Improving Ineffective Communication in Long Term Care Settings

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Abstract

Background

Ineffective communication contributes to medical errors and sentinel events in healthcare, leading to fatalities and billions in malpractice cost. Nurses have a leading role in communicating patient information. In long-term care, ineffective communication and poor teamwork contributes to adverse events. Adverse events in our older adults can lead to hospitalizations, injuries, and death. Effective communication and teamwork are key components to providing safe patient care. Implementing a standardized handoff tool and team building curriculum can improve communication and teamwork.

Local Problem

Ineffective communication was a verbalized, observable practice problem at a long-term care facility in a suburban location in the Mid-Atlantic region. The purpose of this Doctor of Nursing Practice quality improvement project was to implement and evaluate the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) curriculum with a standardized handoff tool to improve communication and teamwork between nurses at this long- term care facility.

Interventions

During this quality improvement project, six nurses at a suburban long-term care facility learned two TeamSTEPPS modules: communication and team structure. Modules included strategies such as use of the Situation-Background-Assessment-Recommendation communication framework and used a validated handoff tool, Safer Sign Out.

This quality improvement project occurred over 14 weeks. During week one, the nurses were informed about the practice change. During week two, the DNP project leader administered pre-surveys and educated the nurses on the TeamSTEPPS's curriculum and handoff tool. During weeks three through thirteen, the nurses utilized the Safer Sign Out handoff tool to give report. Nurses were observed during each shift change during the first week on implementation. The project leader reviewed the handoff log for compliance and gave feedback. During week fourteen, nurses completed post- surveys. Lippitt's Change Theory was used to guide this practice change.

Results (Impact of change)

The post- TeamSTEPPS Teamwork Attitudes Questionnaire revealed an increase in overall scores on the team structure and communication category but these changes were not significant, thus indicating only a limited overall improvement in the nurse's attitudes about teamwork and communication. The post- TeamSTEPPS Teamwork Perceptions Questionnaire, revealed an overall slight increase in the scores from the team structure category and a slight decrease within the communication category; however, neither were found to be statistically significant. The data revealed that use of TeamSTEPPS did not result in significant improvements in the staff's attitudes and perceptions on teamwork and communication.

Conclusion

Ineffective communication and poor teamwork in long-term care continues to lead to adverse

events. Information is often lost during shift handoff. In this quality improvement project, several limitations may have impacted the results: a small sample size, a lack of involvement of an organizational champion or internal change agent, limited space to free text information on the handoff tool, and many internal organizational changes. Barriers must be addressed before implementing a communication and team-building curriculum. If barriers are addressed, then utilizing the TeamSTEPPS curriculum with nurses to teach teamwork and communication strategies, along with a validated handoff tool, may help to improve communication during shift hand-off.

Introduction

Nurses have a leading role in communicating valuable patient information to providers for the maintenance of patient safety (Renz & Carrington, 2016). Many sentinel events, such as falls, medication errors, avoidable or extended hospitalizations, and deaths have been linked to ineffective communication and suboptimal teamwork among nurses (Renz & Carrington, 2016). In long-term care (LTC) settings, both registered nurses (RNs) and licensed practical nurses (LPNs) face many challenges when caring for older adults who often have complex health needs. Nurses, specifically RNs and LPNs work in conjunction with each other and other healthcare professionals to deliver safe patient care in LTC settings. Teamwork and communication are inevitable in any healthcare setting. According to Cooke (2016), communication and teamwork require leadership accountability, team-based care, and organizational structure to support patient safety. Implementing a standardized curriculum for team building, which includes a handoff tool for communication, can improve communication and teamwork among nurses (Cooke, 2016). Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) is a training curriculum that can be implemented to strengthen communication and teamwork in the LTC setting.

