

# Improving Attitudes Associated With Teamwork and Communication Among Nurses and Staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center, Detroit, Michigan.

Youliana Piscopo, DNP, MSN, RN;

(Department of Veterans Affairs, Miami VA Healthcare System, Chamberlain University,)

\*\*\*\*\*

## Abstract:

Improvements, such as effective positive team communication and improved teamwork, ultimately may lead to improvement in patient safety and outcomes. The performance of a nursing team has a significant relationship with team communication related to the assessment, planning, implementation, and evaluation of nursing care. During the planning, training, and implementation phase, the Teamwork Attitudes Questionnaire and educational Team STEPPS strategies were used to address opportunities for improvements. The Community Living Centers’ staff and nurses completed the Teamwork Attitudes Questionnaire prior to the educational interventions. The same questionnaire was administered to staff and nurses again, as post- educational interventions to collect data for further review of the outcomes. The collected pre- and post- data was placed in Excel spreadsheets and tabulated yielding positive outcomes in all five categories: team structure, leadership, situational monitoring, mutual support, and communication. The collected data was further analyzed with the use of the statistics software Minitab 18. The descriptive statistics were used and had shown an increase in the standard deviation median in all five measures, based on the analysis the correlation between the post- and pre- data, with a t-value supporting the hypothesized value. In conclusion, the implementation of customized TeamSTEPPS training in Long-Term Care settings had shown to be successful. This early work suggests that this approach, with unit-based coaching, can significantly improve communication and teamwork performance.

*Keywords* —attitude, improved teamwork, improved team communication, healthcare teams, long- term care settings, team improvement strategies, TeamSTEPPS

\*\*\*\*\*

## CHAPTER 1 : INTRODUCTION

**Purpose:** The purpose of this project was to identify the effectiveness of initiation of team training in response to communication and team behavior deficiencies, among nurses and staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center. This evidence-based project seeks to evaluate the quality of communication and attitudes associated with teamwork and

communication in the long-term care settings at an urban VA Medical Center, in Detroit, Michigan.

**Background and Significance:** As estimated by the Institute of Medicine, “To Err is Human: Building a Safer Health System” report from 1999, as many as 98,000 deaths occur in the United States annually due to medical errors. Improvements, such as effective team work, and positive communication, ultimately may lead to improvement in patient safety and outcomes. These communication

patterns and improved team engagements can facilitate or prohibit positive change. Communication failures can compromise both patient safety and medical outcomes.

**Methods:** During the planning, training, and implementation phase one, for the Community Living Centers' units, the Teamwork Attitudes Questionnaire and educational TeamSTEPPS strategies were used to address opportunities for improvements. During phase two, the components of TeamSTEPPS were to be incorporated into practice, which included an educational didactic PowerPoint presentation with interactive exercises. The Community Living Centers' staff and nurses completed the Teamwork Attitudes Questionnaire prior to the educational interventions. The same questionnaire was administered to staff and nurses again, as post- educational interventions, to collect data for further review of the outcomes.

**Findings:** The collected pre- and post- data was placed in Excel spreadsheets and tabulated, yielding positive outcomes in all five categories: team structure, leadership, situational monitoring, mutual support, and communication. The collected data was further analyzed using the statistical software Minitab 18. The descriptive statistics were used using a sample two t- test on pre- and post- data. Secondly, other data collected included the standard deviation and the standard error of the mean.

**Conclusion:** In conclusion, the implementation of customized Team STEPPS training in Long-Term Care settings has shown to be successful with respondents reporting an increase for most of the individuals in all five categories. This early work suggests that coaching can significantly improve communication and teamwork performance.

Communication and teamwork are essential components of safe patient care. This evidence-based practice project will evaluate the staff's own attitudes associated with teamwork and communication while working in long-term care settings. This DNP quality improvement project consists of approximately one hundred staff

members who work in the Community Living Center's Veteran Affairs (VA) Medical Center, John D Dingell Detroit, Michigan, in units with long-term care, hospice, orthopedic rehab, and short stay skilled specialties. According to the research article by Dahlke, Stahlke, and Coatsworth-Puspoky (2018), trust and reciprocity, communication, and sharing a common goal are the critical factors in effective teamwork. Among other findings the research article identified the perceptions of staff members towards teamwork and communication in long-term care settings. The participants identified trust and reciprocity, communication, and sharing a common goal as critical factors in effective teamwork (Dahlke, Stahlke, & Coatsworth-Puspoky, 2018).

This quality improvement project will include an initiation of team training in response to communication and team behavior deficiencies. The driving impetus for this quality improvement project is based on the premise that medical care is a team effort, as patient care has become more complex, in a long-term care setting in a veteran administration medical center facility. The Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) 2.0 for Long-term Care curriculum approach will be utilized to assist staff with improvement of attitudes towards communication and teamwork (AHRQ, n.d.)

### **I. Problem Statement**

As estimated by the Institute of Medicine "To Err is Human: Building a Safer Health System" report from 1999, as many as 98,000 deaths occur in the United States annually as a result of medical errors (Donaldson, Corrigan & Kohn, 2000). From the period of 2000 to 2015, articles from the nursing literature looked beyond human performance as causes of health care errors to systemic factors, such as poor communication, patient-nurse ratios, provider skill mix, disruptive or inappropriate provider behavior, shift work, and long working hours (Kowalski & Anthony, 2017). Improvements, such as effective positive team communication, ultimately may lead to improvement in patient safety and outcomes.

According to research article by Jin-Kyoung and Suk-Won (2015), the effective communication among nurses is a necessary component of their daily practice and can affect the quality of performance of and healthcare delivery. Communication failures within the healthcare team can compromise both patient safety and medical outcomes. The performance of a nursing team has a significant relationship with team communication related to the assessment, planning, implementation, and evaluation of nursing care (Jin-Kyoung& Suk-Won, 2015).

## **II.Objectives and Aims**

The purpose of this evidence-based project is to identify the effectiveness of initiation of team training in response to communication and team behavior deficiencies, among nurses and staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center. This evidence-based project seeks to evaluate the quality of communication and attitudes associated with teamwork and communication in the long-term care settings at an urban VA Medical Center in Detroit, Michigan.

The goal of this evidence-based project is to evaluate the present state of staff attitudes towards quality of communication and teamwork, by the nurses and staff in the long-term care settings, based on the identified Teamwork Attitudes Questionnaire (T-TAQ) results. The results of this evidence-based project may be used to provide with direction for future education programs and will serve to aid in the development of a nursing competency focused upon promoting optimal team engagement and staff satisfaction

The objective of the approach being investigated in this evidence-based project is to improve the nurse's and staff's communication and own attitude regarding teamwork, as measured by the Teamwork Attitudes Questionnaire (T-TAQ) results. There is a lack of communication and teamwork amongst nurses and staff at the site, which can negatively impact patient outcomes and the quality of care provided. Positive teamwork and effective communication will ultimately lead to

improvement in patient safety positive healthcare outcomes. Using in comparison the current processes, this practice change will evaluate the improved attitudes and perceptions associated with teamwork and communication using the implementation of Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) 2.0 for Long-term Care curriculum approach (AHRQ, n.d.)

The aim of the proposed DNP project is to improve attitudes and perceptions associated with teamwork and communication among nurses and staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center. There are several objectives, which will be satisfied by the implementation of the TeamSTEPPS 2.0 for Long-Term Care training which include:

- Improved staff attitudes regarding teamwork and communication
- Improved Veteran outcomes
- Improved reputation of the VA Community Living Center as a valued employer
- Improved staff teamwork and communication embracing diversity

## **III. Significance of the Practice Problem**

Efficient, accurate, and timely communication is required for quality health care and is strongly linked to health care staff job satisfaction. As per Gausvik and colleagues (2015), developing ways to improve communication is the key to increasing quality of care and staff satisfaction. The utilization of interdisciplinary care teams allows for improved communication among health care professionals. Gausvik et al., (2015) noted the importance of assessing the issue on the level of the individual staff member, to examine his or her own attitude towards teamwork and communication.

Since the beginning of fiscal year 2015 the staff and nurses at the Community Living Centers (CLC) at VA Medical Center John D Dingell,

Detroit, Michigan, have been involved with the implementation and sustainability of the Relationship Based Care (RBC) Transformational model. The three units: A5S, A6S, A6N utilize a staff mix of registered nurses, licensed practical nurses, certified nursing assistants, nurse practitioners, medical doctors, medical residents, staff psychologist, chaplain, recreational therapist, clinical nurse managers, assistant clinical nurse managers, social workers, case workers, and other healthcare professionals. As per the RBC transformational model, the emphasis was made on the relationship of the persons involved, within themselves, within each other and within the organization (Johnson & Ezekielian, 2014). The staff on those units has shown ability to successfully implement and sustain various quality improvement projects in the past, and the RBC transformational model helped those teams to reconnect with the purpose and meaning of their work and take ownership for providing the best possible care and service (Johnson & Ezekielian, 2014). One of the core values of the Veterans Healthcare Administration is the veteran centered driven care, which aligns with the patient centered care promoted by Institute of Medicine and imbedded in Quality and Education for Safety in Nursing (QSEN) competencies. As per Sherwood and Zomorodi (2014), there are six QSEN competencies that were developed for pre-licensure and graduate nursing programs: patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. For each competency, there are expectations relating to the knowledge and understanding, skills and implementation, and attitudes and values that should be achieved (Sherwood & Zomorodi, 2014).

To place a clear practice question, in support of the existing problem and the proposed intervention for improvement of the practice situation, the formulation of the proposed PICOT question is as follows:

"For nurses and staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center, Detroit, Michigan will the implementation of TeamSTEPPS improve attitudes associated with teamwork and communication in 8-10 weeks?"

As per All Employee Survey results for FY 2018, the staff from units A5S, A6S, and A6N has showed a lower score in comparison to FY 2017 in areas of communication and employee engagement/team work. The scores are measured at the SAIL 3.0 scale (target: scores of 4.0 and better) and for the item questions such as: "Extra effort", "Employee engagement", "Engagement outcome satisfaction", "Communication" in the section "Feelings: Work environment", the team score in FY 2018 is 0, in comparison to the team score in FY 2017 which was 3.75 in 2017, with target above 4.0. The implementation of the Agency for Healthcare Research and Quality's (AHRQ) TeamSTEPPS 2.0 for Long-term Care curriculum will be a great quality improvement project for improving staff perception and attitudes towards communication and team work. This much-needed quality initiative will also be included as a part of the Employee Satisfaction Improvement Action plan for the VA Medical Center, John D Dingell, Detroit, Michigan.

This much-needed quality initiative will assist the Community Living Centers (A5S, A6S, and A6N) team members to better understand their own personal attitudes associated with teamwork and communication in their work environment. As per the All Employee Survey findings and staff member's self-report, there is a lack of communication and teamwork among nurses and staff at the site, which can negatively impact veteran's outcomes and quality of care provided. Therefore, the implementation of TeamSTEPPS 2.0 for Long-term Care curriculum will provide with the necessary training to improve the CLC team member's attitudes associated with teamwork and communication.

As per research conducted by Williams, Ilten and Bower (2016), the nursing home residents

primarily rely on nurses and other support staff for communication and interpersonal relationships. Due to staffing shortage challenges and care complexity, the front line staff exhibits lack of awareness and skills to effectively communicate with older adults. The staff at units A5S, A6S and A6N at John D. Dingell VA Medical Center, housing a veteran with long-term care needs, as well as veterans under hospice, short stay skilled, and orthopedic rehab specialties, had experienced recent staff shortages and is currently coaching and training a new staff members, therefore the implementation of TeamSTEPPS 2.0 for Long-term Care curriculum would be most appropriate. As per the facility's fiscal year 2019 strategic plan one of the strategic aims is to work on the strategic pillar People and improve care team wellbeing through improved communication among staff across the facility, in their quest to become a valued employer to a diverse and inclusive workforce, and improve the All Employee Survey (AES) scores through improving workgroup satisfaction and burnout levels for each service.

#### **IV. Synthesis of the Literature**

A literature search conducted on the various databases had yield in the summary of fourteen research articles including: systematic and integrative reviews, systematic review and meta-analysis, case studies, cross-sectional studies, brief communication, qualitative and quantitative analyses, and a doctoral dissertation. The literature search focused on attitudes towards interprofessional teamwork, healthcare provider's attitudes towards teamwork and collaborative communication as related to the PICOT question, revealed several similarities, some differences and best evidence for practice. Position statements from expert committees such as the American Association of Colleges of Nursing (AACN) and the Institute of Medicine (IOM) were also included in the review. Databases searched include the Cochrane Database of Systematic Reviews, the Joanna Briggs Institute, OVID, the Cumulative Index of Nursing and Allied Health Literature (CINAHL) Complete, MedLine (PubMed), and

Google Scholar. The selected articles ranged in time from 2013 to 2018, with limitations set to "full text", "peer reviewed", and "English language". Keyword searches included the terms "teamwork", "collaboration", "healthcare", "TeamSTEPPS", and "interprofessional communication". Three common themes were prevalent in the literature evidence related to teamwork, including attitudes and perceptions towards interprofessional communication, attitudes and perceptions towards healthcare safety culture, and TeamSTEPPS implementation in various healthcare settings: improving attitudes towards the components of teamwork and communication. A closer review of the three research themes focused on attitudes towards teamwork communication will be discussed and compared.

