technical problem and solution discussions, working papers, and strategies.

The short-term value of the *N2N* Community of Practice is to provide a dedicated communication venue for ICU bedside staff and leaders, as well as hospital administrators, while the long-term value is to create a healthy ICU work environment and increase nurse retention via improved intradisciplinary nursing communication. Public health can benefit from the *N2N* Community of Practice by receiving care from an experienced nurse, and thereby realize better outcomes. Members will have both planned and impromptu learning opportunities including communication education, real time online conversations with community members, linked scholarly resources and continuing education offerings. This greater knowledge will enhance nursing critical thinking and communication skills, directly impacting patient care and staff satisfaction.

3 JUSTIFICATION

3.1 PUBLIC HEALTH NEED

N2N Community of Practice will improve the health of the ICU work environment. Blake (2015) advocates HWEs are essential to delivering great patient care and keeping experienced nurses at the bedside, positing the importance of creating nursing work areas that utilize cooperative teamwork, thoughtful interaction and free idea exchange. Public health consumers require and deserve the best care possible, especially in times of great need, such as during critical illness.

4 SCOPE

4.1 MISSION

The *N2N* Community of Practice will exist to enhance intradisciplinary communication within the ICU, contributing to a healthy work environment. The main issues to be addressed via this professional community include improving vertical and encouraging horizontal communication among all nurses. Members will achieve proficiency in online networking, intradisciplinary communication and collaborative leadership.

4.2 GOALS

The goals of the *N2N* Community of Practice are as follows:

- Work toward solutions to intradisciplinary nursing communication issues as well as other issues identified as priorities
- Evaluate the success of the CoP on an regular basis
- Look for collaboration points with public health partners outside of *N2N*
- Develop and support *N2N* best practices
- Identify unrecognized pockets of related projects across public health and share work openly with those projects
- Encourage standards adoption

4.3 HIGH-LEVEL REQUIREMENTS

The following table presents the requirements that the community's product, service, or result must meet in order for the community objectives to be satisfied.

| # | REQUIREMENT |
|---|---|
| 1 | Develop Strategic Context and receive management support / approval |
| 2 | Launch Community; invite participation |
| 3 | Educate stakeholders |
| 4 | Encourage participation and collaboration |
| 5 | Evaluate community effectiveness |

4.4 MAJOR DELIVERABLES

| # | DELIVERABLE LIST | START | FINISH |
|-----|--|-------|--------|
| 1.1 | Kickoff Message | | |
| 1.2 | Community of Practice Charter | | |
| 1.3 | Communication Management Plan | | |
| 1.4 | Online Collaboration Tool: Calendar, discussion groups, presentations archives | | |
| 1.5 | Joint meetings | | |
| 1.6 | Presentations & Publications | | |
| 1.7 | Regular evaluations of CoP effectiveness | | |

5 COMMUNITY PARTICIPATION

5.1 INDIVIDUAL AND ORGANIZATIONAL BENEFITS

Through the sharing, creation and management of knowledge around *N2N* issues, the community enables individuals to

- Continue learning and developing professionally
- Access expertise
- Improve communication with peers
- Increase productivity and quality of work
- Network to keep current in the field
- Develop a sense of professional identity
- Enhance professional reputation

The community benefits the organization by

- Reducing time/cost to retrieve information
- Reducing learning curves
- Improving knowledge sharing and distribution

- Enhancing coordination, standardization, and synergies across organizational units
- Reducing rework and reinvention
- Enabling innovation
- Benchmarking against influencing industry standards
- Building alliances

5.2 COMMUNITY NORMS

- Operate around the following governance principles: participation, transparency, responsiveness, consensus orientation, equity and inclusiveness, effectiveness and efficiency, accountability, and rules of engagement
- Be open to all with an interest and who abide by community norms
- Encourage the ongoing education of members and the deepening of expertise among members