Background and Significance

When presenting significant patient data in LTC settings, ineffective communication is an observed and verbalized practice problem. Poor teamwork is another issue seen in LTC that

leads to medical errors, and adverse events (Thomas & Galla, 2013). RNs and LPNs have a heavy responsibility to report changes in a patient's condition to their provider or other healthcare team members in LTC (Renz, Boltz, Wagner, Capezuti, & Lawrence, 2013). When there is miscommunication or a delay in the handoff of information, negative patient outcomes, such as deaths, have resulted. According to The Joint Commission's [TJC] (2017) Sentinel Event Alert publication on inadequate handoff information, handoff is described as the deliverance of health information from one healthcare professional to another who accepts the responsibility and continuality of care. In LTC, ineffective communication and poor teamwork have been found to be contributing factors to medication errors, falls, and delayed or inappropriate interventions, and missed nursing orders (Andersson, Frank, Willmann, Sandman, & Hansebo, 2018). Older adults residing in a LTC setting who experience adverse events, such as medication errors or delayed treatments, may suffer avoidable hospitalizations, injuries and fatalities.

From 2011 to 2016, ineffective communication remained a major factor contributing to medical errors and sentinel events in healthcare; ineffective communication during handoff resulted in $1.7 billion in malpractice costs and approximately 1,700 deaths (TJC, 2017). To achieve the goal of patient safety, mastering standardized effective communication is crucial (Cook, 2016). Strong teamwork is also imperative to building a safe patient environment and delivering quality care (Thomas & Galla, 2013). By improving teamwork and communication we could enhance the patient safety culture. A safe patient environment requires proactive strategies that promote promoting teamwork, communication, problem-solving skills, and shared decision making to reduce the likelihood of medical errors (Thomas & Galla, 2013). These skills are important across all healthcare disciplines. Nurses are key stakeholders that must have strong communication skills and teamwork skills, both interdisciplinary and intradisciplinary.

Studies show a standardized handoff communication tool is necessary to deliver quality and safe patient care (Cook, 2016; Haynes & Strickler, 2014; Natafgi et al., 2017; TJC, 2017; Thomas & Galla, 2013). Nurses and providers working in LTC reported satisfaction with the deliverance of information using a standardized approach (Renz et al., 2013). TeamSTEPPS is an evidenced based curriculum that includes a handoff tool to improve patient outcomes by strengthening communication and teamwork skills. A version exists specifically for LTC settings and can be used with all disciplines (AHRQ, n.d.). The following PICO question was constructed: For nurses (RNs and LPNs) working in LTC, does implementing a standardized handoff tool and team building curriculum promote more effective communication when compared to usual handoff communication without a team building curriculum. The purpose of this Doctor of Nursing Practice (DNP) project is to implement and evaluate TeamSTEPPS curriculum with a standardized handoff communication tool to improve communication and teamwork between RNs and LPNs at a LTC facility.

Short, Midterm and Long-Term Goals

This DNP project consisted of short, midterm and long-term goals. There were three short-term goals set to be achieved in one-two months after implementation. The first short term goal was for 50% of the nurses on the piloted units to participate in the TeamSTEPPS training. The second short term goal was for 50% of nurses who completed the TeamSTEPPS' curriculum to take pre-training surveys. Scores were compared to assess knowledge about teamwork, and communication. Increases in scores would reflect learned strategies about teamwork and communication. The third short term goal was for 50% of the nurses on the piloted units to utilize the TeamSTEPPS handoff tool and huddle each shift to communicate. There were two midterm goals set for this DNP project. The first midterm goal was for at least

50% of the nurses to be given a written survey, to gather their opinions on current barriers to utilizing the handoff tool, teamwork, information not captured in the handoff tool and recommendations. The second midterm goal was to assess the nurses' compliance with utilization of the handoff tool and huddles or group reporting by reviewing completed shift handoff tools, with a goal of 50% completed tools. The DNP project leader gave direct feedback to individuals. The deadline for midterm goals was approximately three months. The long-term goals of this DNP project were for 75% of nurses to utilize the handoff tool and huddle. A second long-term goal was that there would be an increase in the TeamSTEPPS post-curriculum survey scores showing improvements in teamwork and communication. The deadline for long-term goals was approximately four months.

