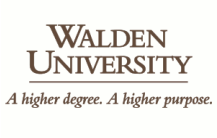

2015

Transforming Vulnerable Interactions to Effective Communication: An Application of Evidence for the Tele-Intensive Care Unit Nurse

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Abstract

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MS, Liberty University, 2011

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Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

October 2015

Abstract

Tele-intensive care collaboration in care of critically ill patients improves both the safety and quality of nursing care. However, the full benefits of the telemedicine service may not be realized unless tele-critical care nurses have the ability to communicate clearly with their remote nursing peers. The purpose of this DNP project was to create and validate an acronym style communication tool to assist the tele-critical care nurses with their communication. The relational coordination theory was the primary communication theory utilized for tool development. The tool creation phase of the project included informal observations and discussion with a convenience sample of 11 tele-critical care staff nurses. The formative feedback from this group helped to identify the episode of communication for which the tool was designed and suggested communication elements for inclusion. During the validation phase of this project, 9 volunteer experts evaluated the communication tool with a 5-point Likert scale survey. Descriptive statistics were used to analyze the survey results and provided summative feedback for validation of the tool. Mean scores between 3.44 and 4.44 demonstrated that the experts agreed with the applicability, relevance, and necessity of the tool. Feedback indicated the need for a pilot study implementing the tool to compare it with traditional communication practices and to evaluate its performance in clinical practice. This tool will be useful for future partnerships utilizing telemedicine. The project is socially significant because of its focus on communication and collaboration among healthcare providers in facilitating the patient experience and safety.

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Dedication

This work is dedicated to my family, whose unwavering love and support are both my foundation and my inspiration. To my husband who has always found a way to help make dreams a reality, my daughters who make every moment of my life more precious, and my parents who long ago taught me that anything is possible, I express the deepest gratitude.

Acknowledgments

I would like to acknowledge Anita Witzke who has provided me the guidance and support required to complete this project. Anita has been a gracious and inspiring preceptor, and I feel blessed having had the experience of working alongside her. Finally, I would like to acknowledge the Walden University faculty, especially Dr. Leach for her guidance and commitment to my educational success.

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Section 1: Nature of the Project

Introduction

Telenursing is a promising new approach to meeting the needs of the changing health care environment; however, with each new attempt to balance quality and cost, there are inherent challenges. Despite the fact that this optimization of technology can improve clinical practice, there are difficulties in establishing collaborative relationships and effective communication between remote and local resources. Developing strong communication skills and patterns, in spite of the remote location, will enhance the success of this approach, and improve the quality and safety of this care delivery model (American Association of Critical-Care Nurses, 2013).

Background

Miscommunication has been cited as a predominant factor in medical errors (Institute of Medicine [IOM], 2006). Tele-intensive care unit (ICU) nursing has become an important subset of nursing because of its ability to leverage expertise, improving the quality and safety of patient care (American Telemedicine Association [ATA], 2014). Finally, acronym-style communication tools, which employ a single word to represent the actions required, have been shown to remove barriers and enhance communication (Bekett & Kipnis, 2009). These three concepts create a triad that supports the creation of a key word/phrase communication tool styled to address the most error-prone episodes of communication in the tele-ICU practice environment (See Appendix A). The significance of the adoption of this solution will be a decrease in errors and an increase in quality and safety.

Problem Statement

Tele-ICU nurses must ensure that the word selection, structure, timeliness, and accuracy of their verbal communication are without flaw in order to provide a collaborative and supportive relationship resulting in effective patient management and outcomes. Limited by their remote presence, tele-ICU nurses have unique challenges endeavoring to communicate in a cooperative and collaborative manner with local ICU nursing staff. The exchange of information and knowledge between the remote and local ICU staff must rely primarily on the spoken word. Two-way video equipment can relay images, but it is difficult to incorporate complementary nonverbal communication techniques. Even subtle communication components such as inflection and tone do not translate as well as when communicating face-to-face (Personal Communication, Anita Witzke, September, 2014). These limiting factors demand that the verbal communication techniques of the tele-ICU nurse must be precise. The full benefits of the tele-ICU service and the professional satisfaction of tele-ICU nurses depend on their ability or inability, to clearly communicate with their local nursing peers (ATA, 2014). Overcoming these challenges in a reliable and replicable manner is essential to the success of the tele-ICU nurse and is vital for leveraging their clinical expertise across the spectrum of ICU patients to provide the highest level of quality care to patients (ATA, 2014). Applying and expanding the role of telenursing without establishing a firm foundation for communication will prevent the nursing role and the application of technology from reaching its full potential. The first practice guideline of the American Association of Critical-Care Nurses (2013) *Tele-ICU Nursing Guidelines* was the

following: “Tele-ICU nurses must employ skilled communication, effective decision-making, and true collaboration to enhance and foster relationships with the bedside multidisciplinary team and create optimal outcomes for patients and families” (p. 5).

Purpose and Objective

The purpose of this Doctor of Nursing Practice (DNP) project is to improve tele-ICU nurses’ communication at identified points of communication that are vulnerable and susceptible to error. The first objective of this DNP project was to create a key word/phrase communication tool that will positively guide the spoken communication between the tele-ICU and local ICU staff to reduce errors found with current communication. Once the key word/phrase communication tool was developed, the second objective of the project was to perform a content validation. The third objective of the project, which I will perform after graduation, is to answer the following question: Can the use of a key word/phrase communication tool improve the communication techniques of the tele-ICU nursing staff? This third objective will be addressed after graduation and will include the development of a pilot study comparing current communication with the content-validated key word/phrase communication tool. The postgraduation pilot study will be considered successful if the tele-ICU staff reports a sense of improved communication after applying the components of the communication tool. If unsuccessful, the postgraduation pilot study will demonstrate the need for future investigation of communication barriers beyond the use of a key word/phrase communication tool.

Nature of the Project

This DNP project is problem focused and descriptive. The tele-ICU nurse's remoteness has unique challenges related to communication in a cooperative and collaborative manner with local ICU nursing staff. Researchers have cited miscommunication as a predominant factor in medical errors (IOM, 2006). I developed a key word/phrase communication tool; the content of which nine identified experts validated using a 10-question Likert scale survey. Data from the surveys were analyzed using descriptive statistics. The analyzed data results were used to make modifications to the key word/phrase communication tool. Describing the current state of communication and creating a relevant modification to that standard will help to expand tele-ICU nurses' understanding of the phenomenon of communication.

Frameworks

Multiple theories and conceptual models were applied in order to support and guide this project. The relational coordination theory (RCT; Gittell, 2002, 2011; Gittell, Godfrey, & Thistlethwaite, 2013) was the primary communication theory I used to gain insight into which aspects of communication are most important to the creation of successful communication. This theory, described in more detail in Section 2, was created by Jody Hoffer Gittell (2002, 2011; Gittell et al., 2013), an expert in management and social policy, and has been applied in a great many health care settings. Proving especially successful in those settings where there is interdependent work, the RCT proposes that this work is most effectively achieved when there are clear goals, mutual respect, and effective communication (Gittell, 2002). In addition to this guiding theory, I

used the Iowa model of research-based practice (White & Dudley-Brown, 2012) and the diffusion of innovation theory (Hodges & Videto, 2011) to direct this application of evidence to practice. Both models, explained more thoroughly in Section 2, will serve as a framework to assist throughout the project to ensure successful interventions are selected and implemented.