5.3 GROUND RULES FOR BEING A MEMBER

- Members are willing to share challenges, and lessons learned as well as successes
- Members strive to create an environment of trust and to foster insightful, non-threatening discussion of ideas and experiences
- Members distribute leadership responsibilities and collectively share in the management of the community
- Membership and topics reflect public health issues and organizations
- Members advance their personal and professional goals through participation in the community
- Members are practitioners, contributing to the community through their experiences, skills, and time
- Members agree to be respectful and use appropriate language in group discussions and to listen and respond to each other with open and constructive minds
- Members agree to be respectful of patients by not using patient identifiers of any type
- Members will not be afraid to respectfully challenge one another by asking questions, but refrain from personal attacks -- focus on ideas
- Members will participate to the fullest extent possible -- community growth depends on the inclusion of every individual voice
- Members commit to search for opportunities for consensus or compromise and for creative solutions
- Members will contribute to an atmosphere of problem solving rather than stating positions
- Members agree to speak from their own experiences instead of generalizing ("I" instead of "they," "we," and "you")
- Members will attempt to build on each member's strengths, and help each other improve areas in need of further development

6 ASSUMPTIONS, CONSTRAINTS AND RISKS

6.1 ASSUMPTIONS

The following assumptions were taken into consideration in the development of this community. If any of these assumptions prove to be invalid then the community could face a possible risk.

1. There is interest among ICU bedside staff and leaders, as well as hospital administrators, in forming informal and formal connections.
2. There will be CoP members acting as technology and educational champions who take increasing responsibility for stewarding the success of the community.
3. Administrative and managerial leaders will support the time investment for their staff to participate in the community.

6.2 CONSTRAINTS

The following constraints were taken into consideration in the development of this community.

1. The availability of members to participate collectively at a single unique time may limit the number of participants.
2. Technology, including use of the online environment, may pose a barrier to some members
3. The four week trial period may be too brief to secure long term interest in the community.

6.3 RISKS

The table below lists the risks for this community, along with a proposed mitigation strategy.

| Risk | Mitigation |
|--|--|
| Community does not receive support from hospital leaders | DNP student to present an evidence-based case for supporting the online CoP. |
| Community does not draw interest | DNP student to create additional continuing education offerings or learning activities and offer them to staff via an email connection to the CoP. |
| Community leaders do not emerge | Propose incentives to lead the community, such as DNP student assistance with evidence-based initiatives, hospital committees or college courses. |

7 COMMUNITY ORGANIZATION

7.1 ROLES AND RESPONSIBILITIES

This section describes the key roles supporting the community.

| Name & Organization | Community Role | Community Responsibilities |
|--|-------------------|---|
| Banner Casa Grande Medical Center staff: Kara Pena RN Lemone Brady RN Amy Munguia RN Amy Hitsman RN Kathy Evans, RN Dan Lingle, RN | Community Sponsor | Persons responsible for acting as the community's champions and providing direction and support to the team. |
| Ann Deerhake, DNP Student, The Ohio State University | Community Leader | Performs day-to-day management of the community; has specific accountability for managing the community within approved constraints of scope, quality, time, and cost; delivers specified requirements, deliverables and customer satisfaction. |

7.2 STAKEHOLDERS (INTERNAL AND EXTERNAL)

A stakeholder is a person or organization – such as sponsors and the public – that is actively involved in the community, and/or that could positively or negatively impact the achievement of the community's objectives, and/or whose interests may be positively or negatively affected by the execution or completion of the community. The table below shows the stakeholders currently identified.

| STAKEHOLDER | REPRESENTATIVE(s) |
|-------------------------------|---|
| ICU Nursing Staff | Kara Pena, RN & Lemone Brady, RN |
| ICU Leadership | Amy Munguia, Senior RN Manager Amy Hitsman, RN Manager |
| Nursing Leadership | Kathy Evans, ICU Director |
| Hospital Administrative Staff | Dan Lingle, CNO |
| DNP Student | Ann Deerhake, RN |