Theoretical Framework

The theoretical framework used to guide and assist with understanding the process of this practice change was Lippitt's Change Theory. Lippitt's Change Theory consist of seven phases that served as a template for this practice change (Mitchell, 2013). The first phase consists of determining the practice problem and constructing a plan for change (Mitchell, 2013). Phase two is titled "assess motivation/capacity for change" and it includes meeting with stakeholders to discuss implementing the TeamSTEPPS curriculum and handoff tool (Mitchell, 2013). The assessment of the "change agent's motivation and resources" is performed in phase three (Mitchell, 2013). Change agents are individuals driving the change process or a leader (Mitchell, 2013). The final draft of the plan and specific process for change is established in phase four (Mitchell, 2013). The role for the change agent or champion is defined in phase five (Mitchell, 2013). In phase six, the change is maintained, and the helping relationship is terminated in phase seven so that it will become permanent (Mitchell, 2013).

The phases of the Lippitt's Change Theory were followed in the LTC setting to ensure smooth implementation of the practice change process. Phase one of the Lippitt's Change Theory involved gathering background evidence about ineffective communication, TeamSTEPPS, and the importance of standardized handoff communication tools. During phase two, a meeting was held with the pilot units to discuss feelings on changing their current practice to include TeamSTEPPS and assess any reluctance to change. This meeting was an informal group setting. The DNP project leader was the change agent. In an ideal setting, the nurse educator would be perfect for this role since they handle staff education practices, often exhibit effective communication skills and would facilitate buy-in. Selection of a change agent concluded phase three. The final plan for the TeamSTEPPS curriculum and the handoff tool process was developed by the DNP project leader as part of stage four. In phase five, clear steps for the change agent were discussed with the nurses as well as the process for feedback to non-compliant nurses. Attempts to maintain the change and evaluations of the process took place in phase six. Feedback was given in this phase by the change agent to nurses who were found not completing the handoff tool. The facility's standards of care policy were upheld for the implementation of this project. Staff feedback was evaluated in this phase, as well. The seventh and final phase consisted of withdrawing the DNP project leader, so staff could continue with a new routine practice. The Lippitt's Change Theory steps helped with implementation of the practice change.

Literature Review

Ineffective communication and a lack of teamwork can lead to medical errors and unsafe conditions (Cooke, 2016). Older adults residing in LTC are living longer, with more

disabilities and cognitive impairment (Andersson et al., 2018). Older adults are at higher risk to experience avoidable adverse events in the hospital and LTC facilities. The majority (89%) of serious adverse events are related to medications errors, falls, delayed and inappropriate interventions, and missed nursing orders (Andersson et al., 2018). Ineffective communication and poor teamwork are major contributing factors, as one of the top three causes for sentinel events is ineffective communication (Andersson et al., 2018; Cooke, 2016). A standardized handoff communication tool is necessary to deliver quality and safe patient care (Cook, 2016; Haynes & Strickler, 2014; Natafgi et al., 2017; TJC, 2017).

Studies have utilized or stressed the use of TeamSTEPPS to improve ineffective communication and promote patient safety in different clinical settings (Cook, 2016; Haynes & Strickler, 2014; Howe, 2014; Natafgi et al., 2017). Renz and Carrington (2016) stated standardized communication tools can promote effective communication and teamwork. TeamSTEPPS is an evidence-based curriculum with a standardized handoff tool constructed to improve communication and teamwork, in order to promote better patient outcomes (AHRQ, n.d). Implementation of TeamSTEPPS has been shown to increase awareness about the importance of teamwork and communication (Howe, 2014). A culture of safety can be constructed with implementation of TeamSTEPPS in a LTC setting (Thomas & Galla 2013). The review will begin with evidence supporting TeamSTEPPS to improve teamwork and communication.