Definition of Terms

The following italicized words or phrases are defined for the purposes of this DNP project.

Intensive care unit (ICU): The ICU is the location of the highest acuity and critically ill patients within the hospital.

Tele-ICU: Networked audio-visual computer systems and providers that create a foundation of collaborative care for the critically ill. These services complement existing ICU resources (ATA, 2014).

Tele-ICU nursing: Critical care nursing practiced over a distance using telecommunication technology.

Telemedicine: The broad term, used interchangeably with *telehealth*, is the use of medical information exchanged from one site to another via electronic communication. Telemedicine includes one- and two-way video, e-mail, smart phones, electronic medical records, and other wireless telecommunication technology (ATA, 2014).

Telenursing: The practice of nursing over a distance from a remote location using audio-visual equipment and information technology (American Association of Critical-Care Nurses, 2013).

Assumptions

This DNP project had relied on a number of assumptions from the current literature surrounding communication, coordination, and collaboration. These assumptions include the following:

- The notion that the knowledge and attitudes of the tele-ICU nurse will be accepting of the recommendations made in the communication tool (Hodges & Videto, 2011).
- The idea that structured, clear, concise communication will improve the sending and receiving of information (Beckett & Kipnis, 2009).
- The concept that improved communication will strengthen the relationship and collaboration between nursing groups (Meester, Verpuy, Monsieurs, & Bogaert, 2013).
- The premise that improved collaboration will enrich the quality of care provided to the patient, and will reinforce the importance of the tele-ICU's cost-saving, quality approach to ICU care. (American Association of Critical-Care Nurses, 2013).

Implications

The current health care environment is very dynamic, and practitioners are committed to focusing on both the cost and the quality of health care. This focus poses a significant challenge to all members of the health care community, as they must consider the options of doing more with less or redesigning their approaches to the delivery of care. The experience and expertise of the ICU nurse is subject to the same naiveté and

shortages as many departments in the acute care setting (Ulrich, Lavedero, Woods, & Early, 2014). Improving not only the number, but also the quality of the ICU nursing staff, appears to be a notable obligation but not an easily obtainable goal.

Recently, many alternative strategies have been employed to optimize patient care, outcomes, and personnel resources. Through the use of telemedicine, the undersupported, inexperienced ICU nurse has an experienced care delivery partner available to aid in the decision making and clinical care of the patient. This remote partner also has the benefit of software that includes clinical decision support and additional time to focus his or her attention on quality measures and documentation. This new practice elevates the standard of nursing care delivered in even the highest acuity ICU, increasing the satisfaction of the nursing staff as well as the patient (American Association of Critical-Care Nurses, 2013).

Improving the manner in which the remote and local nursing partners communicate information will have significant consequences for the coordination and collaboration between these two locations. The encouragement of team communication, a sense of interdependence, and joint decision-making is essential to the professional nursing role (Apker, Propp, Ford, & Hofmeister, 2006). This project may be a catalyst for the creation of skills and methods by which the professional tele-ICU nurse can optimize his or her communication and, therefore, his or her contribution to the telemedicine platform.

Scope and Delimitations

The scope of this project is communication techniques and/or patterns utilized by the tele-ICU nurses in their interactions with hospital-based nursing staff at a distance. This project does not specifically address the communication of the local ICU staff. However, as a consequence of improved message delivery, some concurrent effects on communication may be noted in this population. The single site and small population size from which data were collected for the creation of the key word/phrase communication tool may minimize the generalizability of the tool. Distributing the newly developed key word/phrase communication tool among local experts is aimed at resolving this limitation. This project will help eliminate the trial-and-error method of communication refinement that tele-ICU nurses must rely on currently, lessening the degree of miscommunication for these nurses.

Limitations

For the purpose of this DNP project, I anticipated the following would be limitations:

- The small expert population in which to conduct the content validation portion of the project
- Underestimation of the time requirements for the experts to review the developed key word/phrase communication tool
- Underestimation of time requirements for the experts to complete the 10 Likert-style questions in the evaluation survey

Significance

Tele-ICU nursing is a subspecialty of nursing that is still in its infancy. The American Association of Critical-Care Nurses and the ATA have been established as leading organizations and have created guidelines and recommendations for this nursing specialty. In these documents, they urged inquiry and the development of substantial research evidence to continue to develop this practice (American Association of Critical-Care Nurses, 2013). The rapidly changing and diverse nature of tele-ICU nursing practice requires nurses to be experienced, deft, and collaborative in order to create the finest environments and models for advancing the practice (American Association of Critical-Care Nurses, 2013). Embarking on a DNP project that focuses on establishing recommendations for prime communication techniques will enhance the current knowledge of the fundamental components of telenursing communication. It will contribute to the development of practice standards for this emerging nursing specialty.

There is literature to support the importance of clear communication, the role that miscommunication plays in medical error, and the use of communication tools to improve communication (Beckett & Kipnis, 2009). However, there is little evidence of the application of these techniques in the tele-ICU nursing environment. There is a gap in existing research literature on the communication techniques needed to optimize the delicate tele-ICU nursing exchanges, providing an opportunity to expand on existing literature and apply evidence in a new and innovative manner. The DNP project's aim was to support the proven need for communication and expand on the existing literature. The literature has shown communication tools to be helpful in filling the gap of research

and evidence in the immature subspecialty of tele-ICU nursing and strengthening the tele-nursing foundations of practice (Meester et al., 2013).

Summary

Regardless of the application or setting, nurses will find themselves as the backbone of communication. With this project, I aimed to address this foundational component of nursing by creating a content-validated key word/phrase communication tool. Tools such as this serve to circumvent the trial-and-error course that is often associated with communication and may lead the tele-ICU nurse to unimpeded, collaborative, communication. In its completion, this project could contribute to the nominal amount of research on existing literature of communication in the tele-ICU environment, and will serve to expand existing knowledge of tele-ICU nursing practice standards and guidelines. It also attempts to provide significant communication skill-building techniques for this evolving nursing specialty. As the health care environment changes and technology is leveraged, it becomes the responsibility of the DNP-prepared nurse to develop and evaluate current care delivery approaches and anticipate the needs of the patient population and the nursing role (Terry, 2012).

Section 2: Review of Literature and Theoretical and Conceptual Framework

Introduction

A literature search was done to gain insight into multiple aspects of this project. It was important to form a comprehensive understanding of the telemedicine platform because this would provide the context and the environment for which this project has the greatest implication. Standards and practices for tele-ICU nursing were sought to establish baseline knowledge of existing expectations, skills, and knowledge necessary for this subspecialty of nursing. Finally, existing literature regarding communication was reviewed. Emphasis was placed on research that demonstrated a use of communication tools and scripting and essential components of successful communication. Findings led to a plethora of information with which to establish the premise of this project.

Literature Search Strategy

Electronic data sources searched for evidence included Ovid Nursing Journal Full Text, CINAHL, Medline, PubMed, ScienceDirect, the Cochran Library, and the Joanne Briggs Institute. Key words utilized in the search were *telemedicine, nursing, tele-ICU, telenursing, communication, collaboration, coordination, SBAR, teamwork, barriers,* and *quality*. The search revealed a number of articles that provided expert opinion and basic knowledge. Two level IV practice standard references from expert opinion in tele-nursing, two III B quasi-experimental designed studies, and 11 level IV expert opinion and clinical experience articles were identified. A number of complementary articles were identified, examining and providing information on the fundamentals of communication and communication theory.