8 COMMUNITY CHARTER APPROVAL

The undersigned acknowledge they have reviewed the community charter and agree to launch the *N2V* Community of Practice. Changes to this community charter will be coordinated with and approved by the undersigned or their designated representatives.

| | | | |
|-------------|--|-------|--|
| Signature: | | Date: | |
| Print Name: | | | |
| Title: | | | |
| Role: | | | |

| | | | |
|-------------|--|-------|--|
| Signature: | | Date: | |
| Print Name: | | | |
| Title: | | | |
| Role: | | | |

| | | | |
|-------------|--|-------|--|
| Signature: | | Date: | |
| Print Name: | | | |
| Title: | | | |
| Role: | | | |

Adapted from the CDC's CoP Charter Template. CDC CoP Resource Kit, 2015.

Appendix I

*N2N Education Plan***Objectives:**

1. Deliver communication education in an effort to foster intradisciplinary collaboration and trust.
2. Identify post-merger communication issues and possible actions to improve intradisciplinary interaction.
3. Provide online opportunities for the ICU intradisciplinary team to interact positively.

Curriculum:

During a four week implementation of the *N2N* CoP, interactive opportunities will be provided for the ICU intradisciplinary team as follows:

1. Sundays – The DNP student will record and present a 30 minute video education with case study quiz to follow, based upon Isaacson & Looman’s (2017) communication in CoP framework, “curate, connect, collaborate and contribute” (p. 82). Participants who watch the video and complete the quiz will receive 1 contact hour for each week.

Week 1 – Curating nursing content and the role of the idea scout

Week 2 – Connecting nursing ideas by using social capital

Week 3 – Collaborating via nursing networks

Week 4 – Contributing actively to the nursing CoP

2. Tuesdays - Post a discussion starter related to Appelbaum & Gandell’s (2003) post-merger “prescriptives”, including “treating the past with respect; monitoring and reinforcing mechanisms; helping cope with loss; CEO & executives practice what they preach; and communicate in different ways” (p. 403).

Week 1 – Communicating about the past

Week 2 – Coping with culture change

Week 3 – Change acceptance

Week 4 – C-Suite role modeling behavior

3. Wednesdays - Deliver weekly 60 minute live intradisciplinary discussion (30 minute interview, 30 minute audience Q & A) highlighting a different role within the ICU intradisciplinary team (bedside RN, nurse manager, ICU director, CNO).

Week 1 – ICU RN Manager interview

Week 2 – ICU Primary Care RN interview

Week 3 – RN Director interview

Week 4 – CNO RN interview

Questions (same for all)

Tell us a little about yourself and your family

Why did you become a nurse?

Tell us about your nursing career.

To me, ICU nursing means...

What is your favorite/least favorite part of being a nurse?

What is your biggest job concern at this moment?

What would make you no longer want to be a nurse?

What would you change about the way nurses communicate?

What do you think about healthcare as a business?

Finish the sentence, I would like all nurses to know...

4. Friday – Post professional communication activity to encourage free discussion of the topic presented and discussed earlier in the week.

Appendix J

Table 7.

AACN Healthy Work Environment Assessment Tool

| Number | Question |
|--------|---|
| 1 | Administrators, nurse managers, physicians, nurses and other staff maintain frequent communication to prevent each other from being surprised or caught off guard by decisions. |
| 2 | Administrators, nurse managers, and physicians involve nurses and other staff to an appropriate degree when making important decisions. |
| 3 | Administrators and nurse managers work with nurses and other staff to make sure there are enough staff to maintain patient safety. |
| 4 | The formal reward and recognition systems work to make nurses and other staff feel valued. |
| 5 | Most nurses and other staff here have a positive relationship with their nurse leaders (managers, directors, advanced practice nurses, etc.). |
| 6 | Administrators, nurse managers, physicians, nurses, and other staff make sure their actions match their words, they "walk their talk." |
| 7 | Administrators, nurse managers, physicians, nurses, and other staff are consistent in their use of data-driven, logical decision-making processes to make sure their decisions are the highest quality. |
| 8 | Administrators and nurse managers make sure there is the right mix of nurses and other staff to ensure optimal outcomes. |
| 9 | Administrators, nurse managers, physicians, nurses, and other staff members speak up and let people know when they've done a good job. |
| 10 | Nurses and other staff feel able to influence the policies, procedures, and bureaucracy around them. |
| 11 | The right departments, professions, and groups are involved in important decisions. |
| 12 | Support services are provided at a level that allows nurses and other staff to spend their time on the priorities and requirements of patient and family care. |