#### **V. Healthcare Team Attitudes towards Teamwork and Interprofessional Communication:**

As per Gharaveis, Hamilton, and Pati (2018) teamwork and communication are noted as behavioral factors that are impacted by physical design. Searches were conducted in the PubMed and Google Scholar databases in addition to targeted design journals including *Health Environmental Research & Design*, *Environment and Behavior*, *Environmental Psychology*, and *Applied Ergonomics*. The authors examined the literature regarding the impact of built environment on teamwork and communication were reviewed and explored in detail (Gharaveis, Hamilton, & Pati, 2018; Körner, Wirtz, Bengel, & Göritz, 2015). The environmental design, which involves nurses, support staff, and physicians, is one of the critical factors that promote the efficiency of teamwork and collaborative communication (Gharaveis, Hamilton, & Pati; Körner, Wirtz, Bengel, & Göritz; Watson 2015). The authors noted that the layout design, visibility, and accessibility levels are the most cited aspects of design which can affect the level of communication and teamwork in healthcare facilities (Gharaveis, Hamilton, & Pati; Körner, Wirtz, Bengel, & Göritz; Watson ).

As per multi-center cross-sectional study by Körner, Wirtz, Bengel, and Göritz, (2015), team effectiveness is often explained based on input-process-output models. The aim of this study was to examine the relationship between these three aspects, through the prism of structural analysis (Körner, Wirtz, Bengel, & Göritz, 2015). The study results underpinned the importance of interprofessional teamwork in health care organizations. As a result, the authors suggested that to enhance interprofessional teamwork, team interventions can be recommended and should be supported (Körner, Wirtz, Bengel, & Göritz; Watson; Gharaveis, Hamilton, & Pati).

As per Watson (2015), the researchers examined the increasing focus on interdisciplinary communication, higher acuity of nursing care, intensified workloads and responsibilities, and decreasing rates of retention. The authors noted in the healthcare literature, that the research is focusing on nursing teamwork, especially in the area of patient safety. This study illustrated a direct correlation between teamwork and adequate staffing levels with that of staff member's job satisfaction with their current position (Watson, 2015). The author highlighted that leadership of the nurse manager was the critical deciding factor to attract and retain team members (Watson, 2015).

As per systematic review and Meta-analysis by Guraya, & Barr, (2018) there is a positive impact and effectiveness of educational intervention by utilizing the intraprofessional educational programs. A synthesis of various studies findings suggests that there are positive outcomes when an intraprofessional education is used, which yield in improved perceptions of overall improvement of students' knowledge, skills and attitudes, among the trainees (Guraya & Barr; Körner, Wirtz, Bengel, & Göritz; Watson; Gharaveis, Hamilton, & Pati).

#### **VI. Healthcare Team Attitudes towards Healthcare Safety Culture:**

In a systematic review by Pannick et al (2015), the authors noted that optimizing teams' performance improves patient outcomes, and interdisciplinary practice. The interdisciplinary

teamwork performance is a major target for improvement efforts. The current evidence suggests that interdisciplinary team care interventions on general medical wards have little effect on traditional measures of health care quality (Pannick et al; Barton, Bruce, & Schreiber, 2018). As per the authors finding innovative methods should be used in order to improve interdisciplinary performance on general medical wards (Pannick, et al., 2015)

As per an integrative review by Barton, Bruce, and Schreiber, (2018), the widespread demands for highly reliable healthcare teamwork have given rise to numerous educational initiatives aimed at teambuilding and team communication. The authors critically analyzed the empirical published work reporting on teamwork education interventions in nursing (Barton, Bruce, & Schreiber, 2018). The authors noted that nursing teamwork assessment is complex; involving integrated yet individualized determinations of knowledge, skills, and attitudes (Barton, Bruce, & Schreiber, 2018). As per their findings the collective interdisciplinary and leadership support is required to translate teamwork competency into nursing practice (Barton, Bruce, & Schreiber, 2018).

The goals of the TeamSTEPPS program are to create and maintain a culture of safety by changing team behavior. As per Plonien, and Williams, (2015) the behavior change requires team members to share the same mental model of goals to be accomplished. As per research completed in an operational room setting, the implementation of TeamSTEPPS was introduced as a three-step process that involves pre-training assessment, followed by training for on-site trainers and personnel and then implementation and sustainment of the program (Plonien, & Williams, 2015). As per the author's findings, within surgical services, the role of the leader of operational room is to the one to ignite, change, and shift the culture to higher levels of performance and safe care (Plonien, & Williams, 2015). The researchers noted that the effects of nursing administrators and managers who

demonstrate strong leadership skills was evident, as the leadership role was imperative in the connecting of the concepts and elements required for successful implementation of TeamSTEPPS (Plonien, & Williams; Barton, Bruce, & Schreiber).

### **VII. Implementation of TeamSTEPPS in Various Healthcare Settings: Improving Attitudes towards the Components of Teamwork and Communication.**

The TeamSTEPPS have been implemented in various healthcare settings. The implementation of TeamSTEPPS in various hospital settings has resulted in organizational success factors such as reducing error and patient harm. According to research articles findings the implementation of the TeamSTEPPS identified enhanced teamwork, in the context of the multiple healthcare settings, and it helps to establish the groundwork for future research linking the improved attitudes and perceptions, utilizing the TeamSTEPPS interventions, to improved patient safety outcomes (Whitcher, 2015; Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013; Abraham, Dever, & Roman, 2017; Sheppard, Williams, & Klein, 2013)

The aim of a qualitative analysis by Keller, Eggenberger, Belkowitz, Sarsekeyeva, and Zito, (2013), was to explore the experience of an interprofessional communication educational intervention among nursing and medical students. The researchers used training sessions based on the Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) curriculum, as a very popular tool also utilized in multiple healthcare research articles (Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito; Abraham, Dever, & Roman;Cooke, 2016; Epps & Levin, 2015; Sheppard, Williams, & Klein, 2013). As per the study findings the students felt increased competence and confidence when responding to conflicts after practicing communication in a safe environment (Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013). Based on the opportunity to come to know their colleagues, students recognized that patient safety was a shared goal. Six themes were extracted from the narratives

describing their experiences: support for process, patient safety, coming to know colleague, support for tools, respectful collaboration, and barriers to communication (Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013). The authors noted that TeamSTEPPS provided a framework for effective and respectful collaboration (Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013).

In 2015, the Academy for Leadership in Long-Term Care received a grant to train staff from local LTC facilities on the principles, strategies and techniques of TeamSTEPPS. The results from the training indicated that due to the implementation of the program, there were significant changes in the participants' individual roles and responsibilities, team communication, knowledge of assessment and monitoring, and the use of handoff communications to improve patient safety (Abraham, Dever, & Roman, 2017). A case study by Cooke, M. (2016) aimed to determine the impact of an educational intervention on the knowledge and attitudes related to communication and teamwork in the health care risk management population. The teamwork education tailored to the needs of the specific audience resulted in knowledge gained and improved attitudes toward the components of teamwork (Cooke, 2016; Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013 Abraham, Dever, & Roman, 2017). The attitudes that most significantly improved were related to team structure and situation monitoring(Cooke, 2016; Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013 Abraham, Dever, & Roman, 2017).

According to Epps, and Levin, (2015) the most important underlying concept of TeamSTEPPS is that patient care and safety demands that everyone participating in the care of the patient, including the patient and family, have the single common goal of successfully guiding the patient and their family through their health care experience. The expert teams require the ability of each team member to have specific skills (tasks) necessary for the overall success of the team, but each individual needs to integrate their own area of

expertise into the overall success of the team as opposed to simply addressing their individual area of expertise (Epps & Levin, 2015; Whitcher, 2015; Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013; Abraham, Dever, & Roman, 2017; Sheppard, Williams, & Klein, 2013). A breakdown in communication involving a member of the team, which includes the patient, their family, the physician(s), nurses, technicians, administrators, and all ancillary staff, can result in an avoidable complication (Epps & Levin, 2015). The authors outlined that TeamSTEPPS specifically promotes *task assistance*, in which one member of a team may assist another member who is overwhelmed (Epps & Levin, 2015). In addition, everyone on the team understands that personality conflicts arise and that human errors occur (Epps & Levin, 2015). TeamSTEPPS teaches skills and techniques to facilitate conflict resolution.

A case study by Sheppard, Williams, and Klein (2013) revealed that communication problems in healthcare are considered to be a leading cause of medical errors and often the root cause of sentinel events. The challenges in the implementation process, the successes, failures, and the obstacles were discussed. The authors used comparisons between the systems as well as lessons learned after implementation with the aim to later on assist hospitals and health systems to implement and sustain a successful TeamSTEPPS program (Sheppard, Williams, & Klein, 2013). According to the authors findings a big contributor to the positive results has been the success stories that have emerged from staff using the teamwork and communication skills that they have learned and implemented (Sheppard, Williams, & Klein, 2013; Whitcher, 2015; Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013; Abraham, Dever, & Roman, 2017; Epps & Levin, 2015). According to the research study findings, staff had seen the benefits of effective communication through planning the day by way of a briefing or using a huddle to pre-prepare for a soon-to-arrive critical patient (Sheppard, Williams, & Klein, 2013). The

study results revealed that the TeamSTEPPS experience has been one of patient safety where “data tell and stories sell” (Sheppard, Williams, & Klein, 2013).

As per case study by Moreland and Apker (2016), nurses’ function as central figures of health teams, coordinating direct care and communication between team members, patients, and their families. These communication patterns can facilitate or prohibit positive change. Findings suggest conveying respect may help nurses manage and even avoid flames of conflict and stress. Solutions are offered to mitigate the effects of conflict and stress while developing respectful organizational cultures (Moreland & Apker, 2016; Bae, Nikolaev, Seo, & Castner, 2015). Current evidence of the health care workforce's social networks reveals the nature of social ties are related to personal characteristics, practice settings and patient types (Moreland & Apker, 2016; Bae, Nikolaev, Seo, & Castner, 2015).

### **VIII. Practice Recommendations**

Health care systems and change agents who are seeking to respond to the challenges of responsibility in care can use TeamSTEPPS as a validated multilevel teamwork intervention methodology, enhanced by relational coordination as a validated multilevel teamwork measure that provides actionable insights regarding the current state of teamwork. The quality improvement project is of great importance to building a culture of patient safety within a structure that optimizes teamwork and ongoing engagement of the healthcare team. Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS), is well established evidence-based framework used among different healthcare settings for team training to create transformational and/or incremental changes; facilitating transformation of organizational culture (AHRQ, 2018).

The current focus on patient safety in healthcare has been attributed to the Institute of



Medicine's report: *"To Err is Human: Building a Safer Health System"*, which estimated that from 1999, as many as 98,000 deaths occur in the United States annually as a result of medical errors (Donaldson, Corrigan & Kohn, 2000).

Creating a culture of safety, through improved communication and teamwork, in healthcare organizations requires the participation of all members, as healthcare delivery requires multiple caregivers to work together as an effective team with the goal of achieving desired patient outcomes and pre-venting harm (Gausvik, Lautar, Miller, Pallerla, H., & Schlaudecker, 2015). The quality of teamwork impacts the effectiveness of care and effective teamwork requires training and development, and formal training is recommended (Thomas, & Galla, 2013). TeamSTEPPS educational program includes a team building steps that can create improved lines in communication among team members. With the knowledge that communication is such a stumbling block or a great road to success, and assessing the feelings as this project is building, can stop some unwanted problems from halting the progression of the Community Living Centers' nurses and other staff members, as a fully functioning team.

As per Beitlich (2015) the team training has been established as a strategy for enhancing teamwork, reducing medical errors and building a culture of safety in healthcare. The results from a study conducted in the labor and delivery and neonatal intensive care unit supported the review of literature that teamwork and patient outcome improvements may be enhanced with TeamSTEPPS implementation (Beilitch, 2015).

As per research article by Beiler, Opper, and Weiss (2019) there are problems with communication caused in patient discharge. The quality improvement project uses the implementation of TeamSTEPPS to promote positive outcomes for the patient and to enhance teamwork and communication among nurses and staff members in inpatient settings.

The TeamSTEPPS tool for implementing good communication flow and language has been noted in numerous articles as a much-needed "step" to take to increase interprofessional and patient communication skills. Joint Commission (2012) reported that nearly 66% of sentinel events had their root cause in problems that dealt with communication, this tells us that there were problems then and still are now (Michel, 2017).

According to Dow, A. W., DiazGranados, D., Mazmanian, P. E., and Retchin, S. M. (2013) healthcare professionals who are taught the TeamSTEPPS approach, will gain an understanding of team function that will help them both facilitate collaboration in existing care processes and create new approaches to care that are more supportive of teamwork. The authors finding suggest that gaining an understanding of these principles will pre-prepare health care trainees, whether team leaders or members, to analyze team performance, adapt behaviors that improve collaboration, and create team-based health care delivery processes that lead to improved clinical outcomes (Dow, DiazGranados, Mazmanian, & Retchin, 2013).

#### **IX. Evidence Based Practice: Verification of Chosen Option**

TeamSTEPPS was developed by the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense as an evidence-based teamwork system for improving communication and teamwork among health care providers to enhance team performance and patient safety (AHRQ, 2013). The TeamSTEPPS 2.0 for Long-Term Care curriculum summarizes the components of successful health care teams in long-term care settings. The TeamSTEPPS 2.0 for Long-Term Care implementation is part of the national initiative for optimizing care quality and patient safety using team strategies and tools to enhance performance and patient safety (AHRQ, 2018). The measurement tool such as Teamwork Attitudes Questionnaire (T-TAQ) would be used pre--and post--course to measure the impact of an

educational intervention on the knowledge and attitudes related to communication and teamwork (AHRQ, 2018). The reader is encouraged to refer to the TeamSTEPPS 2.0 for Long-term Care Web site for more detailed information (<http://www.ahrq.gov/teamstepps/longtermcare/index.html>).

## **CHAPTER 2: THEORETICAL FRAMEWORK**

### **Theoretical Framework**

To implement the DNP project, the practice intervention requires behavioral changes among the participants. The intended practice change for the Community Living Centers requires change in the behaviors of nurses and staff and ultimately improvement of attitudes toward team work and communication. Some of the benefits of using the Theoretical Domain Framework are creating a concrete structure of a robust theoretical basis for implementation of quality improvement projects, such as implementing the TeamSTEPPS 2.0 for Long-Term Care curriculum initiative and providing a methodology for progressing from investigation to intervention (Atkins et. al, 2017).