Conceptual Models

The Iowa model of research-based practice is the evidence-based practice model that I have used to support the completion of this project. This simple decision-making algorithm model supports the transformation of evidence into action, starting with the identification of triggers (White & Dudley-Brown, 2012). Relying on the critical thinking and decision-making skills of the practitioner, this model aligns well with the skills of the doctoral-prepared nurse. The Iowa model has been used as an essential framework for the identification of needs based on the national agencies standards and guidelines, including those published by the ATA and the AACN (American Association of Critical-Care Nurses, 2013; ATA, 2014). Synthesizing current literature and research on the topic of communication and communication tools has led me to propose the implementation of similar techniques within the tele-ICU environment. This model will be considered fully applied when implementation of the pilot study, change in practice, and an evaluation of those changes are complete.

As a complement to the evidence-based practice model, the diffusion of innovation theory will also be utilized to guide the implementation stage of the project. This theory offers explanation and guidance on the way in which new ideas and practices are disseminated throughout a population (Hodges & Videto, 2011). Components of this theory will be important to consider when implementing the communication tool. It will be equally important to determine the compatibility of the tool with the existing values and practices in the tele-ICU environment, the complexity of the tool, and the observability or ease of measuring the projects results (Hodges & Videto, 2011).

Theoretical Framework

I chose RCT (Gittell, 2002, 2011; Gittell et al., 2013) as the primary communication theory on which the project's communication tools were based. This theory by Jody Hoffer Gittell focuses on relationships and coordination. It emphasizes four dimensions of communication including its frequency, timeliness, accuracy, and problem solving nature. It posits that communication possessing these key components will lead to coordination between two groups. Gittell applied this theory in other health care settings and also developed a model for organization change aimed at providing the best possible care through the optimal communication of all persons involved (Gittell et al., 2013). Communication principles coupled with the awareness that participants must share knowledge, understanding, mutual respect, and goals can lead to coordinated and collaborative care (Gittell, 2002).

In the development of the communication tool, I considered the use of keyword phrases that align the spoken words with the theory's concept of mutual respect. Avoiding words that place blame or assign a sense of culpability also supported the component of the theory that communication must be problem solving (Gittell, 2002). Focusing on the wellbeing of the patient and the tasks at hand will encourage collaboration and problem-solving communication. In order to achieve timely communication, another essential component of the RCT, the episodes in which the tele-ICU nurses interact with the local nursing staff will need to be without delay and specific to the event that is occurring. This consideration is especially important because each

environment has particular and often differing needs, contributing to a conflict of priorities and making communication difficult and untimely.

Specific Literature

Telemedicine

Research has demonstrated the growth of information technology, the need for specialized ICU care, and the advancements in telemedicine, specifically tele-ICU initiatives. These initiatives have been further spurred by large-scale quality organizations such as Centers for Medicare/Medicaid Services (CMS), Institute of Health Care Improvement (IHI), and the Healthcare Infection Control Practices Advisory Committee (HICPAC). These organizations set very high standards requiring excellence in hospital care. In 2000, a pivotal article by the IOM illuminated medical errors and safety concerns with recommendations to improve the quality of patient care (Kohn, Corrigan, & Donaldson, 2000). Intelligent, patient-centered, future-oriented tele-ICU programs have the potential to impact legislation regarding reimbursement, advance the standards and unified credentialing processes, affect hospital ratings, and improve satisfaction scores. Telemedicine can leverage expertise across a greater population, improving access to quality and evidenced-based care regardless of the geographical location. These programs allow expert nurses to view and address data over the depth of time, safeguarding both the ICU staff, as well as the patient, against potential hazards and pitfalls. Use of this information technology application improves not only the quality and standard of care for the patient, but also the quality of practice for the onsite caregiver teams (ATA, 2014). Focusing the efforts of the DNP-prepared nurse on enhancing this

growing resource is both necessary and crucial to the ongoing success of health care in the United States.

Communication

Like all nursing practice, tele-ICU nursing must be built on a firm foundation of effective communication in order to reap its full potential. These nurses must be both able and willing to communicate effectively, giving consideration to every aspect of their interactions from attitude to content (Goran, 2012). There exists significant literature supporting the necessity of effective communication as a core component of all nursing practice. For example, "National Patient Safety Goals", set by the Joint Commission (2012), and the IOM's (2006) "Preventing Medication Errors: Quality Chasm Series" related miscommunication as a principal contributor to medical errors. Health care professionals have recognized that in addition to advanced critical thinking skills and expert ICU nursing knowledge, the tele-ICU nurse must also possess exceptional communication skills to surpass the unique challenges of remote communication (American Association of Critical-Care Nurses, 2013).

Current Tools

Communication tools such as the Situation, Background, Assessment, and Recommendation (SBAR) tool have been widely used by medical professionals in traditional health care settings, and this has shown them to be useful in providing a framework for communication aimed at thwarting many common pitfalls. These pitfalls include attempts to exchange repetitive, unfocused, and overly detailed information (Meester et al., 2013). The use of tools such as SBAR can enhance communication,

teamwork, and collaboration, improving both the safety and quality of care (Bekett & Kipnis, 2009). This tool outlines and organizes information, provides the content in a clear and concise manner, and better aligns the expectations of both the sender and receiver of the information. Other acronym tools that foster communication, such as AIDET (acknowledge, introduce, duration, explanation, thank you), are examples of using key words at key times, and have been encouraged by organizations such as the Studor Group (2015) as an efficient method of communication. Even the authors of the best-selling book *Crucial Conversations* have developed a tool with which to approach difficult communications (Patterson, Grenny, McMillan, & Switzler, 2002). The CRIB (commit, recognize, invent, and brainstorm) approach to communication attempts to realign communication when it is working at cross-purposes and create dialog that will lead to mutual goals (Patterson et al., 2002). This literature exemplifies the effectiveness of communication tools in general and supports expanding on this concept in the creation of a tele-ICU specific tool.

Background and Context

The site chosen for this project is a large telemedicine department associated with a sizable tertiary care medical center. The telemedicine offered by this location is primarily tele-ICU, which is delivered as a continuous care model, providing care and monitoring without interruption 24 hours a day, seven days a week (Personal Communication, Anita Witzke, September, 2014). This well-established department provides tele-ICU services to 11 locations including a number of sites outside of the

hospital system. This department is a recognized leader in the tele-ICU environment and is representative of the tele-ICU centers across the United States.

My relationship with this location and these persons is one of collegiality as this site is also the place of practicum completion. Relationships with staff are peripheral without significant personal interactions, allowing this researcher to remain unbiased during the interviewing phases of the project. When performing the role of a Critical-Care Clinical Nurse Specialist (CCNS), I first became interested in the tele-ICU application and its ability to support understaffed, high acuity ICUs. Consequently, the telemedicine environment was chosen as a practicum focus because it is believed that this approach to care delivery has many applications and can make significant contributions to the future of health care.