Analysis of Research

Cooke (2016), Haynes and Strickler (2014), Howe (2014) and Thomas and Galla (2013) support the use of the TeamSTEPPS curriculum and handoff tool, to foster both teamwork and communication. Cooke (2016) conducted a non-experimental pre/post study

that evaluated whether implementing TeamSTEPPS had an impact on knowledge and attitudes about teamwork and communication in different clinical settings. Seventeen individuals from multiple disciplines attending the American Society of Healthcare Risk Management's annual education event volunteered to attend a workshop on team building. The TeamSTEPPS curriculum was taught to help with team building strategies. Cooke (2016) concluded there was a significant increase in the overall attitude scores on teamwork and communication after implementing TeamSTEPPS (pretest M=4.305, SD =0.209) and (Posttest M=4.477, SD =0.184); p= .005. Haynes and Strickler (2014) wrote an expert opinion article that stressed teamwork as the foundation to effective communication in healthcare and how implementation of TeamSTEPPS can improve patient safety. Haynes and Strickler (2014) predicted that implementing TeamSTEPPS would facilitate teamwork, communication, situational awareness, mutual support, and reduce medical errors.

Two pilot studies were also reviewed. Howe (2014) designed a pre-post design pilot trial that studied the TeamSTEPPS curriculum led by the certified nursing assistants with implementation of the handoff tool to improve communication and teamwork. Improvements in teamwork and communication were not significant in this study. However, there was greater awareness about the importance of communication and teamwork. Results were thought to be limited by many unexpected changes in management during the study which entailed new staffing policies that reduced staffing. Thomas and Galla (2013) also conducted a pilot study that successfully implemented TeamSTEPPS in one out of 15 hospitals and two LTC facilities of The North Shore Long Island Jewish Medical System (NSLIJMS) in New York. The NSLIJMS evaluated the effectiveness of TeamSTEPPS by recording pre- and post-scores of the Agency for Healthcare Research and Quality's (AHRQ) Hospital Survey on

Patient Safety Culture. After the study was concluded, a significant increase was seen in all areas evaluated with the strongest increases seen in teamwork within units (11.9%), organizational learning (11.7%), and Supervisor/manager expectations and actions promoting patient safety (10.9%). Communication/openness was also measured and found to be significant (7.7%). Currently, NSLIJMS has implemented TeamSTEPPS in 14 hospitals and two LTC facilities since it was such as success (Thomas and Galla, 2013).

Andersson et al. (2017) conducted a retrospective study that evaluated serious adverse events in LTC and the contributing factors. Eighty-nine percent of serious adverse events involved medication errors, missed nursing care, falls, and delayed or inappropriate interventions (Andersson et al., 2017). Inadequate communication, teamwork failure, lack of competence, and incomplete or lack of documentation were the most common contributing factors. The study concluded that RNs and nursing assistants should be made aware and given knowledge about factors contributing to serious adverse events and prevention (Andersson, et al., 2017).

A qualitative study by Natafgi et al. (2017) evaluated the use of a handoff tool from the TeamSTEPPS curriculum to improve communication during shift change in eight hospitals. Three hospitals were classified as high performance and three were classified as low performance after implementing TeamSTEPPS. Low performing hospitals reported more barriers than high preforming hospitals. Barriers reported include the use of disciplinary measures had a negative impact, lack of physician support, staff resistance to change, a lack of financial resources, and patient confidentiality concerns related to privacy during huddles. High performing groups discussed potential barriers prior to implementation (Natafgi et al., 2017).

Renz and Carrington (2016) developed a literature review of nine studies that discussed the communication between nurses and physicians when caring for the older adult population. All nine studies reported an improvement in patient outcomes after implementing a standardized communication protocol and/or removal of communication barriers. The study concluded barriers to communication can be reduced with staff education and organized communication tools. TeamSTEPPS is an example of an organized communication tool with an education component within its curriculum.