### **Theoretical Domains Framework**

The complexity of the initiation of TeamSTEPPS 2.0 for the Long-Term Care curriculum and the nurses, staff, and clinician's own biases, as well as the nature of the PICOT question aiming at the improvement of attitudes, has led to the Theoretical Domains Framework use as most appropriate for the proposed practice change. According to Sales et al. (2016), the Theoretical Domains Framework (TDF) specializes in the behavior change on the level of the persons involved. As per Gould et al., (2014) the TDF does identify potential barriers to the behavioral change of the individuals, which would be vital in the pre-contemplation and contemplation part of the change project. In a hospital context, this framework may not be the only approach due to the multi-level nature of healthcare organizations. The elements of

change in response to feedback may be outside the control of any individual healthcare professional. Limitations to the TDF framework should be considered, regarding the response to feedback by the participants.

According to Lipworth, Taylor, and Braithwaite (2013) the TDF has been developed to change the biases in attitude and behavior change of the clinicians among other healthcare staff members. According to Philips et al. (2015) the TDF is most appropriate for a diverse group of health professionals working across different clinical settings for influencing behavioral change for the purposes of implementation projects. For example, the Community Living Centers (CLC) nurses and staff members are represented by persons from a various ethnical background. Also, the multidisciplinary CLC team consists of registered nurses, certified nursing assistants, licensed practical nurses, nurse practitioners, physicians, social workers, chaplain, restorative therapist, recreational therapists, occupational therapists, physical therapists, resident assessment coordinators, clinical nurse managers, quality coordinator, and other support staff. Therefore, the Community Living Centers with their unique diverse population of caregivers and multidisciplinary approach would be most suitable testing ground for the TeamSTEPPS 2.0 for Long-Term Care curriculum initiative.

Theoretical Domains Framework has been designed to help with the implementation of evidence-based practice, which requires behavior change (Philips, 2015). Behavioral change is difficult, and personal. As stated by Philips (2015) using domains such as knowledge, goals, intentions, emotion, and behavioral change becomes possible. This type of framework is most suitable for implementation of TeamSTEPPS initiative, where all those domains are placed in use. By utilizing the TDF framework in the implementation of TeamSTEPPS initiative, the staff and nurses are guided to understand their own attitudes and perceptions towards teamwork and communication,

allowing them to understand their own feelings and situation (Philips, 2015). This task would be achieved in the pre- contemplation and contemplation part of the project with the use of the outcome measure tools indicated for the intended project.

As per Atkins et al. (2015), the TDF may be used to guide data collection using, for example, interviews, focus groups, structured observation, and questionnaires designed to identify barriers and facilitators to change. In the intended quality improvement, the TDF would be used to examine the relationships between theoretical domains and uptake of the staffs and nurse's perceptions and attitudes towards teamwork and communication, as well as the process evaluations to identify mechanisms of change.

The TDF framework has been used primarily in healthcare settings for exploring factors influencing clinical behaviors to design implementation of interventions (Atkins et. al, 2015). Sales and colleagues (2017) noted that the TDF framework can be used to guide behavior change technique selection when designing interventions. *Behavior change techniques* have been collated and described extensively and can be linked to constructs within TDF domains, which will allow us to design elements into the feedback and learning collaborative strategies (Sales et al, 2017). For example, the behavior change techniques, which are also included in the TeamSTEPPS initiative, and the pre- and post- questionnaires, tools for implementing and measuring outcomes of the practice change project.

The TDF strategies units can provide highly specific components to implementation interventions and can be used to design elements within the strategies utilized by the teamSTEPPS 2.0 for Long-Term Care initiative. Using both the feedback and learning collaborative implementation strategies will test different design elements within these two strategies. The TDF framework will assist with tailoring of these strategies to the Community

Living Centers specific contexts through the data gathered from the context and barrier/facilitator assessments (Sales et al., 2017).

The TDF framework has been proven to be effective in the areas of assessing implementation, supporting the intervention design, and achieving implementation objectives (Atkins et al., 2015). The use of the TDF frameworks' comprehensive theoryinformed approach to identify determinants of behavior and would be essential for the implementation of the teamSTEPPS 2.0 for Long-term Care curriculum initiative, among the staff and nurses in the Community Living Centers' units A5S, A6S, A6N at the VA Medical Center, Detroit, Michigan.

### **Introduction to the Change Theory**

According to article by Kaslow, Falender, and Grus (2012), there are specific leadership competencies, which facilitate organizational change. As a backdrop to the focus on a transformational leadership approach and competency-based supervision, explicitly the claims the article makes are the way of which transformational leadership is applied to changing educational and training cultures and climates to ensure the consistent and comprehensive implementation of a competency-based approach to clinical supervision (Kaslow, Falender, &Grus, 2012).

As per Prohaska's theory there are six stages of progression through the Stages of Change, which can occur in a linear fashion: pre- contemplation, contemplation, preparation, action, maintenance, and termination. The authors argued that often, "individuals recycle through the stages or regress to earlier stages from later ones" (Prochaska, & Norcross, 2007). The TeamSTEPPS initiative can be successfully implemented in our organization with the utilization of the Transtheoretical Model (TTM) of behavior change, recognized as an applicable framework for understanding human behavior (Prochaska, & Norcross, 2007).

The Stages of Change Model, also known as TTM was developed by Prochaska and DiClemente in 1982. Since that time this model has been the basis for developing effective interventions to promote health behavior change (Prochaska, & DiClemente, 1982). The model describes how people modify a problem behavior or acquire a positive behavior. The TTM operates on the assumption that people do not change behaviors quickly and decisively. Rather, change in behavior, especially habitual behavior, occurs continuously through a cyclical process. This change theory has been successfully applied in the nursing practice in the successful implementation of healthy behaviors (Prochaska, 2013). The TTM is a model of intentional change; therefore it would be imperative for the staff and nurses at the Community Living Centers to accept their own perceptions and attitudes towards teamwork and communication.

#### **Change Model**

The Transtheoretical Model of behavioral change provides various strategies for interventions which address people at various stages of the decision-making process. Some of the TTM strategies suggests assessing of the person's current stage of change, and accounts for relapse in the decision-making process (Prochaska, 2013). The Transtheoretical Model (TTM) focuses on the decision-making of the individuals involved in the process and is a model of intentional change (Prochaska, 2013). The model can be utilized to promote empowerment of the clinical leaders and the participants in the project. The model is imperative for providing the participants in a practice change with the guidance and steps of investigating the main idea thus facilitating the efforts of the project through the various stages. The TTM theory can be used as a practice change model for implementation not only on unit level but organizational level as well.

#### **Step 1: Pre- contemplation (Not ready)**

In this stage of thoughtful observation, it is evident that the relationships of the staff on the Community Living Centers units A5S, A6S, and A6N, are already established and things are going along as usual (Prochaska, 2013). The staff and nurses at the Community Living Centers observe and accept their own perceptions and attitudes towards teamwork and communication in the first stage: the pre- contemplation. This observation would be achieved by the use of the questionnaires as a pre- intervention. The implementation of the TeamSTEPPS quality initiative will assist our Community Living Centers' (A5S, A6S, and A6N) team members to better understand their own personal attitudes associated with teamwork and communication in their work environment.

#### **Step 2: Contemplation (Getting ready)**

The second stage of the model: contemplation is the stage in which the staff and nurses are aware of the positive outcomes in improving attitudes and perceptions towards teamwork and communication but are also aware of low or negative scores in the sections regarding feelings and attitudes towards teamwork and communication in the most recent facilities All Employee Survey. The survey's findings and staff members self-report suggests that there is a lack of communication and teamwork among nurses and staff at the site, which can negatively impact veterans' outcomes and quality of care provided. The implementation of TeamSTEPPS 2.0 for Long-term Care curriculum would provide with the necessary training to improve the CLC team members' attitudes and perceptions associated with teamwork and communication. At this stage the needs-based assessment of the Community Living Centers was completed and findings were disseminated among the CLC leadership and the facility decision maker. As a result, decision for the implementation of the TeamSTEPPS 2.0 for Long-term Care initiative was made.

#### **Step 3: Preparation (Ready)**

At this stage the process of developing solutions begins by gathering as much information

as possible that is relevant to the situation that requires change (Prochaska, 2013). The staff on the CLC units has shown the ability to successfully implement and sustain various quality improvement projects in the past, and the RBC transformational model helped those teams to reconnect with the purpose and meaning of their work and take ownership for providing the best possible care and service (Johnson & Ezekielian, 2014).

#### **Step 4: Action**

At this stage the TeamSTEPPS 2.0 Long-Term Care curriculum initiative is already selected for implementation and there is an action plan in place. According to the organizational assessment findings, and staffs' self-reports there is a lack of communication and teamwork at the site, which can negatively impact residents' outcomes and the quality of care provided. For example, after the Institutional Review Board approval, on the first day of implementation of the TeamSTEPPS 2.0 for Long-Term Care quality improvement project, the Teamwork Attitudes Questionnaire (T-TAQ) will be administered to the staff to establish a base line of their attitudes and perceptions towards teamwork and communication. Then the implementation of TeamSTEPPS educational sessions will follow, with the aim to improve attitudes and perceptions towards teamwork and communication, among nurses and staff members at the community Living Centers' units A5S, A6S, and A6N at VA Medical Center John D Dingell, in Detroit, Michigan. The implementation will consist of educational sessions including a didactic portion accompanied with PowerPoint and interactive exercises, as per TeamSTEPPS guidelines.

#### **Step 5: Maintenance**

This is the phase in which, once the change has been put in place, must be established and accepted. Individuals and organizations are often resistant to change, so careful attention must be given to make sure that the change becomes part of new routine behavior (Prochaska, 2013). After change has been accepted, the change process can

be declared successful. For example, upon completion of the implementation process, the same two questionnaires: the Teamwork Attitudes Questionnaire (T-TAQ) from the action phase will be given to the staff and the results will be compared and statistically analyzed. As per the anticipated results, after the change was accepted, the process can be declared successful.

#### **Step 6: Termination**

This is the phase in which the successful implementation of transformational leadership driven project, would be monitored for sustainability (Prochaska, 2013). Once the change has become the new "normal," there is the hope that the staff and nurses at the Community Living Centers and the organization as a whole has learned enough about themselves and the change process that they can maintain their new behaviors, and will have improved attitudes and perceptions towards teamwork and communication. The expectations are that the next All Employee Survey will show and improved results in staff attitudes and feelings towards teamwork and communication.

### **CHAPTER 3: PROJECT DESIGN AND METHODS**

In our roles as nursing leaders within our organizations and communities we are the drivers of change, updating with the proposed practice changes, disseminating those changes to our organizations, and peers, as well as conducting the evaluations of the healthcare policies, pertaining to our organizations. One of many important steps in our efforts to keep our organizations in new policies and guidelines is interviewing nursing leaders. The nursing leaders are the ones guiding us to identify gaps in our organization's current policies and offer us additional insight on specific issues.

#### **Organizational Need**

For completion of an organizational assessment to be valid and transparent, an interview with the Associate Chief Nurse Geriatrics and

Extended Care (GEC) Services was performed on September 5<sup>th</sup>, 2018 at the Community Living Centers (CLC), VA Medical Centers John D Dingell. The Chief Nurse of the GEC Service is a doctoral pre-prepared orthopedic nurse practitioner with 22 years of nursing experience, and multiple certifications. Ms. Marson, DNP, APRN-BC (personal communication, September 5, 2018) has been of service to our nation's veterans at the VA Medical Center, Detroit, Michigan for 16 years, and for the last five years in her role as a chief of geriatric and extended care services at CLC.

The selected quality improvement issue discussed during the interview was related to the All Employee Survey results, and the hospital goals of enhancing the communication among staff within all services in the organization, and promoting staff training in developing employees and leaders. This is part of a bigger aim to promote the facility as a valued employer.

### **Project Stakeholders**

During the interview with Dr. Marson, DNP, APRN-BC, it was noted that problematic areas within the hospital were narrowed down to all the facility wards/units and clinics and include a lack of communication among staff and services (personal communication September 5, 2018). The VA Medical Center is a teaching facility, and the Community Living Center, units A5S, A6S, A6N include physicians for long-term care, hospice, rehab, short stay, nurse practitioners, hospice case work registered nurses, quality registered nurse, restorative registered nurse, minimum data set coordinator registered nurse, resident assessment coordinator registered nurse, staff registered nurses, licensed practical nurses, and certified nursing assistants.

One area that was discussed during the interview was the lack of training aimed towards staff attitudes and perceptions of communication and teamwork. This much needed training would be of benefit to the inpatient/outpatient nursing and other supportive staff, such as staff from various

services: providers, social work, recreational therapy, etc. In conclusion this area of improvement would involve several factors within the hospital (leadership, staffing, education and training plan, times/dates, etc.).

### **Organizational Support**

Regarding the quality improvement project, the support from Associate Chief of Nursing Geriatrics and Extended Care Services, as well as the Medical Director for Geriatrics and Extended care at VA medical center, John D Dingell, Detroit, Michigan is very strong and empowering. The attendees were representatives from various healthcare disciplines, such as : providers, social work, hospice, orthopedic rehab, and short stay skilled specialties, social work, chaplain, nurse practitioners, and other support staff. The organizational support was approved after a collaborative meeting of the Geriatric and Extended Care Project Improvement committee. Because of the meeting a letter of support was drafted and signed by the Associate Chief Geriatrics and Extended Care Services VA Medical Center John D Dingell (See Appendix G "Organizational support letter")

### **SWOT Analysis**

The identification and assessment of SWOT is intended to yield strategic insights, and to assist the organization to accomplish its objectives, while also seeking to mitigate internal weaknesses and external threats (see Appendix F).