Summary and Conclusion

The literature soundly concludes the importance of communication in the delivery of quality care and the elimination of medical errors, and that the standardization of communication enhances understanding and removes barriers. Recent landmark articles call for the investigation of best practices across settings and inclusive of a variety of circumstances to ensure the highest quality of care is provided (IOM, 2006). Conclusions can also be made that tele-ICU nursing has experienced exponential growth over the last decade, when compared to other traditional nursing roles, making the expansion of evidence-based practice applications and role development appealing (American Association of Critical-Care Nurses, 2013). Finally, the immaturity of this subspecialty of

nursing creates a perfect stage for the application of scholarship and leadership skills aptly complementing the expectations of a doctoral-prepared nurse (Terry, 2012).

Section 3: Methodology

Introduction

Telemedicine literature has demonstrated the growth of information technology and the advancements in telemedicine, specifically tele-ICU initiatives. Tools such as the one developed for this project will serve to circumvent the trial-and-error course often associated with communication and it may lead tele-ICU nurses to unimpeded, collaborative communication. In its completion, this project will contribute to the nominal amount of existing literature of communication in the tele-ICU environment and will serve to expand existing knowledge of tele-ICU nursing practice and communication aids.

Approach and Rationale

The primary purpose of this DNP project was to develop and validate the content of a new key word/phrase communication tool and to identify points of communication that are vulnerable and susceptible to error in the tele-ICU environment. The second purpose was to plan a postgraduation pilot study, which would apply the new key word/phrase communication tool to existing communication.

- There will be no patient involvement in the development or content validation of the key word/phrase communication tool. IRB approval will be obtained from Walden University prior to any data collection.

Project Design

The tool creation phase of the project included informal observations and discussion with a convenience sample of 11 tele-ICU staff nurses, employed at my

practicum site. The discussions and observations were made over a 3-week period and focused on both the successful and unsuccessful communication techniques employed during their interactions with local ICU staff. The following discussion prompts were used to increase the structure and consistency of the discussions and thereby increase the validity and reliability of the findings.

1. What previous direction have you been given regarding how to create successful communication?
2. Can you remember a situation in which you felt your word selection blocked or hindered communication with the local staff? If so what words did you use?
3. Can you remember a situation in which you felt your word selection nurtured or fostered communication with the local staff? If so what words did you use?
4. Describe your experience when communication is difficult, how do you relay needed information?
5. What situational components have you experienced that have altered the success of your communication?

Formative feedback from this group allowed me to identify the episode of communication for which the tool was designed. It also provided me with suggested communication elements that ensure successful interactions and those that they felt frequently led to misunderstanding. These findings were taken into consideration during tool conception. As discussed earlier in this paper, acronym-style communication tools have proven to be effective in framing communication; therefore, this format was chosen as the foundation of the new tool's organization (Beckett & Kipnis, 2009).

For the validation phase of this project, 10 experts were asked to evaluate the newly developed key word/phrase communication tool. Via e-mail, they were provided with the tool, a summary of this project premise, and a survey with 10 Likert-style questions. They were provided ample time to review the tool and complete the survey. The survey also included a place for the experts to add further comments or recommendations if they desired. Descriptive statistics were used to analyze the 10-question survey. The results of the analysis were reviewed and revisions to the key word/phrase communication tool were made.

Population

The tele-ICU tool development group included voluntary participation and represented a small sample of participants who had converted their practice from the local ICU setting to the tele-ICU environment. The average years of overall nursing experience among this group was 10 years, and the average length of experience in the tele-nursing role was 3 years. Fifty percent of these nurses had achieved certification in their specialty. There was no age or gender specification for this population. This group was considered key stakeholders for this project, as they were representative of the staff that would use the tool once created.

Ten national experts were identified for content validation of the newly developed key word/phrase communication tool. These experts were recommended members of a professional tele-ICU network that had been established by my preceptor. Initial contact was made through the network via an e-mail from my preceptor, who introduced the project and me as the project developer. Twenty contacts responded as being able to

volunteer their time. A selective sampling technique was utilized to identify those that held leadership positions within the tele-ICU environment, represented a variety of geographical locations, and possessed minimum of a master's degree. These criteria were chosen to ensure a minimal level of experience and understanding of the tele-ICU environment and to increase the geographical diversity of the expert group avoiding regional biases. Participation in the tool validation was voluntary, with members participating by their own choice, and resulted in a final participation group of nine of the 10 identified experts.

Data Collection and Analysis

Notes were taken openly during the informal discussions and observations with the key stakeholder tele-ICU group. Following the data collection time of 3 weeks, I appraised the notes, organizing them by frequency of responses and reviewed them to identify themes or repetitive content (Grove et al., 2013). This process resulted in a summary that I used in combination with the RCT to guide the creation of tool elements. Finally, after immersion in the data, I identified the crucial point of communication that the tool would target.

For the development and content validation phase of this DNP project, a 10-question Likert scale evaluation survey was developed, utilizing a selection of pre-established response anchors published by Vagias (2006). I designed the questions for the survey to elicit response from the group regarding the goals of the project (creation of a necessary, relevant, and applicable tool) and vetted the tool with my preceptor and a DNP

student colleague to ensure clarity. The identified experts reviewed and evaluated the newly developed key word/phrase communication tool and completed the survey.

For the development and content validation of the key word/phrase communication tool, descriptive analysis was used to analyze the expert evaluation data collected on the 10-question Likert scale survey. Analysis of written responses was descriptive, and the results were used to make modifications to the tool including simplification of word choice within the tool and providing examples of recommended word selection. The results of the 5-point Likert scale were displayed by both range and mode, demonstrating a favorable evaluation of the tool. Completion of this process resulted in a validated communication tool for use in the proposed pilot study recommended to the organization.

Evaluation

An evaluation plan for key word/phrase communication tool development/content validation was as follows:

1. Vetting of the tool among nine tele-ICU experts.
2. A 10-question Likert scale survey was distributed to the experts in order to elicit feedback regarding the necessity, relevance, and applicability of the tool.

An evaluation plan for a recommended pilot study included the following:

1. Timed interviews and observation of tele-ICU/local ICU staff communication to determine if satisfaction with the tool is experienced by the tele-ICU staff and is sustainable.

2. Observations and interviews will be conducted to determine the usability of the tool, assessing for the ease of learning and applying the tool.
3. Feasibility of the tool will be evaluated based on the overall successful implementation of the tool.

Summary

Particular attention should be paid to communication and the aspects of collaborative relationships that exist among the tele-ICU team members and local ICU staff (American Association of Critical-Care Nurses, 2013). The application of evidence to optimize communication between these two groups is a significant step to meeting tele-nursing practice standards. Improving the essential components of communication (timing, accuracy, frequency, and its problem solving nature) should improve the coordination and relationships among the interdependent groups (Gittell, 2002).

The development and content validation of the key word/phrase communication tool included nine identified experts reviewing and evaluating the tool using a 10-question Likert scale survey. Data collected on these surveys was analyzed using descriptive analysis.

Revision of current communication practices can eliminate the trial-and-error method traditionally used to create communication patterns and expedite the process leading to improved relationships and coordination of care (Gittell, 2011). This section of the DNP clinical project paper examined the approaches and methods that were utilized in the development and content validation of the key word/phrase communication tool.

Section 4: Findings, Discussion, and Implications

Introduction

The microlevel purpose of this DNP project was to create a communication tool to address the most vulnerable points of communication as the tele-ICU staff interacts with local ICUs. On the macrolevel, my intention with this project was to develop a tool that would cultivate the communication and collaboration techniques of the tele-ICU staff, thereby improving the overall contributions of the tele-ICU nursing service. The analysis of existing communication literature, evidence of similarly styled tools, and the staff's formative feedback allowed for the identification of the most vulnerable episodes of communication and the creation of an evidence-based tool.