Synthesis of Similarities and Differences

Cooke (2016), Haynes and Strickler (2014), Howe (2014) and Thomas and Galla (2013) supported the use of TeamSTEPPS to improve teamwork and/or communication. However, results of Howe (2014) did not show a significant change in results of implementing use of TeamSTEPPS. The study was well designed and cited major limitations due to a change in management and staffing shortage that were thought to have impacted the study outcome. Therefore, that study was still included. Similar limitations occurred with Natafgi et al. (2017). The results of the Natafgi et al. (2017) study revealed three hospitals that showed significant improvements in communication after implementing TeamSTEPPS, and three hospitals that did not show significant improvement. The studies that did not show significant improvement reported more modifiable barriers, such as disciplinary measures used, lack of physician support, staff resistance to change, a lack of financial resources and patient confidentiality concerns related. The high preforming hospitals discussed and planned for potential barriers (Natafgi et al., 2017). The study was utilized as a guide to barriers that should be addressed prior to implementation of TeamSTEPPS curriculum and handoff tool. Thomas and Galla (2013) received such positive outcomes in teamwork effectiveness, organizational learning,

and supervisor/manager expectations and actions promoting patient safety, that their TeamSTEPPS pilot study was implemented in 13 additional NSLIJMS hospitals and two of their nursing homes.

Andersson et al. (2017) focused more on modifiable factors, such as communication and teamwork, that could potentially reduce serious adverse events in LTC. TeamSTEPPS was developed to strengthen teamwork and communication. Renz and Carrington (2016) did not explicitly look at the TeamSTEPPS curriculum. However, the study was selected because results emphasized the use of a standardized communication tool that can easily be applied to TeamSTEPPS. Evidence shows positive outcomes when using standardized handoff tools. Overall, studies predict implementation of TeamSTEPPS can promote effective communication and teamwork to reduce medical errors.

The TeamSTEPPS curriculum and handoff tool was implemented in a LTC setting to improve communication, and teamwork. Based on evidence, potential barriers, such as staffing, staff willingness to change, staff support, and patient confidentiality, were discussed prior to implementation. It was thought that implementation of TeamSTEPPS would be successful if barriers were addressed.

Implementation Plan

Project Type, Sample and Setting

A quality improvement (QI) project focused on implementing the TeamSTEPPS curriculum and handoff tool with nurses (RNs and LPNs) working in a LTC setting, located in a suburban area of Mid-Atlantic region was piloted. The QI project was piloted on two designated units, decided by the institution. The inclusion criteria were RNs and LPNs in agreeance to participate in the QI project. A sample size of six RNs and LPNs (n=6) was

determined based on units with perceived higher incidences in miscommunication and volunteer participation. The QI project consisted of four RNs and two LPNs from the two designated units. There were three shifts and each shift consisted of one nurse on each unit, totally six nurses.

Procedures and Timeline

The QI project was completed occur over 14 weeks. The TeamSTEPPS curriculum was tailored to the verbalized institutional needs to improve teamwork and communication. TeamSTEPPS is a readily available and encouraged resource by the AHRQ and does not require prior authorization. TeamSTEPPS modules two and three of the fundamentals curriculum were taught: Team Structure and Communication (See Appendix J). Prior to week one, the nurses were asked in person and via email to voluntarily attend the TeamSTEPPS training. Additionally, nurses were introduced to the Safer Sign Out tool during a staff meeting and asked if they initially thought it would be a feasible tool. During week one, the DNP project leader trained six nurses on the team structure and communication TeamSTEPPS's modules. Nurses were also informed about the Safer Sign Out handoff tool. Prior to the start of the course, nurses completed three TeamSTEPPS recommended surveys to evaluate their pre- and post-knowledge, attitudes and perceptions on teamwork, and communication (Appendix D-F). The DNP project leader taught one two-hour fundamentals course on team structure and communication for weekend nurses, and then, two one-hour courses, focused on each module separately, for weekday nurses. The communication module instructed nurses on implementing a new standardized handoff tool (Safer Sign Out Handoff tool; See Appendix G) for LTC and huddles strategies. The DNP project leader reviewed each section of the handoff tool with the nurses, and any questions were answered.