### **Strengths**

One of the strengths indicated by the analysis was that the Community Living Centers' nurses and staff members had been introduced to various quality improvement projects in the past. Our lessons learned from the implementation of the Relationship Based Care (RBC) initiative, will be used in the implementation of the TeamSTEPPS 2.0 for Long-Term Care as well. At the time of launching the RBC at our facility, there were many mixed messages between staff at the unit level. Communication of essential information among nurses, staff and other members of the care team

cannot be left to chance. When it is shared in a group through a huddle of the shift or with the management team, everyone hears the same information and can share what they know.

### **Weaknesses**

As per staff self-report the morale on the unit with regards to teamwork and communication has been viewed as low. There are staff members who retired and new staff coming aboard. There is a need for implementation of structures, processes, and relationships designed to support every team member's ability to provide attuned, compassionate, high quality care. It would be important for nurses and staff to understand their own attitudes and perceptions towards teamwork and communication to ultimately improve the quality of care.

### **Opportunities**

There are opportunities for improvement of the staff's own beliefs and desire for improving of their perception of teamwork and better communication. The intended quality improvement project is seeking to promote positive outcomes for the patient and to enhance teamwork and communication among nurses and staff members in inpatient settings. The implementation of Tools to Enhance Performance and Patient Safety (TeamSTEPPS) 2.0 for Long-term Care curriculum was developed as a means of overcoming these challenges.

### **Threats**

Some of the possible threats may be the staff, nurses, and other staff partners' own biases regarding teamwork and communication. The framework and change model are based on the premise that medical care is not just an individual effort, but a team effort geared to the success of the patient, and are built up upon behavioral changes. The obstacle that could be faced is the person's own willingness to improve their attitudes and perceptions.

### **Barriers and Facilitators**

Upon completion of the organizational assessment and communicating with staff it was

surprising to learn that there are still employees who may be very negative and try to turn the communication into blaming other staff members who are not pre-sent for some of the shortcomings, or trying to speculate regarding staff personal situation or best practices. This imperative information was very disturbing for me as a quality and safety nurse, as well as a project manager for the quality improvement TeamSTEPPS initiative. As per Marshal and Broome (2016) the transformational leaders possess a strong work ethics as well as strong principles of integrity. Being transformational leaders will help us to shape our current Healthcare System into a new constantly growing system of patient safety and improved quality of care. Reminding the nurses and staff that the communication among staff members is a positive exchange of information, and is imperative for providing safe, veteran centered care for each resident, will be task completed by the project manager.

### **Project Schedule**

At the beginning of the project the Project Proposal will be developed and discussed with preceptor on weekly bases: two dedicated hours per week, for eight weeks. In week eight of NR 702 Practicum the facility's research officer will be contacted to find out the facilities policy on utilizing an Institutional Review Boards (IRB). In the NR 705 Practicum course the proposal to the IRB boards will be developed and discussed with the preceptor on weekly bases: two hours a week. Towards the end of the eight weeks period the proposal will be sent to the appropriate IRB board and a decision will be send back to student and preceptor. Upon IRB board's approval in the first week of NR 707 a Teamwork Attitudes Questionnaire (T-TAQ) would be used pre- and post- course to measure the impact of an educational intervention on the knowledge and attitudes related to communication and teamwork (AHRQ, 2018). The implementation of the projects' educational offerings of TeamSTEPPS would be scheduled in the week two through seven of the

courses. In week eight of the course the post-questionnaires' will be offered. In the NR 709 the project outcomes will be finalized, and the project paper will be completed. The meeting with the preceptor will be completed weekly; two hours per week. In the last week of the class a power point presentation of the project implementation and project outcomes will be completed and disseminated to the Community Living Centers senior leadership and Chamberlain University's representatives (See Appendix C).

### **Resources Needed**

The implementation of the quality improvement project cannot guarantee any cash flow. The expenses used in the project are minimal and are not exceeding \$1622 (see Table 1).

### **Project Manager Role**

Writers' leadership qualities and skills for successful completion of the intended project will be utilized, as a DNP nursing student and quality and safety nurse coordinator for the Community Living Centers. The goal of the quality improvement project is to align with the daily dynamics of the CLC units, and to utilize the daily huddles, quality improvement huddles, and already established and ongoing interdisciplinary educational meetings for clear communication. The tracking and trending of data will be completed by the writer, in the role of a quality and safety nurse, in addition to other daily tracking and trending sheets, and placed on the Area Improvement Board with the rest of the measures followed by the CLC leadership. The communication from the meeting and rounds, regarding the matter of TeamSTEPPS approaches and interactive exercises, and the feedback from staff and nurses will be provided to the CLC leadership as a summary via work email Outlook.

### **Plans for Sustainability**

Often resistance to improvements is a manifestation of fear, such as feeling being left out

of the decision-making process or a lack of understanding of the benefits of a new process. One way to overcome this resistance is to be more compassionate about the person's views and to reassure them that it's an iterative process.

Some of the anticipated challenges when implementing the TeamSTEPPS initiative may be the staff turnover. The TeamSTEPPS 2.0 for Long-term Care curriculum training would be incorporated into the core competencies for the Community Living Centers' existing job positions. The leadership team would be motivated by incorporating All Employee Survey results, including measures such as staff perceptions and attitudes towards communication, in the CLC units' performance measures. The training would be incorporated "in addition to" usual care, through staff orientation, and annual training. It would be also included in existing processes, such as unit-based council meetings, staff huddles, quality improvement huddles. The training would be also incorporated as a part of local policy, and procedures, such as standard operational procedures for the local Community Living Center.

To ensure consistency in investment/support across levels of leadership and services, and empowerment of nursing staff, shared goals and teamwork would be rewarded. There would be an emphasis on value for staff safety and morale in place, with set goals to improve care and workplace for everyone. To remedy the negative notion of difficulty to "get the word out" and ask for needed support in sustaining the practice change the TeamSTEPPS initiative would be included as agenda item in relevant committee meetings, and quality improvement huddles. When there is a resistance to the team model, the consistent message "team approach and the veteran's centered care is everyone's job" would be communicated, as well as the veteran-centered principles of the VA Strategic Plan, Community Living Centers' cultural transformation, and the Long-Term Care Institute surveys.



### **Project Vision, Mission, and Objectives**

As an employee at the Veterans Affairs (VA) Healthcare system, we are honored to serve our nations veterans. As a nurses and VA employees, we are bound by my personal values and beliefs as well as the VA Integrity Commitment Advocacy, Respect, Excellence (ICARE) core values to serve those who used their freedoms and selflessly risked their own lives to protect and secure our Great Nation (Department of Veterans Affairs, 2018). The VA mission is to honor America's veterans by providing exceptional healthcare that improves their health and well-being. The Core Values of the organization are the ICARE values: Integrity: to adhere to the highest professional standards in order to serve our nations' veterans; Commitment: to serve veterans with due diligence; Advocacy: to have our veterans best interest in mind, while providing healthcare and other services; Respect: treat our veterans and colleagues with utmost respect; Excellence: to strive to deliver services of highest quality and to seek continuous improvement (Department of Veterans Affairs, 2017). The quality initiative is well aligned with the VA Healthcare System strategies plan framework which includes but is not limited to: excellence in provision of care to our nation's veterans, continuous improvement in services provided, and veteran centered personalized care. As the world's largest healthcare organization, the VA Healthcare System has been monitored very closely by the Office of Inspector General, in regard to organizational ethics, organizational integrity, and organizational values (Department of Veterans Affairs, 2018).

As stated in the research article by Head and Alford (2015) public organizations can benefit from approaches to addressing problem complexity and stakeholder divergence based on systems thinking, collaboration and coordination, and the adaptive leadership roles of public leaders and managers (Head & Alford, 2015). Head and Alford recognized some challenges for public management from key functional areas of government, such as

but not limited to: strategy making, organizational design, people management, and performance measurement (2015). In their research article, Head and Alford noted that the provisional solutions can be developed, despite the difficulties of reforming governance processes to address so called "wicked problems" more effectively. The authors proposed some strategies for dealing with problems under this governmental and administrative constraint, such as "going beyond technical/rational thinking, collaborative working, and new modes of leadership, and reforming the managerial infrastructure of government" (Head, & Alford, 2015).

As a Doctor of Nursing practice pre-pared nursing leaders, could ask team members to suspend their disbelief and to hold all judgments of the process. On occasion there may be a little skepticism because teams are required to believe in the positive outcomes of processes they are unfamiliar with. Since one cannot form a fair judgment to evaluate the project on an individual's belief system, a DNP pre-pared project leader would be necessary to ask the team to suspend their disbelief and make their judgment based purely on where the data may lead. As a short-term objective, the expectations for staff' attitudes towards teamwork and communication are to show improvement. Some of the long-term expectations are for the sustainability of the project, through staff education, and competencies. The score from all employee surveys should be improved in the areas of staff's feelings towards teamwork and communication, further embracing diversity. Improvements, such as effective positive team communication, ultimately may lead to improvement in patient safety and outcomes. Overall, the reputation of the VA Community Living Centers as a valuable employer will improve, aligning with the improvement of outcomes for veterans.

## **PICOT Question**

To place a clear practice question, in support of the existing problem and the proposed intervention for improvement of the practice situation, the following PICOT question will serve as the basis for the proposed DNP project:

"For nurses and staff on Units A5S, A6S and A6N at John D. Dingell, VA Medical Center, in Detroit, Michigan will the implementation of TeamSTEPPS improve attitudes associated with teamwork and communication in 8-10 weeks?"

### **Population**

The population of the intended project change is the nurses and staff on units A5S, A6S, and A6N at John D Dingell VA Medical Center, Detroit, Michigan. The DNP quality improvement project consists of approximately 100 staff members who work in the Community Living Center's VA Medical Center, John D Dingell Detroit, Michigan, in units with long-term care, hospice, orthopedic rehab, and short stay skilled specialties. The VA Medical Center, in Detroit, Michigan is a teaching facility, and the Community Living Center, units A5S, A6S, A6N include physicians for long-term care, hospice, rehab, short stay, nurse practitioners, hospice case work registered nurses, quality registered nurse, restorative registered nurse, minimum data set coordinator registered nurse, resident assessment coordinator registered nurse, staff registered nurses, licensed practical nurses, and certified nursing assistants. There would be no need of consent forms since the data will not include individually identifying information.

The participants sample would be staff and nurses serving the residents at the Community Living Center. In addition, the TeamSTEPPS implementation will help the new employees joining the team to engage in team activities and improve their communication skill set. Towards the end of fiscal year 2018 there were many staff members in all three units who retired and/or transferred within the VA Healthcare System. For example, unit A5S had accepted four new

employees which is 12.5% of the staff for this unit (staff for A5S N=32); Unit A6S had accepted five new employees which is 20% of the staff for this unit (staff for A6S N=25); Unit A6N had accepted five new employees which is 23% of the staff for this unit (staff for A6N N=22).

### **Intervention**

The chosen intervention for the practice changes project is TeamSTEPPS for Long-term Care curriculum (AHRQ, 2018). On the first day of implementation of the TeamSTEPPS quality improvement project, after the Institutional Review Board (IRB) approval, the Teamwork Attitudes Questionnaire (T-TAQ) and will be given to the staff to establish a base line of their teamwork attitudes. The implementation will consist of a didactic portion accompanied with PowerPoint and interactive exercises. Upon completion of the implementation process, the same questionnaire will be administered to the staff, and the results will be compared and statistically analyzed.

As already stated previously, due to the implementation of the TeamSTEPPS program, as a result of a training in a local Long-term Care facilities on the programs' principles, strategies, and techniques, was noted that there were significant changes in the participants' individual roles and responsibilities, team communication, knowledge of assessment and monitoring, and the use of hand off communications to improve patient safety (Abraham, Dever, & Roman, 2017). A case study by Cooke (2016), aimed to determine the impact of an educational intervention on the knowledge and attitudes related to communication and teamwork in the health care risk management population. The teamwork education was tailored to the needs of the specific audience which resulted in knowledge gained and improved attitudes toward the components of teamwork (Cooke, 2016; Keller, Eggenberger, Belkowitz, Sarsekeyeva, & Zito, 2013; Abraham, Dever, & Roman, 2017).

### **Comparison**

Currently the units are utilizing the previously mentioned relationship-based care practices (RBC). According to Johnson and Ezekielian (2014), it is

important that the teams take ownership in the service provided to their patients with the utilization of the already presented RBC process improvement project. Choosing the attitude of working together is a way of moving towards behavior choices leading to positive outcomes for the team members but most of all the patients who they serve. There is a lack of communication and teamwork among nurses and staff at the Community Living Centers' units, which can negatively impact patient outcomes and the quality of care provided.

#### **Outcome**

The outcomes of the project are improved attitudes and perceptions associated with teamwork and communication. As already stated, the Teamwork Attitudes Questionnaire (T-TAQ) will be given to the staff to establish a base line of their teamwork attitudes and perceptions. The T-TAQ is consisting of 30 questions. The team members will respond to a Likert scale of items, which will include responses from 1 (strongly disagree) to 5 (strongly agree). The surveys would be administered in pen/paper, and they would be administered pre- and post- intervention. It will take approximately 15 minutes each (roughly answering each question in thirty seconds.) As per the Agency for Healthcare Research and Quality, the questionnaires were tested for validity and all cases met the criteria for inclusion (AHRQ, 2017).

#### **Time Frame**

The time frame for completion of the proposed DNP project is eight to 10 weeks.

#### **Feasibility**

As stated previously upon IRB board's approval in the first week of NR 707 a Teamwork Attitudes Questionnaire (T-TAQ) would be used pre--and post--course to measure the impact of an educational intervention on the knowledge and attitudes related to communication and teamwork (AHRQ, 2018). The educational offerings of TeamSTEPPS would be scheduled in the week two through seven of the courses. In week eight of the course, the post- questionnaires will be offered. In the NR 709 the project outcomes will be finalized,

and the project paper will be completed. The meeting with the preceptor will be completed weekly for two hours. In the last week of the class a PowerPoint presentation of the project implementation and project outcomes will be completed and disseminated to the Community Living Centers' senior leadership and Chamberlain University's representative.