Many vulnerable episodes of communication were identified through the use of both observations and discussions with the tele-ICU nursing staff. Staff feedback and observation discoveries were acquired, evaluated, and summarized, and a final communication episode was selected for the focus of this project. This process led me to determine that when the tele-ICU nurse addressed the identification of an error made by the local ICU nurse, the tele-ICU nurses displayed the least self-confidence and had the greatest variations in practice. Consequently, the communication tool was designed to address this most vulnerable point of communication.

Once the tool was created, an evaluation survey with Likert-style questions was designed, and this accompanied the communication tool along with a summary of the project premise. This package was distributed to 10 tele-ICU leaders across the United States, each considered a content expert as a consequence of his or her leadership role.

The results of the survey served as a summative evaluation to determine if this DNP project met its intended goal. Results of written comments as well as Likert scale results were summarized, and consequential feedback was incorporated into the final design of the communication tool. Recommendations from the experts that were incorporated in the final version of the tool included a simplification of the language within the tool, changing the word *culpability* to *blame* and the phrase *in concert with* to *along with*. These recommendations were embraced in order to increase the understanding and usability of the tool. The experts also recommended that examples of preferred word choice be provided. Therefore, the example, "Hi *X* this is *Y* from the tele-ICU. I am working with you to take care of Mr./Ms./Mrs. *Z* today" was added as a preferred way in which to professionally acknowledge staff. Additional word choice examples were added to the Identify step, providing phrases that will assist the user to assume some of the responsibility.

Implementation

In accordance with the Iowa model of research-based practice, project and evaluation plans were employed. Planning allowed me to ensure that the DNP project remained focused and ultimately achieved the desired ends (Hodges & Videto, 2011). Figure 2 illustrates the process plan from trigger identification to future postgraduation pilot study recommendations.

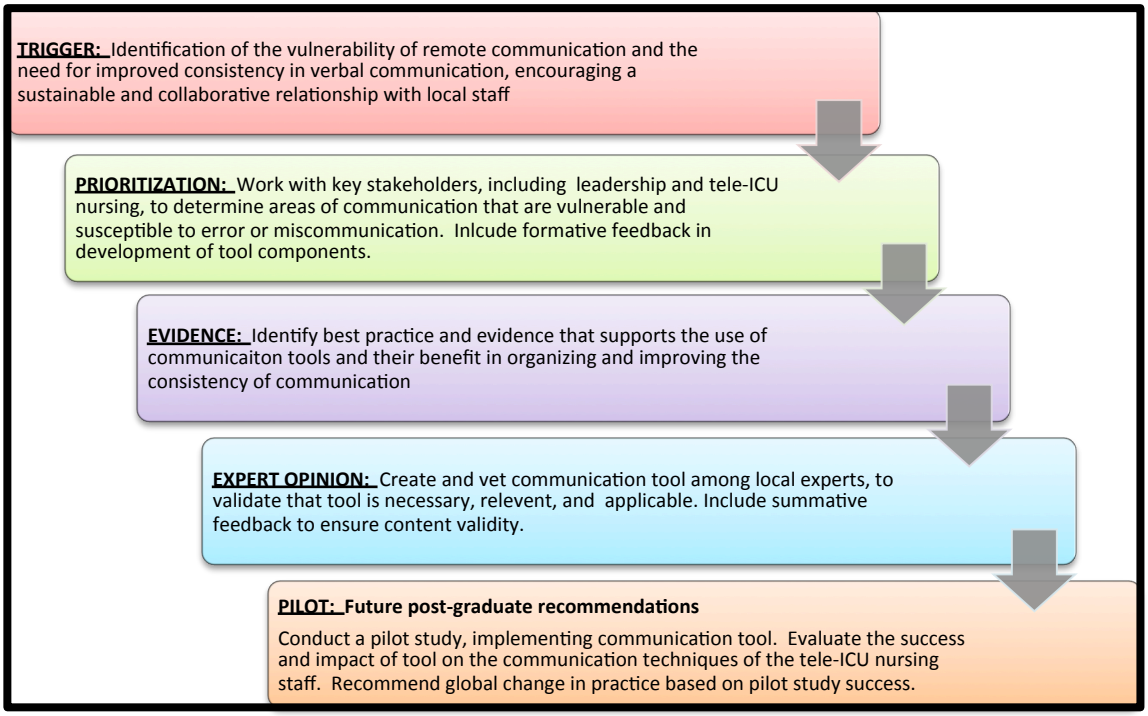

Figure 2. Visualization of DNP project practice change based on Iowa model. Adapted from the Iowa model from *Translation of Evidence Into Nursing and Health Care Practice*, by K. M. White and S. Dudley-Brown, 2012, New York, NY: Springer Jones & Bartlett Learning.

Initially the tele-ICU staff members were engaged to attain information and detail regarding the microsystem of the tele-ICU. This allowed the opportunity to connect evidence to the clinician's work environment (White & Dudley-Brown, 2012). The information and formative feedback provided during this time was crucial to the development of an applicable and relevant tool. Using open-ended discussion questions, coupled with observations of current communication practices, afforded the opportunity to identify similar communication patterns. Misaligned priorities, such as needing to complete quality rounds when the local staff needs to complete a dressing change or other patient care, created the principal barriers to communication between the groups.

Similarly, the miscommunication occurred when tele-ICU staff presented themselves as "watching" or "checking" on local staff. This behavior led to "finger pointing" and a uncollaborative style. Although there were a number of vulnerable communication exchanges noted, the most predominant events were when the tele-ICU nurse identified an error within the local ICU nurse's workflow. Significant benefits of the tele-ICU service include the ability to perform continuous rounds, critically evaluate alerts, and complete quality checks (ATA, 2014). Unencumbered by the physical demands of patient care and the distractions of the busy care environment, the tele-ICU has the ability to identify practice variances to a great degree. This "safety net" may include the identification of errors including, but not limited to, the wrong medication administration, ventilator settings, or assessment findings/documentation. Goran and Mullen-Fortino (2012) described the tele-ICU service as being able to serve as a double check and a viable error prevention service; however, to reap the full benefit of the service without violating the trust or cooperation of the local ICU, the tele-ICU nurse must approach the error identification with clear and collaborative communication. Therefore, to ensure the full benefits of quality and safety, I chose to address this vulnerable point of communication.

Creation of the Communication Tool

A-Acknowledge **V**-Verify **O**-Observe **I**-Identify **D**-Discuss

The acronym *AVOID* (See Appendix A) was chosen as the pneumonic guide for this tool to reflect the goal of avoiding medical errors, as outlined in the IOM's (2006) "Preventing Medication Errors: Quality Chasm Series." Each letter chosen for this tool

reflected the results of the informal discussions and observations made within the tele-ICU and represent the key stakeholders' input as well as the significant components of the RCT by Gittell (2002).

The letter A stands for *acknowledge* and requires the tele-ICU nurse to begin the conversation with a professional recognition of the staff member with whom he or she will be interacting. This demonstration of mutual respect is consistent with a primary concept outlined by the RCT (Gittell, 2002). Tele-ICU nurses reported that by acknowledging the local ICU nurse they created a partnership and cooperative mood.