Table 7. AACN Healthy Work Environment Assessment Tool. Used/reprinted with permission

from the American Association of Critical Care Nurses, 2016

| | |
|----|--|
| 13 | Nurse leaders (managers, directors, advanced practice nurses, etc.) demonstrate an understanding of the requirements and dynamics at the point of care, and use this knowledge to work for a healthy work environment. |
| 14 | Administrators, nurse managers, physicians, nurses, and other staff have zero-tolerance for disrespect and abuse. If they see or hear someone being disrespectful, they hold them accountable regardless of the person's role or position. |
| 15 | When administrators, nurse managers, and physicians speak with nurses and other staff, it's not one-way communication or order giving. Instead, they seek input and use it to shape decisions. |
| 16 | Administrators, nurse managers, physicians, nurses, and other staff are careful to consider the patient's and family's perspectives whenever they are making important decisions. |
| 17 | There are motivating opportunities for personal growth, development, and advancement. |
| 18 | Nurse leaders (managers, directors, advanced practice nurses, etc.) are given the access and authority required to play a role in making key decisions. |

Table 7. AACN Healthy Work Environment Assessment Tool. Used/reprinted with permission from the American Association of Critical Care Nurses, 2016

Appendix K

AACN HWE Sample Communication Survey Results

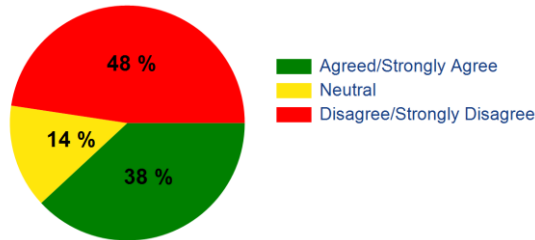
Overall Standard Score

Assessment Date: Sunday, July 22, 2018

Standard 1 Skilled Communications - Nurses must be as proficient in communication skills as they are in clinical skills.

Scoring Guidelines - Please use the following scale to interpret your team's scores for this assessment:

1.00-2.99 - Needs Improvement 3.00-3.99 - Good 4.00-5.00 - Excellent



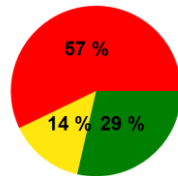
| | Responses | Percent |
|-------------------|-----------|---------|
| Strongly Disagree | 5 | 23.81% |
| Disagree | 5 | 23.81% |
| Neutral | 3 | 14.29% |
| Agree | 5 | 23.81% |
| Strongly Agree | 3 | 14.29% |

Aggregate Score: 2.81

Total Individual Responders: 7

Individual Item Scores

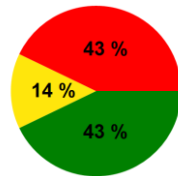
Question 1. Administrators, nurse managers, physicians, nurses and other staff maintain frequent communication to prevent each other from being surprised or caught off guard by decisions.



Score:
2.57

| | Responses | Percent |
|-------------------|-----------|---------|
| Strongly Disagree | 2 | 28.57% |
| Disagree | 2 | 28.57% |
| Neutral | 1 | 14.29% |
| Agree | 1 | 14.29% |
| Strongly Agree | 1 | 14.29% |

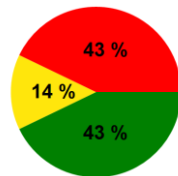
Question 6. Administrators, nurse managers, physicians, nurses, and other staff make sure their actions match their words—they "walk their talk."