The aforementioned organization has a mixture of cultures which has been proven to impact the implementation of change. We have a nurse who has been in our organization VA medical Center, Detroit, Michigan, for thirty plus years, as well as a newly graduates with less than a year of experience in nursing practice (Rogers, 1983) Some are demonstrating a culture of browbeating nursing staff to effect change, while some of them demonstrate a culture of empowerment (Rogers, 1983).

The implementation of TeamSTEPPS would be imperative for guiding the staff to better understand their own attitudes and perceptions towards communication and teamwork. With the staff training, interactive exercises, dissemination of findings at huddles, incorporating of the training in the competencies, the organizational roles and staff expectations regarding communication and teamwork would be better understood. For example, helping a person move from Prochaska's steps of contemplation to reflection, where they recognize the need for change and make up their mind is often the most difficult transition. The staff members may already be comfortable with what they already know, and the way things are going in their units. The nurses and staff in those units may not see the damage and complications from impaired teamwork and communication. TeamSTEPPS educational intervention would be a great remedy in the cases of the Community Living Centers' units where there is a lack of communication and teamwork amongst nurses and staff at the site, which can negatively impact veteran's outcomes and the quality of care provided.

The VA Healthcare System is a learning system of excellence, and as such, facilitation is used as guidelines of the processes for intraprofessional interactions in the facility. In our organization, the organizational learning theory has been utilized, and it arises from its potential to support uptake and application of scientific knowledge that stands to improve clinical and managerial decision-making, practice, and ultimately patient outcomes and organizational performance (Berta et al., 2015).

At the VA Medical Center John D Dingell in Detroit, Michigan, healthcare huddles had been used as an essential managerial strategy for high-performing health care organizations, which includes meaningful conversations, enhanced relationships, and a learning culture (Provost, Lanham, Leykum, McDaniel & Pugh, 2015). By continuously utilizing huddles, managers have potential to create conditions from which huddles support efforts to improve patient safety and create opportunities for interactions to take place among the nursing staff caring for our veterans and bring mindfulness into the organization (Provost, Lanham, Leykum, McDaniel & Pugh, 2015). The TeamSTEPPS 2.0 for Long-term Care curriculum training is well equipped with strategies and interactive exercises, geared towards improved communication and teamwork among healthcare workers.

A team resistance could form while implementing the project. Often team resistance is based on fear which is typically fueled by a lack of understanding of the problem. The catalyst for this fear can be perpetuated by unclear expectations and undefined roles. To mitigate this problem, it is necessary to ensure that clear responsibilities are communicated for each team member and on the other hand, each team member understands all of the priorities. By doing so, the team has a vested interest in owning the process, ensuring the right root causes are worked on and will continue to realize the sustained gains. As a DNP pre-pped nursing leader, one can ask team members to

suspend their disbelief and to hold all judgments until the end of the process. I have noticed that there is a little skepticism, since teams are required to have a leap of faith by believing in a process that they are unfamiliar with. Since one cannot form a fair judgment to evaluate the project on an individual's belief system, as a DNP prepared project leader one may ask the team to suspend their disbelief and make their judgment based purely on where the data may lead.

Communication can be very challenging and varies depending on the role, the stage of implementation, and with whom we are communicating. To ensure successful implementation of the quality improvement project there must be a balance in communications (Abudi, 2013). To avoid the imbalance, one can work with the project team and key stakeholders to determine: who needs to know what, how often to share, and by what means of communication is needed. One must also take the time to plan for communication and understand the stakeholders early in the project.

### **Sample and Setting**

This DNP change project will take place in a VA Medical Center Community Living Center, housing residents under the long-term care, hospice, orthopedic rehab, and short stay skilled specialties. The Community Living Centers are the VA version of the private sector nursing homes. Regarding the organizational structure and culture, the DNP project leader will need to work on the delivery of implementation of the project change for the interdisciplinary team members. Some anticipated challenges are getting colleagues from various disciplines to be available for training together at the same time. The estimate time needed for the anticipated training would be approximately eight hours long, consisting of six hours of lecturing a PowerPoint presentation, interactive exercises, two fifteen minutes breaks, one-hour lunch, and thirty minutes for questions and answers, as well as discussions. To be successful would be imperative to seek a buy in from the leadership in various

departments of VA Medical Center John D Dingell, such as; Nursing, Chaplain Services, Social work, Mental Health, Providers, Restorative therapy, and Recreational therapy. The Associate Chief of Geriatrics and Rehabilitation Services will be involved in working with the various departments' Chiefs to ensure the availability of the staff members for the training. Also, as a benefit to the participants the DNP project leader will work on getting permission to offer continuous educational credits for the disciplines involved meeting some of their professional needs.

### **Implementation Plan/Procedures**

This DNP practice change project is geared towards improving staff perceptions and attitudes towards teamwork and communication, using the TeamSTEPPS 2.0 for Long-Term Care curriculum approach. The quality improvement project is evidence-based, using a quasi-experimental approach for data collection, data trending, and data analysis. The scheduled TeamSTEPPS 2.0 for Long-term Care curriculum educational sessions are didactic, with an interactive portion for staff, allowing the staff to engage in teamwork activities and communication, by asking questions and answering questions throughout the educational sessions. The staff and nurses of the Community Living Centers units A5S, A6S, and A6N at the VA Medical Center John D Dingell, Detroit, Michigan will complete questionnaires regarding perceptions and attitudes towards teamwork and communication.

According to TeamSTEPPS implementation guidelines, a team-based system approach encourages dual focus, informed decision making, clear understanding of teamwork, mutual support, and team improvement. Each session is going to be focused on effective standards of communication: complete communication, clear communication, brief communication, timely communication, and how to provide teammates with constructive and timely feedback. The participants are going to learn about the importance of promoting and modeling teamwork, the importance of situation monitoring, the importance of task assistance, as well as the

importance of mutual support, which will lead to improved provision of veteran centered care, through effective support of fellow team members. Each session will also be focused on how to assertively advocate for the provision of the best quality of care for our nations' veterans (AHRQ, n.d.).

TeamSTEPPS 2.0 for Long-Term Care curriculum is a federally recognized national program with free access to all interested healthcare organizations. The program is readily accessible, without the requirement of permission access for its use. The TeamSTEPPS 2.0 for Long-Term Care curriculum consists of a three-phased process with a primary focus on creating and sustaining a culture of safety. The first phase is a pre--training assessment for site readiness, which is satisfied by the identifying of opportunities for improvement, as well as determination of the institutional readiness, including the leadership support. The second phase includes planning, training, and implementation. The third phase is sustaining the implementation of TeamSTEPPS (AHRQ, n.d.).

The opportunities identified included improving staff perceptions and attitudes towards teamwork and communication. The aim of TeamSTEPPS is to optimize patient outcomes by improving communication and teamwork skills among health care professionals (Vertino, 2014). Using TeamSTEPPS successfully will result in three outcomes, as Plonien and Williams (2015) have stated: the implementation of knowledge, attitude, and performance. As per Plonien and Williams (2015), TeamSTEPPS curriculum has been in its development during 25-year period. As for the purposes of this quality improvement project, the TeamSTEPPS has been customized to fit the team's performance in long-term care settings.

During the planning, training, and implementation phase for the Community Living Centers' units, the Teamwork Attitudes Questionnaire (T-TAQ), and educational TeamSTEPPS strategies would be used to address

opportunities for improvements that were identified in phase one. During phase two, the components of TeamSTEPPS are to be incorporated into practice, which includes a three-hour educational didactic power point presentation, with interactive exercises.

In conjunction with nursing leadership, a plan will be developed to determine effectiveness of interventions. The Community Living Centers' staff and nurses will complete the Teamwork Attitudes Questionnaire (T-TAQ) prior to the educational interventions. The same questionnaires will be administered to staff and nurses again, as post-educational interventions, to collect data for further review of the outcomes (AHRQ, 2018).

#### **Data Collection Procedures**

As already stated above, the Teamwork Attitudes Questionnaire (T-TAQ), which is 30 questions, 5-point Likert scale tool used in providing a quantitative assessment of individual attitudes as they relate to teamwork in healthcare care delivery. The T-TAQ is suitable for a single department, and organization's wide. This tool will be used to measure the effectiveness of the TeamSTEPPS educational program by comparison of pre- and post-assessments. The five constructs included in the T-TAQ for this project are team structure, leadership support, situational monitoring, mutual support, and communication.

The sample participants will be asked to complete the T-TAQ before and after the TeamSTEPPS training. The survey data from each will be entered into Excel data base: a spreadsheet developed by Microsoft for Windows, which features calculation, graphing tools, pivot tables, and a macro programming language called visual Basis for Application. From the Excel data base, the data will be statistically compared with the use of the Minitab 18 software package used for interactive, or batched statistical analysis (Minitab, n.d.). To compare both points' assessment scores on the TTAQ, repeated measures of analysis of variance (ANOVA) statistical test would be performed on construct average scores: one test for each construct in each questionnaire.

There will be a various graphs included in the appendices with pre- and post- test measurement showing the results of the observations, utilizing the tool provided above, in the areas of Team Structure (Figure Team Structure Category), Leadership (Figure Leadership Category), Situation Monitoring (Figure Situational Monitoring Category), Mutual Support (Figure Mutual Support Category), and Communication (Figure Communication Category). The blue color bars represent the observations seen before TeamSTEPPS educational offerings implementation and the red color bars represent the data from the observations done after TeamSTEPPS educational offerings implementation. All this information will be also disseminated as visual graphs at each unit's area of improvement boards.

#### **Recruitment and Selection**

The staff included in the teaching sessions of TeamSTEPPS for Long-Term Care Curriculum will include all staff and nurses at Community Living Centers' units A5S, A6S, and A6N at VA Medical Center John D Dingell, including registered nurses, certified nursing assistants, licensed practical nurses, and other support staff. There would be around eighty staff members and nurses who will attend TeamSTEPPS education sessions. For this project, the staff members would agree to participate by taking the pre-test and post-test questionnaire. The quantitative project design would use a quasi-experimental approach for data collection and analysis, appropriate for the quality improvement project. Prior to the administration of the pre-questionnaire, the staff will be asked if they would participate in the quality improvement study. Answering the questionnaires voluntarily will serve as an implied consent.

#### **Data Analysis Plan**

To collect, track, trend, and analyze data, the pre- and post- test TeamSTEPPS questionnaire would be used by the project leader before and after implementation of the TeamSTEPPS educational sessions. The questionnaires are developed using Likert scale to measure perceptions and attitudes about communication and teamwork. The questions

were reviewed by VA Medical Center Community Living Centers' Leadership and Institutional Review Board (IRB) and found to be of acceptable clarity. The staff would complete a pre- and post-questionnaire to measure attitudes and perceptions towards teamwork and communication before and after the implementation of TeamSTEPPS, based upon the education session, immediately prior to and after each session. The TeamSTEPPS questionnaires: Teamwork Attitudes Questionnaire (T-TAQ) containing questions focused on staffs' own perception and attitude towards teamwork and communication. The participants would submit the pre- and post- test questionnaire in sealed envelopes to make sure that questionnaires remain anonymous. To fully address the way data would be statistically (quantitatively) analyzed, the excel spreadsheet with the data would be collected. The data collected from the measurement instruments listed above the T-TAQ consist of 30 questions. The team members will respond to Likert scale items, which will include responses from 1 (strongly disagree) to 5 (strongly agree).

#### **Instrumentation**

After the Institutional Review Board (IRB) approval, on the first day of implementation of the TeamSTEPPS quality improvement project, the Teamwork Attitudes Questionnaire (T-TAQ) will be given to the staff to establish a baseline of their teamwork attitudes and perceptions.

As already stated, the Teamwork Attitudes Questionnaire (T-TAQ) will be given to the staff to establish a baseline of their teamwork attitudes and perceptions. The T-TAQ consists of 30 questions. The team members will respond to Likert scale items, which will include responses from 1 (strongly disagree) to 5 (strongly agree). The surveys would be administered in pen/paper, and they would be administered pre- and post-intervention. The participants will take approximately 15 minutes to complete each questionnaire (approximately answering each question in thirty seconds.)

#### **Instrument Reliability and Validity**

TeamSTEPPS is a team-training intervention which shows promise in aiding the mitigation of medical errors. A study by Minnoo Fatemeh, Maryam, and Mandana (2013) examines the reliability and validity of Team STEPPS Teamwork Attitudes Questionnaire (T-TAQ) in an Iranian context. The authors ensured that the questionnaire was translated and back translated to determine external validity, as well as used test-retest method to estimate the reliability of the instrument (Minnoo Fatemeh, Maryam, & Mandana, 2013) According to the study results, the questionnaire has showed validity and reliability (Minnoo Fatemeh, Maryam, & Mandana, 2013).

As per the Agency for Healthcare Research and Quality, the questionnaire was tested for validity, and all cases met the criteria for inclusion (AHRQ, 2017). The questionnaire is a construct-valid instruments and reliable tool, which can be utilized for measuring outcomes, in teamwork attitudes and perception, and other constructs, such as communication, leadership, situation monitoring, and mutual support (AHRQ, 2017).