The next step, V, includes the crucial effort to ensure the timeliness and accuracy of information by *verifying* that, at the time of this incident, the tele-ICU nurse has the most recent patient information and orders. Gittell (2002) described both timeliness and accuracy as vital aspects of successful communication. Feedback provided by staff regarding workflow suggested that there may be instances where a verbal order had just been given at the bedside, and the tele-ICU nurse's information was not entirely accurate. Verification will prevent assumptions being made and miscommunication from occurring. This crucial step may lead to clarification and error resolution. If the error is corrected through simple verification, the use of the tool may be concluded at this point in the conversation. However, if a resolution is not attained, it will be necessary to continue applying the steps of the tool.

Once all information is confirmed, the user is directed to continue the collaborative approach, reminding the tele-ICU nurse to make an *observation* in concert with the local staff. Observations that are consistent with current workflow patterns and

can best complete this step include rounding in the room with the camera and staff member or reading through the orders, chart, and results together. During this collaborative process, it is likely that the local staff member will self-identify the error, avoiding confrontation or blame, which are frequently communication blockers (Gittell, 2002). During previous discussions, the tele-ICU nurses endorsed the use of virtual rounds as an important collaborative step to error resolution.

Having completed the event-related observations, and regardless of self-acknowledgement by the local staff member, the tele-ICU nurse must *identify* the variation in a collaborative manner avoiding assigning a sense of culpability. Formative feedback suggested that by identifying the error together there was a shared ownership of both the variance and the solution, mirroring the problem-solving nature of successful communication (Gittell, 2006). The final step to the tool is for the tele-ICU nurse to encourage a *discussion* or debriefing. This action would include goals for resolution of the variance, documentation of the event, and planning to avoid future occurrences.

It is the recommendation of this project that the tool be referred to at the point in which the tele-ICU nurse identifies an error, prior to making contact with the local staff, and be utilized to guide the subsequent interaction from beginning to resolution. However, more specific workflow considerations including the exact timing of tool implementation will be sought in the proposed second-stage pilot study.

The overall goal of this project was to create an evidence-based script on which the tele-ICU nurse can rely to direct appropriate, collaborative communication. Guiding this point of vulnerable communication in a concise, replicable, and evidence-based

manner are in line with the requests made in 1999 by the IOM report "To Err is Human." The tool is an example of improving process and collaboration: "making it harder for individual to do something wrong and easier for them to do it right" (IOM, 1999).

Evaluation

As implied in the previous discussion, both formative and summative evaluation methods were included as essential elements of project completion. Evaluation outcomes including discussion survey results, informed me of information necessary to develop and strengthen the tool (Hodges & Videto, 2011). The formative feedback process began with the key stakeholder, tele-ICU nursing group. They participated in interviews and conversations regarding vulnerable communication episodes, their previous knowledge about communication techniques, and types of barriers to communication they commonly experienced. The results of this evaluation process are exhibited in the preliminary AVOID tool design. Limitations of this evaluation process were identified, including the size and diversity of the feedback group and the time allotted to collect feedback. To complete the project in a judicious manner, with resources limited to the practicum site, the key stakeholder group was neither of ideal size nor was the duration of feedback collection optimal.

The second and final evaluation phase was completed by subject matter experts, following the creation of the AVOID tool. Evaluation of this stage provided me with the information necessary to finalize the AVOID tool, verifying that the communication tool developed during this DNP project resulted in the intended product (Hodges & Videto, 2011). This summative evaluation validated that the final product was necessary,

relevant, and applicable to the tele-ICU environment, with results depicted in the figure below. The summative feedback group was of a larger size and diversity. The panel of ten content experts was selected and included tele-ICU nursing program department leaders from tele-ICU centers across the U.S. Nine of the ten experts selected completed the survey, with only one of those contacted not responding. Once the validation survey results were analyzed, the tool was considered complete and validated.

Discussion

In order to establish the successful completion of this project, it was essential to ascertain if the objectives set forth for tool development were met. The fidelity of this project was measured in the ability to have completed the project as planned (Hodges & Videto, 2011). With respect to this DNP project, it was necessary to determine if the communication tool that was created was necessary, relevant, and applicable. The panel of content experts, all of which have a minimum of a master degree, volunteered their time. This diverse national group represented eight states and included nine tele-ICU program directors.

Survey Findings

Table 1

Expert Panel Likert-Scale Questionnaire Results

Question	Likert-Scale	Range	Element
Would you agree that communication, which takes place in regards to the identification of an error in the local ICU, is a leading cause of miscommunication?	1-Very untrue of what I see in practice 2-Untrue of what I see in practice 3-Neutral 4-True of what I see in practice 5-Very true of what I see in practice	1=2 responses 2=4 responses 3=2 responses 4=0 responses 5=1 response	Necessity
How would you describe the ease of use for this acronym/pneumonic style tool?	1-Very difficult 2-Difficult 3-Niether difficult or easy 4-Easy 5-Very easy	1=0 responses 2=0 responses 3=0 responses 4=6 responses 5=3 responses	Applicability
Would you agree that the tool is concise and would be quick to use?	1-Stronly disagree 2-Disagree 3-Niether agree or disagree 4-Agree 5-Strongly agree	1=0 responses 2=1 response 3=0 responses 4=5 responses 5=3 responses	Applicability
The tool specifically addresses the difficult communication practice. (Identification and correction of an error)	1-Stronly disagree 2-Disagree 3-Niether agree or disagree 4-Agree 5-Strongly agree	1=0 responses 2=1 response 3=0 responses 4=7 responses 5=1 response	Relevance
Do you agree that the tool clearly guides the user through the communication processes?	1-Stronly disagree 2-Disagree 3-Niether agree or disagree 4-Agree 5-Strongly agree	1=0 responses 2=1 response 3=0 responses 4=7 responses 5=1 response	Relevance
Do you agree that the tool will safely resolve the identified error?	1-Stronly disagree 2-Disagree 3-Niether agree or disagree 4-Agree 5-Strongly agree	1=0 responses 2=0 responses 3=2 responses 4=6 responses 5=1 response	Applicability
Are the components of the tool consistent with components of collaborative communication described by the Relational Coordination Theory?	1-Stronly inconsistent 2-Inconsistent 3-Niether consistent or inconsistent 4-Consistent 5-Strongly consistent	1=0 responses 2=0 responses 3=0 responses 4=5 responses 5=4 responses	Relevance

(table continues)

Question	Likert-Scale	Range	Element
How helpful do you feel the tool will be in avoiding miscommunication?	1-Not at all helpful 2-Slighly helpful 3-Somewhat helpful 4-Very helpful 5-Extremely helpful	1=0 responses 2=1 response 3=4 responses 4=3 responses 5=1 response	Relevance
Would you recommend the use of this communication tool to your staff to fill an existing gap in communication resources?	1-Would not recommend 2-May or may not recommend 3-Recommend with modification 4-Would consider 5-Definetly recommend	1=0 responses 2=1 response 3=0 responses 4=4 responses 5=4 responses	Necessity
How likely would you be to support the use of this tool to improve the collaboration between the tele-ICU and local staff?	1-Extremely unlikely 2-Unlikley 3-Neutral 4-Likely 5-Extremely likely	1=0 responses 2=0 responses 3=2 responses 4=4 responses 5=3 responses	Necessity

Necessity

The experts were asked three questions including a clarification of how they would rank miscommunication related to error identification to establish the need for the tool. The results of this question demonstrated error identification events in the opinion of the reviewers to be "true to what they have witnessed in practice." The survey demonstrates that the majority of experts identified that there is a need for the tool and would recommend the use of this tool to fill the existing gap in communication resources. Furthermore, they are likely to use the tool as a way to improve collaboration with local staff. A perceived need, as defined by Kettner, Moroney, and Martin (2013), is that which an individual feels or believes a need to be. Therefore, it can be concluded through the content expert's survey results that there is a considerable perceived need for this acronym style communication tool.