Score:
2.86

| | Responses | Percent |
|-------------------|-----------|---------|
| Strongly Disagree | 2 | 28.57% |
| Disagree | 1 | 14.29% |
| Neutral | 1 | 14.29% |
| Agree | 2 | 28.57% |
| Strongly Agree | 1 | 14.29% |

Question 14. Administrators, nurse managers, physicians, nurses, and other staff have zero-tolerance for disrespect and abuse. If they see or hear someone being disrespectful, they hold them accountable regardless of the person's role or position.



Score:
3.00

| | Responses | Percent |
|-------------------|-----------|---------|
| Strongly Disagree | 1 | 14.29% |
| Disagree | 2 | 28.57% |
| Neutral | 1 | 14.29% |
| Agree | 2 | 28.57% |
| Strongly Agree | 1 | 14.29% |

Appendix L

Table 8.

Budget Table

| Required Resources | Expense | Provider |
|--|---|--------------------------|
| DNP student time, personal computer, inkjet printer | none | DNP Student |
| One hour paid champion education | \$35-50/hour x 5 = \$175-250 | In kind hospital support |
| Posters | \$5 per poster x 3 = \$15 (1 for breakroom, bathroom, administrative office) | DNP Student |
| Computer memo cards | \$5 for 20 cards = \$5 (1 for each computer) | DNP Student |
| Incentive giftcards | \$90 | DNP Student |
| Use of <ul style="list-style-type: none"> • Facebook • AACN HWE surveys • Denney Video Studio • Free CE credit offerings | No projected expenses | N/A |
| Total \$110 (with in kind support of champion education) | | |

Appendix M

Table 9.

Project Implementation Timeline

| Implementation Components | Planned Completion | Actual Completion |
|---|------------------------------------|------------------------------------|
| Complete <i>N2N</i> video education | November 1, 2018 | November 1, 2018 |
| Defend project proposal | October 22, 2018 | November 26, 2018 |
| Send proposal to facility research council | October 22, 2018 | November 26, 2018 |
| Apply for OSU exempt IRB review | October 23, 2018 | December 4, 2018 |
| Obtain OSU exempt IRB approval | November 1, 2018 | December 19, 2018 |
| Post <i>N2N</i> posters and computer memos | November 1, 2018 | December 19, 2018 |
| Obtain CE credit for weekly <i>N2N</i> education | November 12, 2018 | January 4, 2019 |
| Send introductory email/consent/pre-intervention survey link to participants | November 5, 2018 | January 13, 2019 |
| Encourage staff in person to complete survey | November 5-12, 2018 | January 13-26, 2019 |
| Educate <i>N2N</i> champions in person | November 7, 2018 | January 14-15, 2019 |
| Implement 4-week <i>N2N</i> CoP <ul style="list-style-type: none"> • Sundays - Post weekly 30 minute communication education (CE credit offered) • Tuesdays - Post discussion starter • Wednesdays - Deliver weekly 60 minute live intradisciplinary discussion • Friday – Post professional communication activity | November 12-16, 2018 | January 27, 2019-February 23, 2019 |
| Send thank you email with post-intervention survey link to participants | December 16, 2018 | February 24, 2019 |
| Encourage staff via <i>Facebook</i> to complete post-intervention survey | December 16, 2018 | February 27, 2019 |
| Obtain aggregate demographic data from ICU nurse manager | December 16, 2018 | February 27, 2019 |
| Analyze survey and <i>N2N</i> data | January 8-15, 2019 | February 2, 2019 – March 2, 2019 |
| Write manuscript for publication | January 15, 2019-February 15, 2019 | February 20, 2019 – March 8, 2019 |
| Defend DNP project | March 2019 | March 26, 2019 |