#### **Ethics and Human Subjects Protection**

At the beginning of each TeamSTEPPS class, the project leader would ask staff members if they would participate in the quality improvement study, answering the questionnaires served as implied consent. The pre- and post- test questionnaire will contain questions that addressed staffs' attitudes towards communication, and teamwork. Demographic questions included in the pre- and post- test questionnaire would address the type of staff member: nursing assistant, nurse practitioner, registered nurse, licensed practical nurse, etc. During data collection, no staff names or protected health information were included. The project manager will submit an Institutional Review Board (IRB) application, with the anticipation that the project will be noted as a quality improvement project for the organization, and no oversight for a Human Participant Research subjects will be necessary. Inclusion criteria will include all

Community Living Centers' nurses and staff. Descriptive statistics would be used during the analysis of the pre- test and post- test questionnaire data. Excel spreadsheet and Minitab 18 statistical software will be used to analyze the pre-test and post- test data. The data will be stored on a password-protected shared drive that only the project leader knows, and will be kept secure for seven years.

#### **CHAPTER 4: RESULTS AND DISCUSSION OF DNP PROJECT**

The purpose of this project was to identify the effectiveness of initiation of team training in response to communication and team behavior deficiencies. The project was implemented among nurses and staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center. This evidence-based project seeks to evaluate the quality of communication and attitudes associated with teamwork and communication in the long-term care settings at an urban VA Medical Center in Detroit, Michigan.

The data collected for the purposes of the quality improvement project was primary data. This data was collected from first-hand sources using survey method. The data was collected directly from the following primary sources: staff and nurses from Community Living Centers, VA Medical Center John D Dingell, Units A5S, A6S, and A6N. To protect autonomy, staff and patient names were removed during the collection process. The inclusion criterion for the study includes all Community Living Centers' nurses and staff. The descriptive statistics will be analyzed in statistical software such as Minitab. Minitab would be used during the analysis of the pre- test and post- test questionnaire data. Excel spreadsheet and Minitab 18 software are utilized to analyze the pre-test and post- test data. The data is stored on a password-protected shared drive that only the project leader knows and will be kept secure for seven years. After seven years the data will be

recycled by a destruction service facility in a manner that does not allow any data recovery.

#### **Summary of Methods and Procedures**

The field of statistics provides principles and methods for collecting, summarizing, and analyzing data, and for interpreting the results. By utilizing statistics we are able to describe data and make inferences. Then, the inferences are used to improve processes and products.

During the planning, training, and implementation phase one for the Community Living Centers' units, the Teamwork Attitudes Questionnaire (T-TAQ) and educational TeamSTEPPS strategies would be used to address opportunities for improvements. During phase two, the components of TeamSTEPPS are to be incorporated into practice, which includes a three-hour educational didactic PowerPoint presentation, with interactive exercises. Upon completion of the educational offerings, the T-TAQ questionnaire would be administered again and the collected pre- and post- data stored and available for further analyses.

In conjunction with nursing leadership, a plan was developed to determine effectiveness of interventions. The Community Living Centers' staff and nurses had completed the Teamwork Attitudes Questionnaire (T-TAQ) prior to the educational interventions. The same questionnaires will be administered to staff and nurses again, as post-educational interventions, to collect data for further review of the outcomes (AHRQ, 2018).

TeamSTEPPS Teamwork Attitudes Questionnaire for LTC Questionnaire is consisting of five categories:

- ✓ TS –Team Structure
- ✓ TL –Leadership
- ✓ SM –Situation Monitoring



✓ MS -Mutual Support

✓ TC- Communication

(AHRQ, 2017)

As already stated, the Teamwork Attitudes Questionnaire (T-TAQ) will be given to the staff to establish a baseline of their teamwork attitudes and perceptions. The T-TAQ consists of 30 questions. The team members will respond to Likert scale items, which will include responses from 1 (strongly disagree) to 5 (strongly agree) (AHRQ, 2018). The surveys were administered in pen/paper, and it was administered pre- and post-intervention.

The collected pre- and post- data were placed in Excel spreadsheets and tabulated yielding positive outcomes in all five categories: team structure, leadership, situational monitoring, mutual support, and communication. There would be more statistical measurements completed with the use of the statistics software Minitab. By utilizing Minitab the missing data would be handled by analysis-directly applying methods unaffected by the missing values. As per Minitab software settings when a cell doesn't contain any data and is between other cells that do contain data, the value is noted as a missing value (Minitab, n.d.) In cases when value is missing from a column of numeric or date/time data, Minitab denotes it with an asterisk (Minitab n.d.). By default, Minitab displays all missing values in your tables, but does not include them in calculations unless you check Include displayed missing values in calculations in the Options sub-dialog box (Minitab, n.d.) When a data point is missing, by default, the entire worksheet row (observation) is omitted from the calculation (Minitab, n.d.) For the purposes of the Quality Improvement outcome measures, all available data will be used, there would be any omissions.

### **Summary of Sample and Setting Characteristics**

As already stated previously, the project took place in a VA Medical Center Community

Living Center, housing residents under the long-term care, hospice, orthopedic rehab, and short stay skilled specialties. The intended project was a quasi-experimental nonequivalent control group design was used. The intended sample for participation in the study was consisting of approximately 100 staff members who work in the Community Living Center's VA Medical Center, John D Dingell Detroit, Michigan, in units with long-term care, hospice, orthopedic rehab, and short stay skilled specialties. The VA Medical Center, in Detroit, Michigan is a teaching facility, and the Community Living Center, units A5S, A6S, A6N include physicians for long-term care, hospice, rehab, short stay, nurse practitioners, hospice case work registered nurses, quality registered nurse, restorative registered nurse, minimum data set coordinator registered nurse, resident assessment coordinator registered nurse, staff registered nurses, licensed practical nurses, and certified nursing assistants

There were nine offerings all together yielding 77 attendees from all the offerings combined. All of the participants have completed the post- questionnaire as planned. The staff mix of the participants was as follows: three nurse practitioners, two administrative officers, three social workers, one case manager, one restorative coordinator, two recreational therapists, one medical director, one rehabilitation nurse coordinator, two physicians, three clinical nurse managers, two Minimal Data Set nurse coordinators, fifteen licensed practical nurses, nineteen registered nurses, and sixteen certified nursing assistants. Overall, there were 77 pre-questionnaire surveys and 71 post- questionnaire surveys completed by staff and nurses from the Community Living Centers' unit's A5S, A6S, and A6N.

The final survey count yields a 77% (77 participants from the intended 100) of the intended survey participation. At the time of the project implementation there were several additional mandatory educational offerings at the facility, which hindered the participation in the

TeamSTEPPS educational offerings, as well as there was staff on annual leave and unanticipated medical leave.

### **Major Findings**

The collected pre- and post- data was placed in Excel spreadsheets and tabulated yielding positive outcomes in all five categories: team structure, leadership, situational monitoring, mutual support, and communication. The collected data was further analyzed using the statistical software Minitab 18. The descriptive statistics were used using a sample two T test on pre- and post- data. Secondly, other data collected included the standard deviation and the standard error of the mean. The data, p-value and t-value, from the five categories were found to vary in the statistical significance ranking (see Table 2). As the results were analyzed and completed there was a non-significant result in the Team Structure Category and Communication Category as p-values are great than 0.05(see Table 2: Question grouping). With further analysis, it appeared as if the responses had a ceiling effect. A sizable number of pre-intervention responses were either “Strongly Agree” (to questions intended for participants to strongly agree with) or “Strongly Disagree” (to questions intended for participants to not want to agree with), similarly the results indicated the same responses post-intervention which ultimately led to the data calculation of agreement or disagreement to be close to the same. The descriptive statistical measures showed that the standard deviation of the mean is low, which means that the data is very closely related to the average (see Table 2). However, for a detailed future research, focus groups can be arranged and further look into the descriptive statistical data would be needed.

The results indicated that the staffs’ attitude towards teamwork and communication had improved after the implementation of the TeamSTEPPS educational offerings. The results in the Team Structure Category had shown that there was significant increase in attitudes towards the importance of the leadership administration of the Community Living Centers for the success of the

direct care teams (see Figure Team Structure Category). Question one and question two in the Team Structure Category increased to 100%. After the implementation of the PowerPoint presentation and interactive exercises all of the participants agree of the importance of including the residents and their family members in the care process of the Community Living Centers nursing care team, as well as seeking their feedback (see Figure Team Structure Category). There is also an increase of the attitudes towards the effective team members and their importance for the team success (see question four, Figure Team Structure Category). There is also increase in positive attitudes towards the value of the team mission versus the goals of the individual team members (see question four, Figure Team Structure Category).

In the Communication Category the results show improved attitudes in all questions, including the importance of standardized methods for sharing information and training (see Figure Communication Category). All of the participants showed positive attitudes when it comes to believing that individuals can learn how to communicate (see question 30, Figure Communication Category). There was an increase of attitudes towards agreeing that poor communication can lead to reported errors (see questions 25, 26, Figure Communication Category). There was a significant improvement in attitudes in the area of importance in clarity of communication and standardizing of communication. Participant’s answers in questions 28 and 29 increased by approximately 8.6% and respectively 6.1% in those areas (see questions 28, 19, Figure Communication Category). Overall the implementation of the TeamSTEPPS educational offerings was viewed as a success by the participants: staff members and nurses from Community Living Centers units A5S, A6S, and A6N, as evident by the positive comments at huddles and as written in the additional portion for comments in the questionnaires. In the comments section of the questionnaire there were a several comments, among which there was the following comment:

“Great job! The presentation empowered me to practice effectively and uphold to standards that will build teamwork and facilitate positive outcome in patient care.”

## **CHAPTER 5: IMPLICATIONS IN PRACTICE AND CONCLUSIONS**

As stated previously, improvements in healthcare, such as effective teamwork, and positive communication, ultimately may lead to improvement in patient safety and outcomes. These communication patterns and improved team engagements can facilitate or prohibit positive change. Communication failures can compromise both patient safety and medical outcomes.

### **Implications for Nursing Practice**

The driving impetus for this quality improvement project is based on the pre-mise that medical care is a team effort, as patient care has become more complex, in long-term care settings in a veteran administration medical center facility. It is imperative for the future transformational nursing leaders to assess the staffs' and nurses' attitudes in the healthcare practice, as they strive to improve nursing practice and promote a positive optimized healthcare environment. The Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) 2.0 for Long-Term Care curriculum approach will be utilized to assist staff with improvement of staffs' and nurses' attitudes towards communication and teamwork (AHRQ, n.d.). This early work suggests that this approach, with unit-based coaching, can significantly improve staffs' attitudes towards communication and teamwork performance.

### **Recommendations**

Based on the project findings, this early work suggests that this approach, with unit-based coaching can significantly improve communication and teamwork performance. The summary of the major findings concludes that with the implementation of the TeamSTEPPS educational offerings for Long-Term Care Curriculum, positive

outcomes in all five categories: team structure, leadership, situational monitoring, mutual support, and communication are achieved

The attitudes towards teamwork and communication amongst the staff and nurses at the long-term care units had shown improvement. It would be imperative for other long-term care units to conduct similar project to build upon those findings and add new recommendations in the current healthcare literature. As a nursing leaders and future healthcare policy developers and administrators we should look into finding new information regarding positive outcomes in strategies influencing healthcare workers in improving attitudes towards communication and teamwork. A future research in the area of long-term care settings is recommended to validate these projects findings.

### **Discussion**

A culture of safety is an important standard in every healthcare setting. Attitude change among nurses and staff in the long-term care settings is an essential step. The project findings supporting these attitude changes were realized after the implementation of the educational offerings. Evidence suggests that an exposure to the educational offerings of TeamSTEPPS strategies can change and sustain positive attitudes toward teamwork and communication, ultimately improving the culture of safety. A limitation of the project was that the participant's involvement was voluntary. The educational offerings and the administration of the questionnaire were conducted during a period of other mandatory educational offerings at the facility, which can account for the limitation of the participation in the educational PowerPoint offerings. Presentation of concepts in time periods not related to a clearly defined nursing competency could have resulted in participants not valuing these concepts as much as particular topics, as they relate to patient care and nursing staff competencies.

### **Plans for Dissemination**

In a collaborative discussion with the clinical nurse managers from the Community Living Centers' unit's A5S, A6S, A6N, the quality manager decided an electronic poster presentation to be created. Upon completion the poster e-presentation was shared with them and approved to be included in the facilities Intranet educational web page for dissemination and informational purposes.

In collaboration with the clinical nurse managers and assistant clinical nurse manager of the units, the TeamSTEPPS educational offerings were included in the annual Community Living Centers competencies, which as stated previously, will ensure the sustainability of the quality improvement project. In addition, there is a continuous collaborative discussion with my preceptor Associate Chief of Geriatrics and Extended Care services and the Chief of Education, Research, and Professional Practice at our facility, for the TeamSTEPPS educational offerings to be offered to other units at the beginning of fiscal year 2020.

This quality improvement project and results will be disseminated at the facility level through a PowerPoint presentation and e-poster posted on the facilities Intranet page and sent to staff and nurses through the Outlook work email. An abstract of the project and project outcomes was created and shared with the leadership team. The abstract was approved and uploaded in the VA Pulse site into to the Geriatrics and Extended Care Annual Symposium application mailbox. Upon approval by the Geriatrics and Extended Care Committee, an e- post-er with the project and the project outcomes would be showcased at the symposium held on September 10-12 in Atlanta, Georgia. This annual symposium gives opportunity to the VA Community Living Centers from all over the United States to share their best practices and quality improvement projects on a National level.

There is also an interest of submitting a manuscript to the American Nurse Today, the official peer-reviewed journal of the American Nurses Association, which is dedicated to integrating the art and science of nursing (ANA, n.d.) According to the American Nurses Associations official website American Nurse Today is a peer-reviewed journal that provides a voice for today's nurses in all specialties, all practice settings, and all organizational levels. The main objectives of the journal are to include an useful, practical information, to keep nurses up-to-date on evidence based best practices, to promote optimal patient outcomes, and enhances their careers(ANA, n.d.) American Nurse Today is indexed in the Cumulative Index to Nursing and Allied Health Literature (CINAHL) Database.