Relevance

Relevance, defined by Merriam Webster (2015), is material that satisfies the needs of the user. Relevance was determined through the survey by gathering the experts'

opinions of whether or not the tool specifically addressed a difficult communication practice, guided the user through that process, and if the theoretically based tool would be helpful in avoiding miscommunication. Analysis of the results demonstrates that the majority of the experts agreed the tool was relevant to the practice of communication and the prevention of miscommunication.

Applicability

Finally, for the purpose of this project, applicability was defined as the suitability of the tool to being applied or utilized (Merriam Webster, 2015). The applicability of the tool was determined by survey questions that were created to elicit the expert's feedback on whether the tool was concise, clear, and simple to use. Again, the majority of the experts reported the tool to be applicable and easy to understand and utilize. In conclusion, the validation objectives have been met, and I can resolve that the outcome of this DNP project was the creation of a relevant, applicable, and necessary communication tool.

Implications

This project implies that the creation and use of an acronym style communication tool will be a reasonable means by which to prevent error, resolve miscommunication, and improve intradepartmental collaboration. By improving the manner in which information is communicated between the remote and local nursing partners, and preventing the breakdown of communication, the collaborative benefits of the tele-ICU will be fully appreciated. These consequences will have significant effects on the coordination and collaboration of care between the two locations, improving both the

safety and quality of nursing care. Encouraging team communication, a sense of interdependence, and joint decision-making is essential to the professional nursing role (Apker et al., 2006).

Practice

The practice recommendation for a pilot study will involve implementation of the validated key word/phrase communication tool and give consideration to the evidence that collaboration and communication are essential elements in establishing quality care and safety (Beckett & Kipnis, 2009).

A qualitative research design will be best suited for the post-graduation implementation of a planned pilot study. The pilot study will compare the newly developed and validated key word/phrase communication tool with current communication practices. Communications will be tracked at varies intervals, those intervals will be determined at a later time. This design allows for the consideration of the main concept of the project. It also considers communication in the tele-ICU nursing environment, and the goal of understanding the essence of the unique nature of the communication that must exist in this nursing environment. The qualitative research approach allows for the investigation of the processes of communication within this distinctive setting rather than focusing on specific outcomes (Terry, 2012).

The tele-ICU nursing environment is relatively new and understudied. The inductive basis of qualitative research will allow for a study of data and subjects aimed at generating a new hypothesis rather than testing an existing one. In addition, the flexibility of this research approach is beneficial because it allows for adjustments in the study in

response to obstacles (Terry, 2012). This approach will enable the realistic description of how the tele-ICU nurses communicate in their unique environment. It will reveal new knowledge that may be applied or reproduced in a manner that is beneficial to the growth of this nursing environment.

The target population for the post-graduate proposed pilot study will consist of staff nurses in the tele-ICU environment. Convenience sampling will be employed selecting all members from a selected tele-ICU site. This approach ensures the researcher that information rich and expert individuals are chosen. This subgroup of individuals should be representative of the larger population of tele-ICU nurses, and will be beneficial to the completion of the pilot study and the potential implication of those findings (Grove et al., 2013).

For the pilot study, the first step will be to identify the vulnerable point of communication for which the tool was designed. Once the newly created AVOID communication tool is implemented and utilized by the tele-ICU staff the researcher will make observations of the interactions, between the tele-ICU and local staff. Observations will be made without video recording to prevent alterations in behavior and avoid issues of confidentiality. The researcher will rely on note taking to record significant findings. The second main approach to data collection will include interviewing of staff eliciting their feedback regarding the use of the tool. Interview questions will be open ended in a semi-structured format to encourage conversation surrounding the topic of communication and structured communication. The researcher will complete both the

summarization and analysis of these interviews and observations to determine if the staff identifies improved communication through the use of the communication tool.

Policy

Tele-ICU nurses must employ skilled communication, effective decision-making, and true collaboration to enhance and foster relationships with the bedside multidisciplinary team. In doing so, they will create optimal outcomes for patients and families (American Association of Critical-Care Nurses, 2013). The work achieved in this project supports building strong communication techniques. The validation of the AVOID tool substantiates the goals of the project, the identification that there is currently a lack of communication resources and a realization that a change in practice may be required to sustain the maximum benefits of the tele-ICU service. In the future, policy may mandate the use of tools and guides to ensure communication is collaborative. The American Telemedicine Association (2014) stated that tele-ICU professionals should have a competency-based orientation that includes communication protocols, roles and responsibilities, and evidence-based practices. The proposed post-graduation pilot study may continue endorsement of the tool by examining improved guided communication in comparison with traditional methods that are already employed. Consequently, this tool may be of particular interest in the creation of communication guidelines and in the practice of orientating new staff to the tele-ICU environment; sharpening their technique in an expedited manner.

Research

In its completion, this project will contribute to the minimal quantity of existing literature concerning communication within the tele-ICU environment. The creation of this validated communication tool provides the resource necessary to conduct a pilot study comparing existing communication techniques with communications guided by the tool. In addition, results of this work will serve to expand existing knowledge of tele-ICU nursing practice standards and guidelines and may inspire further investigation of vulnerable communication events and, subsequently, the creation of additional communication tools. The creation of the AVOID communication tool and the proposed pilot study of the tool are consistent with the modern vision of nursing research: finding the best research evidence, applying that evidence in practice, and examining the outcomes (Grove et al., 2013).

Social Change

Transcending borders and bringing health care parity to all geographical and socio-economic regions is one of the magnificent benefits of the telemedicine platform. Creating an infrastructure of technology interwoven with the skills and expertise of the medical and nursing staff allows future health care programs a platform upon which to build resourceful, economic, and high-quality services. The creation of this communication tool is a first step to ensuring the cooperative union of the present and future models of health care delivery. Silverman (2015) advised that not all tele-ICU programs are the same, and that careful consideration should be given to adopting those programs that include effective collaboration, implementation of best practices,

adherence to well-defined protocols, and a shared commitment to improving patient care. The work conducted throughout this project is consistent with these recommendations and may be the catalyst for improved programs that are based firmly on communication and collaboration.

Analysis of Self

Scholar and Project Manager

The completion of the DNP project has allowed me to achieve scholarly elements consistent with Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice. These elements include a literature review, professional affiliation, and educational content development. As a scholar, support will be provided for the advancement of nursing practice through evidence and scholarship. The American Association of Colleges of Nursing (2006) defined scholarship in nursing as discovery, teaching, applications, and integration. Insights and opportunities gained through this DNP project experience may include the areas of publication, education, research, and consulting.

Project management emphasized the importance of determining the compatibility of the change with the existing values and practices and the complexity of the change (Hodges & Videto, 2011). The DNP graduates must possess expertise in quality improvement strategies and be skilled in creating and sustaining changes at the organizational and policy levels (American Association of Colleges of Nursing [AACN], 2006). As a leader, the most important qualities to possess and communicate are an attitude and behavior that is supportive and encouraging of the change. This project has

assisted in the development of these indispensable qualities and understanding that the desired outcome and the participation must be encouraged at all levels of the system. The scholar DNP must demonstrate an understanding of the design and redesign concept, communicating to staff at each echelon the circular philosophy of change embracing the evaluation/re-evaluation aspect of transformation.

Practitioner and Professional Development

As an advanced practice nurse, the DNP project completion has expanded personal skills and clinical knowledge surrounding communication, critical thinking, and collaboration. In accordance with the AACN (2006) Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking, the DNP journey has furthered the development of my leadership skills. Resulting in strengths that include the ability to mirror the style of leadership to the circumstances in which the skills are required (AACN, 2006). Successful completion of this program has allowed me to feel confident in the ability to implement, evaluate, and disseminate knowledge surrounding a project. Developing leadership skills has allowed for the effective application of scientific and evidence-based practice within the constructs of an organization or system. This ability will allow me to reach my full potential as a DNP clinician-scholar. Discovered through this process is the fact that it is essential to improve care in a manner that is consistent with existing constructs, but to also leverage knowledge to stretch and grow existing standards to accommodate change and evolution.

Summary

Unique aspects of the tele-ICU environment are both the result of, and influential to, the current communication practices. The fact that the tele-ICU nurse relies on audiovisual equipment instead of face-to-face interaction as their primary means of communication increases the requisite that their use of the spoken word is superior. By examining existing research on similar communication tools and their successful prevention of errors when applied in other health care settings, and by incorporating concepts from a collaborative communication theory. I was able to take the best existing evidence to create a tele-ICU nurse-driven communication tool. Formative feedback was obtained from the key stakeholder group of monitor side tele-ICU nursing staff to ensure the tool was relevant and addressed an area of communication that was vulnerable and fraught with error.

In conclusion, this project has successfully created the AVOID communication tool and obtained its validation from a group of tele-ICU nursing leaders considered to be content experts. Furthermore, the project recognizes the panel's professional opinion that there is a need for this tool styled to assist in guiding the communication required when their staff identifies an error in the local ICU. The expert group has validated that this tool is necessary, relevant, and applicable, meeting the objectives set forth by this project and evaluation plan. The next stage of this project, to be completed post-graduation, would be a pilot study in which the use of the validated tool would be compared with current traditional communication practices.

Section 5: Scholarly Product

Introduction

The scholarly product of this DNP project was the creation of a vetted and expertly validated acronym style communication tool for use by the tele-ICU nurse. Inspired by the gap in existing literature, the infancy of the tele-ICU specialty, and the potential for social change that this application of telemedicine provides, I embarked on the journey to project completion. Steps to completion included, identifying a specific need, establishing a process plan, pinpointing foundational theories, and incorporating both a formative and summative evaluation process (Kettner, Moroney, and Martin, 2013). In 2013, the American Association of Critical-Care Nurses called on nursing leaders to embrace the development of the tele-ICU practice and assist in the growth of the specialty. This project was planned and evaluated with that intent in mind while challenging and nurturing those skills that are vital to the doctorally-prepared nurse. My leadership, scholarship, and clinical practice skills have all been enhanced in parallel with project execution.

The purpose of this DNP project was to develop a keyword/phrase communication tool to assist the tele-ICU nurses with identified points of communication that are vulnerable and susceptible to error. The first objective of this project was to create a tool that would positively guide the spoken communication between the tele-ICU and local ICU staff, reducing errors presently found with current communication. Once

the preliminary tool was developed, the second objective of the project was to perform content validation.

The first phases of the project included immersion into the tele-ICU environment, identification of a clinical need, and establishment of a key stakeholder group. To establish a project premise and a plan that was feasible, I had to amass a greater understanding of the workflow and practice environment of the tele-ICU. Having identified the communication need, incorporated formative feedback of the stakeholder group, and developed a draft tool; the final validation could be sought from the expert panel. Nine experts participated in the tool validation by completing the Likert-style survey that was created. The results of this ten-question, five-point scale, were expressed by mode and demonstrated that the majority of experts believed the tool to be necessary, relevant, and applicable and would "consider" or "definitely recommend" this tool for use in their tele-ICU environment. Furthermore, the panel expressed that they were "likely" to utilize this tool as a means to improve their department's collaboration with local staff.

Recommendations for Future Study

This project completion serves as the foundational work on which to explore the use and application of communication tools within the tele-ICU. The next step to substantiating the overall project premise, that improved communication will improve collaboration, quality and reduce error, will be to explore the completion of a pilot study in which the AVOID tool is compared to traditional unguided communication techniques. Results of such as pilot study will either establish or disprove the link between the

evidence-based tool and communication outcomes (White & Dudley-Brown, 2012). If following the pilot study, the tool is found to improve communication, consideration should be given to replicating the project to identify and create additional tools. Expansion of this project will contribute to the growth of knowledge and practice within the tele-ICU community.

Dissemination Plan

Dissemination is the final essential component to successful project completion. This conclusive stage permits for the translation of evidence to practice (White & Dudley-Brown, 2012). Dissemination of this project will serve to create a better understanding of the role that communication plays in intradepartmental collaboration and inspire discussion regarding the role that this collaboration plays in the quality of care. I identified a practice gap concerning the use of communication tools in the tele-ICU environment and believe this introductory work to be of benefit to the tele-ICU community.

Presentation

An invitation has been extended to present this project during the COR Connections Webinar Series, established by Anita Witzke at University of Maryland's eCare. This webinar series has brought the tele-ICU nursing community together to collaborate on practice, discuss critical issues, and find creative solutions to shared concerns. Currently, 17 tele-ICU Central Operation Rooms (CORs) from around the country communicate via webinar on a bi-monthly basis to discuss a variety of topics of interest. This forum will allow me to present in a virtual format, a style that is very well

accepted and appreciated by this technology-based nursing specialty. Guided by a power point presentation similar to those utilized for the project's oral defense, a comprehensive summary of this project from inception to conclusion will be provided. The goal of this dissemination will be to evoke participant's interest, foster collegial discussion, and present project findings and conclusions. This presentation may also garner interest in participation in the proposed post-graduation pilot study.

Publication Goals

To reach a grander audience, the goal is to publish this work in a peer-reviewed journal. Careful deliberation has been given in the selection of journals considered for publication. The American Telemedicine Association produces the "Telemedicine and e-Health Journal" that focuses on the broad spectrum of advancements and clinical developments in telemedicine. In addition, consideration has been given to the American Association of Critical-Care Nurse's publication *Advanced Critical Care*, which solicits manuscripts that discuss innovative approaches to care. Both of these societies have been instrumental in the creation of practice guidelines and the promotion of clinical inquiry related to the growing subspecialty of tele-ICU nursing.

Conclusion

Selecting dissemination methods that are both attainable and valuable are important considerations. By choosing the webinar presentation as the primary method of communication, a technique that is relevant to the audience and increases the accessibility and convenience of information sharing will be utilized. This approach can engage a large number of professionals who may otherwise not be able to obtain this

information. In summary, employing various methods for disseminating the project will allow me to observe proudly the AACN's (2006) Essential III, "disseminating findings from evidence-based practices to improve health care outcomes" (p. 12).

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Appendix A: AVOID Communication Tool