The focus of the featured article is improving attitudes associated with teamwork and communication among nurses and staff on Units A5S, A6S, and A6N at John D Dingell VA Medical Center, Detroit, Michigan. The purpose of this evidence-based project is to identify the effectiveness of the team training in response to communication and team behavior deficiencies among nurses and staff on Units A5S, A6S and A6N at John D. Dingell VA Medical Center. This evidence-based project seeks to evaluate the quality of communication and attitudes and perceptions associated with teamwork and communication in the long-term care settings at an urban VA Medical Center in Detroit, Michigan.

### **Conclusions and Contributions to the Profession of Nursing**

The goal of this evidence-based project was to evaluate the pre-sent state of staff attitudes towards quality of communication and teamwork, by the nurses and staff in the long-term care settings, based on the identified Teamwork Attitudes Questionnaire results (AHRQ, n.d.) The results of this evidence-based project may be used to provide direction for future education programs and will serve to aid in the development of a

nursing competency focused upon promoting optimal team engagement and staff satisfaction.

As evident from the project results, TeamSTEPPS educational offerings for Long-term Care Curriculum are needed in both nursing competencies and long-term care settings healthcare practice to document the impact of improved attitudes towards teamwork and communication, as they relate to team performance, patient safety, employee satisfaction/retention, and patient satisfaction. The project findings supported improved attitudes towards teamwork and communication after the implementation of the TeamSTEPPS for Long-Term Care 2.0 Curriculum. Future projects conducted in long-term care settings are needed to document reliable and valid measures of staff and nurses, improved attitudes towards teamwork and communication.

Table 2

Minitab 18 Descriptive statistics analysis  
 Results are shown below:

Team Structure Category	N	Mean	StDev	SE Mean
PreSurvey	77	4.328	0.716	0.082
PostSurvey	71	4.519	0.436	0.052
Mean Diff		0.191		

Leadership Category	N	Mean	StDev	SE Mean
PreSurvey	77	4.446	0.816	0.093
PostSurvey	71	4.723	0.378	0.045
Mean Diff		0.277		

Situation Monitoring Category	N	Mean	StDev	SE Mean
PreSurvey	77	4.264	0.757	0.086
PostSurvey	71	4.608	0.427	0.051
Mean Diff		0.344		

Mutual Support Category	N	Mean	StDev	SE Mean
PreSurvey	77	3.277	0.723	0.082
PostSurvey	71	3.532	0.723	0.086
Mean Diff		0.255		

Communication Category	N	Mean	StDev	SE Mean
PreSurvey	77	3.864	0.738	0.084
PostSurvey	71	4.049	0.636	0.076
Mean Diff		0.185		

Question Grouping  
 table 1

Team Structure Category	N	Mean	StDev	SE Mean	Value
Pre-T1	77	4.328	0.716	0.082	
Post-T1	71	4.519	0.436	0.052	
T-Value					-1.94
P-Value					0.055
Mean Diff		0.191			

table 2

Leadership Category	N	Mean	StDev	SE Mean
Pre-L1	77	4.446	0.816	0.093
Post-L1	71	4.723	0.378	0.046
T-Value				
P-Value				
Mean Diff		0.277		

table 3

Situation Monitoring Category	N	Mean	StDev	SE Mean
Pre-S1	77	4.264	0.757	0.088
Post-S1	71	4.608	0.427	0.052
T-Value				
P-Value				
Mean Diff		0.344		

table 4

Mutual Support Category	N	Mean	StDev	SE Mean
Pre-M1	77	3.277	0.723	0.083
Post-M1	71	3.532	0.723	0.087
T-Value				
P-Value				
Mean Diff		0.255		

table 5

Communication Category	N	Mean	StDev	SE Mean
Pre-C1	77	3.864	0.738	0.084
Post-C1	71	4.049	0.636	0.077
T-Value				
P-Value				
Mean Diff		0.185		

Note: Minitab 18 was used for statistical analysis  
 Statistical test: 2 sample t test

**Analysis**

**Comments**

As shown in table 1

Team Structure Category

has the following values:

Pre- survey mean: 4.328  
 Post- survey mean: 4.519  
 Pre- survey std dev: 0.716  
 Post- survey std dev: 0.436

Based on the P-Value of 0.055, there is no statistical significant between the surveys.

As shown in table 2, Leadership Category has the following values:

Pre- survey mean: 4.446  
 Post- survey mean: 4.723  
 Pre- survey std dev: 0.816  
 Post- survey std dev: 0.378

Based on the P-Value of 0.01, there is a modest statistical significant between the surveys.

As shown in table 3, Situation Monitoring Category has the following values:

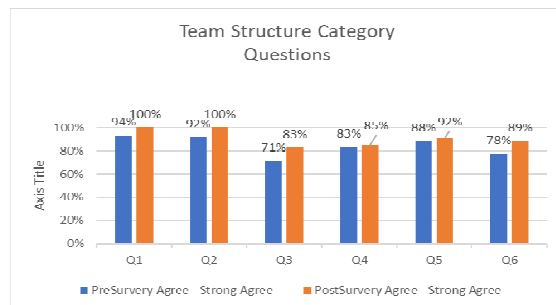
Pre- survey mean: 4.264  
 Post- survey mean: 4.608  
 Pre- survey std dev: 0.757  
 Post- survey std dev: 0.427

Based on the P-Value of 0.001, there is a little more than modest statistical significant between the surveys.

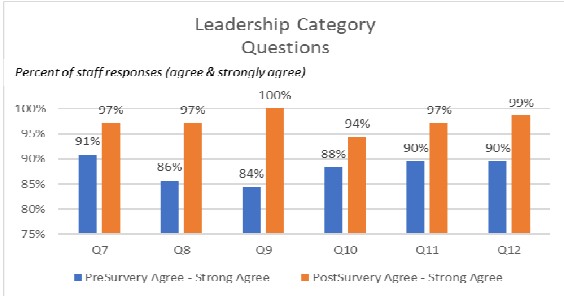
As shown in table 4, Mutual Support Category has the following values:

Pre- survey mean: 3.277  
 Post- survey mean: 3.532  
 Pre- survey std dev: 0.723  
 Post- survey std dev: 0.723

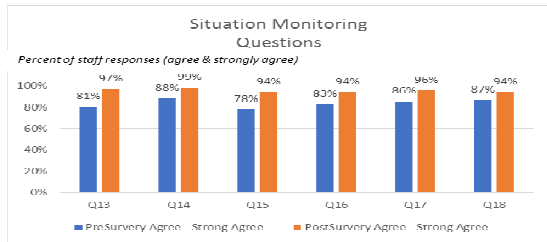
Based on the P-Value of 0.034, there is a modest statistical significant between the surveys.



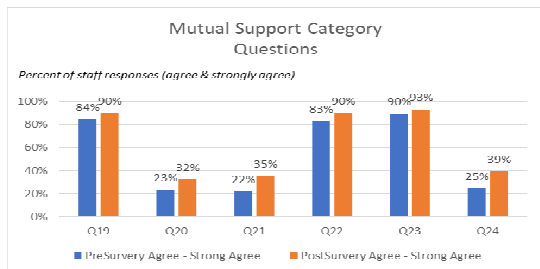
Q1	It is important to ask residents and their families for feedback regarding resident care.		
Q2	Residents are a critical component of the care team.		
Q3	This nursing home's administration influences the success of direct care teams.		
Q4	A team's mission is of greater value than the goals of individual team members.		
Q5	Effective team members can anticipate the needs of other team members.		
Q6	High performing teams in health care share common characteristics with high performing teams in other industries.		



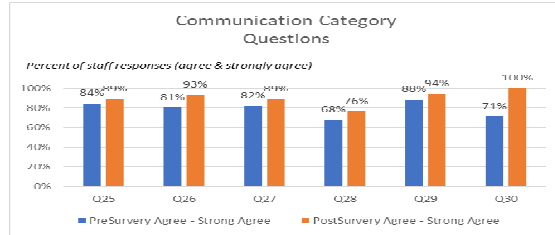
Q7	It is important for leaders to share information with team members.		
Q8	Leaders should create informal opportunities for team members to share information.		
Q9	Effective leaders view honest mistakes as meaningful learning opportunities.		
Q10	It is a leader's responsibility to model appropriate team behavior.		
Q11	It is important for leaders to take time to discuss with their team members plans for each resident.		
Q12	Team leaders should ensure that team members help each other out when necessary.		



Q13	Individuals can be taught how to scan the environment for important situational cues.		
Q14	Monitoring residents provides an important contribution to		
Q15	Even individuals who are not part of the direct care team should be encouraged to scan for and report changes in resident status.		
Q16	It is important to monitor the emotional and physical status of other team members.		
Q17	It is appropriate for one team member to offer assistance to another who may be too tired or stressed to perform a task.		
Q18	Team members who monitor their emotional and physical status on the job are more effective.		



Q19	To be effective, team members should understand the work of their fellow team members.		
Q20	Asking for assistance from a team member is a sign that an individual does not know how to do his/her job effectively.		
Q21	Providing assistance to team members is a sign that an individual does not have enough work to do.		
Q22	Offering to help a fellow team member with his/her individual work tasks is an effective tool for improving team performance.		
Q23	It is appropriate to continue to assert a resident safety concern until you are certain that it has been heard.		
Q24	Personal conflicts between team members do not affect resident safety.		



Q25	Teams that do not communicate effectively significantly increase their risk of committing errors.		
Q26	Poor communication is the most common cause of reported errors.		
Q27	Adverse events may be reduced by maintaining an information exchange with residents and their families.		
Q28	I prefer to work with team members who ask questions about information I provide.		
Q29	It is important to have a standardized method for sharing information when handing off residents.		
Q30	It is nearly impossible to train individuals how to be better communicators.		

## ACKNOWLEDGMENT

This paper was written in dedication to my husband Dominick Piscopo, my father Boyko Achkov, my mother Pepa Achkova, and especially my 12-years-old son Julian Piscopo, without whose support I would not have been able to complete my doctoral education in nursing. Thank you for your tremendous encouragement, enthusiasm, and invaluable loving support through the years!

It is always a pleasure to remind my peers and co-workers at the Community Living Centers, VA Medical Center, John D Dingell Detroit, Michigan for their sincere support and guidance. I am forever grateful to all the staff at unit A5 South for being there for me through the years while I have grown as a nursing professional and as a person.

First, I would like to thank my incredibly dedicated preceptor Dr. Marson. As a Chief of Geriatrics and Extended Care Services at the VA Healthcare System, preceptor, mentor, and incredible supportive figure, she strongly supported me in completing this project properly.

Second, I would like to thank Dr. Antony Avant, a Quality Manager at the Quality Management Department at the John D Dingell VA Medical Center, who provided guidance and

support in the utilization of the statistical software Minitab 18.

Thirdly, I also want to express my deepest thanks to Dr. Barbara Siepierski, Associate Director of the Community Living Centers John D Dingell, Detroit, Michigan who was a great recourse and provided training advisory.

Besides, I would like to thank Associate Chief of Education, Research, and Professional Practice at VA Medical Center, Detroit, Michigan Pamela Edmond-Scott for her support and much-needed guidelines. Thanks also to Michael Lundy, Clinical Nurse Manager at A5South, Ashley Davis, Clinical Nurse Manager at A6South, Allyson Johnson-Peterson, Clinical Nurse Manager at A6 North, and also Dr. Lynn Neely Director of Outpatient Mental Health Clinics at the VA Medical Center, Detroit, Michigan for extending their friendship towards me and ensuring a pleasure-training environment in the Community Living Centers Units A5 South, A6 South, and A6 North.

Thanks also to Dr. Pamela Reeves, Director of the Medical Center VA Detroit, and Associate Director Patient Care Services Belinda-Brown Tezera, for the incredible opportunity and support in managing matters related to this practice change proposal. Finally, I apologize to all other unnamed individuals who helped me in various ways to have an exceptional practicum experience.

## REFERENCES

- [1] Abraham, K., Dever, K., & Roman, T. (2017). TeamSTEPPS in Long-Term Care: An Academic Partnership. *Nursing Faculty/Staff Publications*. Paper 56. [https://fisherpub.sjfc.edu/nursing\\_facpub/56](https://fisherpub.sjfc.edu/nursing_facpub/56)
- [2] Abudi, G. (2013). Managing communications effectively and efficiently, 1-10. Retrieved from <https://www.pmi.org/learning/library/managing-communications-effectively-efficiently-5916>
- [3] Agency for Healthcare Research and Quality (2017). Teamwork perceptions questionnaire (T-TPQ) manual Retrieved from <http://www.ahrq.gov/teamstepps/instructor/reference>
- [4] Agency for Healthcare Research and Quality. (2013a). About TeamSTEPPS. Retrieved from [http://teamstepps.ahrq.gov/about-2cl\\_3.htm](http://teamstepps.ahrq.gov/about-2cl_3.htm)
- [5] Agency for Healthcare Research and Quality( AHRQ).(2018) TeamSTEPPS Instructor Manual:
- [6] Measurement Tools. Retrieved from <http://www.ahrq.gov/teamstepps/longtermcare/index.html> .
- [7] Agency for Healthcare Research & Quality (AHRQ) (n.d.). Team STEPPS 2.0 Retrieved from: <https://www.ahrq.gov/teamstepps/instructor/index.html>
- [8] Atkins, L., Francis, J., Islam, R., O'Connor, D., Patey, A., Ivers, N., ... & Lawton, R. (2017). A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. *Implementation Science*, 12(1), 77. Retrieved from <https://doi.org/10.1186/s13012-017-0605-9>
- [9] American Nurses Association (ANA) (n.d.). Author guidelines of American Nurse Today
- [10] Retrieved from <https://www.americannursetoday.com/author-guidelines>
- [11] Bae, S. H., Nikolaev, A., Seo, J. Y., & Castner, J. (2015). Health care provider social network analysis: a systematic review. *Nursing Outlook*, 63(5), 566-584. Retrieved from <https://doi.org/10.1016/j.outlook.2015.05.006>
- [12] Barton, G., Bruce, A., & Schreiber, R. (2018). Teaching nurses teamwork: Integrative review of competency-based team training in nursing education. *Nurse Education in Practice*, 32, 129-137. Retrieved from <https://doi.org/10.1016/j.nepr.2017.11.019>
- [13] Beiler, J., Opper, K., & Weiss, M. (2019). Integrating research and quality improvement using TeamSteps. *Clinical Nurse Specialist*, 1(1), 22-32. <https://doi.org/10.1097/NUR.0000000000000417>
- [14] Berta, W., Cranley, L., Dearing, J. W., Doherty, E. J., Squires, J. E., & Estabrooks, C. (2015). Why (we think) facilitation works: Insights from organizational learning theory. *Implementation Science*, 10(1), 141. Retrieved from <https://doi.org/10.1186/s13012-015-0323>
- [15] Cooke, M. (2016). TeamSTEPPS for health care risk managers: Improving teamwork and communication. *Journal of Healthcare Risk Management*, 36(1), 35-45. Retrieved from <https://doi.org/10.1002/jhrm.21233>
- [16] Dahlke, S., Stahlke, S., & Coatsworth-Puspoky, R. (2018). Influence of teamwork on health care workers' perceptions about care delivery and job satisfaction. *Journal of gerontological nursing*, 44(4), 37-44. Retrieved from <https://doi.org/10.3928/00989134-20180111-01>
- [17] Department of Veterans Affairs(2018). *ICARE Core Values* Retrieved from <https://www.va.gov/icare/>
- [18] Donaldson, M. S., Corrigan, J. M., & Kohn, L. T. (Eds.). (2000). *To Err Is Human: Building a Safer Health System* (Vol. 6). National Academies Press.
- [19] Dow, A. W., DiazGranados, D., Mazmanian, P. E., & Retchin, S. M. (2013). Applying organizational science to health care: A framework for collaborative practice. *Academic medicine: journal of the Association of American Medical Colleges*, 88(7), 952. doi: 10.1097/ACM.0b013e31829523d1
- [20] Epps, H. R., & Levin, P. E. (2015). The TeamSTEPPS approach to safety and quality. *Journal of Pediatric Orthopaedics*, 35, S30-S33. doi: 10.1097/BPO.0000000000000541
- [21] Gausvik, C., Lautar, A., Miller, L., Pallerla, H., & Schlaudecker, J. (2015). Structured nursing communication on interdisciplinary acute care teams improves perceptions of safety, efficiency, understanding of care plan and teamwork as well as job satisfaction. *Journal of Multidisciplinary Healthcare*, 8, 33.
- [22] Gharaveis, A., Hamilton, D. K., & Pati, D. (2018). The impact of environmental design on teamwork and communication in healthcare facilities: A systematic literature review. *HERD: Health Environments Research & Design*



- Journal, 11(1), 119-137 Retrieved from <https://doi.org/10.1177/1937586717730333>
- [45] Gould, N. J., Lorencatto, F., Stanworth, S. J., Michie, S., Prior, M. E., Glidewell, L., ... &
- [46] Francis, J. J. (2014). Application of theory to enhance audit and feedback interventions to increase the uptake of evidence-based transfusion practice: an intervention development protocol. *Implementation Science*, 9(1), 92. Retrieved from <https://doi.org/10.1186/s13012-014-0092-1>
- [47] Guraya, S. Y., & Barr, H. (2018). The effectiveness of interprofessional education in healthcare: a systematic review and meta-analysis. *The Kaohsiung journal of medical sciences*, 34(3), 160-165. Retrieved from <https://doi.org/10.1016/j.kjms.2017.12.009>
- [49] Head, B. W., & Alford, J. (2015). Wicked problems: Implications for public policy and management. *Administration & Society*, 47(6), 711-739. Retrieved from doi: 10.1177/0095399713481601
- [51] Hughes, A. M., Gregory, M. E., Joseph, D. L., Sonesh, S. C., Marlow, S. L., Lacerenza, C. N., ...
- [52] & Salas, E. (2016). Saving lives: A meta-analysis of team training in healthcare. *Journal of Applied Psychology*, 101(9), 1266.
- [53] Jin-Kyoung, P., & Suk-Won, H. (2015). The relationship between communication and nursing performance in simulation-based team learning. *Indian Journal of Science and Technology*, 8(26). DOI: 10.17485/ijst/2015/v8i26/80659
- [55] Johnson, L., & Ezekielian, J. (2014). Use of a professional practice model to illuminate the importance of relationships. *Creative nursing*, 20(2), 127-136. DOI: 10.1891/1078-4535.20.2.127
- [57] 10.1891/1078-4535.20.2.127
- [58]
- [59] Keller, K. B., Eggenberger, T. L., Belkowitz, J., Sarsekeyeva, M., & Zito, A. R. (2013).
- [60] Implementing successful interprofessional communication opportunities in health care education: a qualitative analysis. *International Journal of Medical Education*, 4, 253. doi: 10.5116/ijme.5290.bca6
- [61] Körner, M., Wirtz, M. A., Bengel, J., & Göritz, A. S. (2015). Relationship of organizational culture, teamwork and job satisfaction in interprofessional teams. *BMC Health Services Research*, 15(1), 243. Retrieved from <https://doi.org/10.1186/s12913-015-0888-y>
- [63] Kowalski, S. L., & Anthony, M. (2017). CE: Nursing's Evolving Role in Patient Safety. *AJN The American Journal of Nursing*, 117(2), 34-48.
- [65] Linda Johnson MS, R. N., & Jamie Ezekielian MS, R. N. (2014). Use of a professional practice model to illuminate the importance of relationships. *Creative nursing*, 20(2), 127.
- [67] Lipworth, W., Taylor, N., & Braithwaite, J. (2013). Can the theoretical domains framework account for the implementation of clinical quality interventions? *BMC Health Services Research*, 13, 530. <http://doi.org/10.1186/1472-6963-13-530>
- [69] Marshall, E. S. & Broome, M.E. (2016). Transformational leadership in nursing: From expert clinician to influential leader (2nd ed.). New York, NY: Springer Publishing Company.
- [71] Marson (September 5, 2018) personal communication
- [72] Michel, L. (2017). A Failure to Communicate? Doctors and Nurses in American Hospitals. *Journal of Health Politics, Policy and Law*, 42(4), 709-717. Retrieved from <https://doi.org/10.1215/03616878-3856149>
- [74] Minitab (n.d.) Minitab 18 Support.
- [75] Retrieved from <https://support.minitab.com/en-us/minitab/18/help-and-how-to/statistics/tables/supporting-topics/basics/what-is-an-associated-variable/>
- [76] Minoo, N., Fatemeh, K., Maryam, N., & Mandana, S. (2013). Assessment of validity and reliability of TeamSTEPPS teamwork attitudes questionnaire (T-TAQ) in Iran. *Payavard Salamat*, 7(5). Retrieved from <http://eds.b.ebscohost.com>
- [78] Moreland, J. J., & Apker, J. (2016). Conflict and stress in hospital nursing: Improving communicative responses to enduring professional challenges. *Health Communication*, 31(7), 815-823. Retrieved from <https://doi.org/10.1080/10410236.2015.1007548>
- [80] Northouse, P. G. (2018). *Leadership: Theory and practice*. Sage publications.
- [81] Pannick, S., Davis, R., Ashrafian, H., Byrne, B. E., Beveridge, I., Athanasiou, T., ... & Sevdalis,
- [82] N. (2015). Effects of interdisciplinary team care interventions on general medical wards: a systematic review. *JAMA Internal Medicine*, 175(8), 1288-1298. doi:10.1001/jamainternmed.2015.2421
- [83] Phillips, C. J., Marshall, A. P., Chaves, N. J., Jankelowitz, S. K., Lin, I. B., Loy, C. T., ...
- [84] Michie, S. (2015). Experiences of using the Theoretical Domains Framework across diverse clinical environments: a qualitative study. *Journal of Multidisciplinary Healthcare*, 8, 139-146. <http://doi.org/10.2147/JMDH.S78458>Links to an external site.
- [85] Prochaska, J. O. (2013). Transtheoretical model of behavior change. In *Encyclopedia of behavioral medicine* (pp. 1997-2000). Springer New York. DOI: [https://doi.org/10.1007/978-1-4419-1005-9\\_70](https://doi.org/10.1007/978-1-4419-1005-9_70)
- [87] Prochaska, J. O., & Norcross, J. C. (2007). *Systems of psychotherapy: A transtheoretical analysis* (6<sup>th</sup> ed.). Australia: Thomson/Brooks/Cole.
- [89] Provost, S. M., Lanham, H. J., Leykum, L. K., McDaniel Jr, R. R., & Pugh, J. (2015). Health care huddles: Managing complexity to achieve high reliability. *Health care management review*, 40(1), 2-12. DOI: 10.1097/HMR.0000000000000009
- [91] Plonien, C., & Williams, M. (2015). Stepping up teamwork via TeamSTEPPS. *AORN journal*, 101(4), 465-470. Retrieved from <https://doi.org/10.1016/j.aorn.2015.01.006>
- [93] Raisio, H., Puustinen, A., Vartiainen, P., Lindell, J., & Ollila, S. (2018). Teaching public administrators and leaders to handle complexity. *Complexity, Governance & Networks*, 4(1), 80-91.
- [95] Rogers, E. M. (1983). *Diffusion of innovations* (1st ed.). New York: Free Press.
- [96] Roman, T. C., Abraham, K., & Dever, K. (2016). TeamSTEPPS in long-term care—an academic partnership: part I. *The Journal of Continuing Education in Nursing*, 47(11), 490-492. Retrieved from <https://doi.org/10.3928/00220124-20161017-06>
- [98] Sales, A. E., Ersek, M., Intrator, O. K., Levy, C., Carpenter, J. G., Hogikyan, R., ... &
- [99] Montagnini, M. (2016). Implementing goals of care conversations with veterans in VA long-term care setting: a mixed methods protocol. *Implementation Science*, 11(1), 132. Retrieved from <https://doi.org/10.1186/s13012-016-0497-0>
- [100] Sheppard, F., Williams, M., & Klein, V. R. (2013). TeamSTEPPS and patient safety in healthcare. *Journal of Healthcare Risk Management*, 32(3), 5-10. Retrieved from <https://doi.org/10.1002/jhrm.21099>
- [102] Sherwood, G., & Zomorodi, M. (2014). A new mindset for quality and safety: the QSEN competencies redefine nurses' roles in practice. *Nephrology Nursing Journal*, 41(1), 15-22.

- [104] Thomas, L., & Galla, C. (2013). Republished: building a culture of safety through team training
- [105] and engagement. *Post-graduate Medical Journal*, 89(1053), 394-401. Retrieved from <http://dx.doi.org/10.1136/post-gradmedj-2012-001011rep>
- [106] Vertino, K.A. (2014). Evaluation of a TeamSTEPPS initiative on staff attitudes toward
- [107] teamwork. *Journal of Nursing Administration* Vol. 44 Issue 2 p. 97-102. doi:
- [108] 10.1097/NNA.0000000000000032
- [109] Watson, L. M. (2015). Brief communication: Does feeling part of the team affect other
- [110] characteristics of nursing teamwork?. *Canadian Oncology Nursing Journal/Revue canadienne de soins infirmiers en oncologie*, 25(1), 99-100.
- [111] Whitcher, C. G. (2015). Primary Team Nursing (PTN) and TeamSTEPPS as an Intervention for
- [112] *Change* (Doctoral dissertation). Retrieved from <http://hdl.handle.net/10657/214238-45>.
- [113] Williams, K. N., Ilten, T. B., & Bower, H. (2016). Meeting communication needs: topics of talk
- [114] in the nursing home. *Journal of Psychosocial Nursing and Mental Health Services*, 43(7), 38-45.
- [115] S. M. Metev and V. P. Veiko, *Laser Assisted Microtechnology*, 2nd ed., R. M. Osgood, Jr., Ed. Berlin, Germany: Springer-Verlag, 1998.
- [116] J. Breckling, Ed., *The Analysis of Directional Time Series: Applications to Wind Speed and Direction*, ser. Lecture Notes in Statistics. Berlin, Germany: Springer, 1989, vol. 61.
- [117] S. Zhang, C. Zhu, J. K. O. Sin, and P. K. T. Mok, "A novel ultrathin elevated channel low-temperature poly-Si TFT," *IEEE Electron Device Lett.*, vol. 20, pp. 569-571, Nov. 1999.
- [118] M. Wegmuller, J. P. von der Weid, P. Oberson, and N. Gisin, "Highresolution fiber distributed measurements with coherent OFDR," in *Proc. ECOC'00*, 2000, paper 11.3.4, p. 109.
- [119] R. E. Sorace, V. S. Reinhardt, and S. A. Vaughn, "High-speed digital-to-RF converter," U.S. Patent 5 668 842, Sept. 16, 1997.
- [120] (2002) The IEEE website. [Online]. Available: <http://www.ieee.org/>
- [121] M. Shell. (2002) IEEEtran homepage on CTAN. [Online]. Available: <http://www.ctan.org/tex-archive/macros/latex/contrib/supported/IEEEtran/>
- [122] *FLEXChip Signal Processor (MC68175/D)*, Motorola, 1996.
- [123] "PDCA12-70 data sheet," Opto Speed SA, Mezzovico, Switzerland.
- [124] A. Karnik, "Performance of TCP congestion control with rate feedback:TCP/ABR and rate adaptive TCP/IP," M. Eng. thesis, Indian Institute of Science, Bangalore, India, Jan. 1999.
- [125] J. Padhye, V. Firoiu, and D. Towsley, "A stochastic model of TCP Renocongestion avoidance and control," Univ. of Massachusetts, Amherst, MA, CMPSCI Tech. Rep. 99-02, 1999.
- [126] *Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specification*, IEEE Std. 802.11, 1997.