During week two, the official start date of the Safer Sign Out handoff tool was set.

Nurses were informed verbally and via email. During weeks three through thirteen, the nurses utilized the Safer Sign Out handoff tool recommended by TeamSTEPPS to conduct shift change report (See Appendix G). During week three, the nurses were observed during each shift change to ensure completion of tools and to troubleshoot minor issues. Nurses initialed whether report was completed on a shift report log kept at the nurse's station. The DNP project leader gave direct feedback to nurses about missed initials on random audits, after week three.

At the end of week fourteen, one unit that consistently used the handoff tool completed the pilot project. The other unit unintentionally stopped using the tool due to high patient turnover and increased workload. Then, all nurses who completed pre-surveys also submitted post surveys (See Appendix D-F).

Data Collection Plan to Evaluate Project

Initially, three tools recommended by TeamSTEPPS for evaluation of the curriculum were used to trend pre- and post-knowledge, attitudes and perceptions on teamwork, and communication: the TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ); the TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ); and the AHRQ Nursing Home Survey on Patient Safety (See Appendix D-F, respectively). Nurses were asked to complete the team structure and communication sections of the T-TAQ and T-TPQ which pertained to the modules taught. Increases in scores would demonstrate knowledge learned from the curriculum. Tools were completed prior to the training session and upon completion of the QI project. The T-TAQ and T-TPQ were Likert questionnaires ranked from strongly disagree to strongly agree. For statistical analysis of data, results were later re-coded to 1 (Strongly disagree) to 5 (Strongly agree). The AHRQ Nursing Home Survey on Patient Safety was

completed by the nurses prior to the training session but not upon completion of the QI project. This survey was only used to collect demographic data, since the AHRQ recommends analysis only for a sample of 10 or greater. Demographic data collected from this tool included the number of years worked in LTC, agency or fulltime status, and day or night shift status. T-TAQ, T-TPQ, and the AHRQ Nursing Home Survey on Patient Safety are reliable and validated tools that have been utilized for many years (AHRQ, 2010).

Data Analysis

For data collection and analysis, coded data reports were constructed in Excel by the DNP project leader from the pre- and post-evaluation surveys. After implementing the TeamSTEPPS modules for team structure and communication, the overall staff T-TAQ and T-TPQ pre- and post-responses were examined, to see if an improvement could be detected. Descriptive statistics were used for data analysis: percentages, medians, and standard deviation. The following Likert surveys were used to analyze the nurse's perceptions and attitudes about teamwork and communication pre- and post: T-TAQ and T-TPQ. Surveys were reviewed to test for differences between the pre- and post-scores, and nonparametric analyses were used due to the small sample size and non-normal distribution of the scores. Overall pre- and post-survey scores were compared for differences in the percentage of nurses who answered strongly agree and strongly disagree, and the median score after recoding. The Mann-Whitney U test was used to determine statistical significance. Only demographic data about nurses collected in the AHRQ Nursing Home Survey on Patient Safety was analyzed by the following descriptive statistics: frequencies, percentages. Data analysis of Likert responses from the AHRQ Nursing Home Survey on Patient Safety could not be calculated for inferences about patient safety culture because of the small sample size. All data was de-

identified.

Human Subjects Protection / Approval Processes

The proposal to implement the quality improvement project as a Non-Human Subjects Research determination was submitted to the University of Maryland Baltimore Institutional Review Board (IRB). The proposal was submitted to the organization's medical director and health services administrator for approval since they do not have an IRB. Security of all data collected was maintained on a secure password protected computer. Surveys completed by nurses did not include any identifiers, were collected immediately after completion, entered into a password protected computer and then shredded by the DNP project leader.

Results

The T-TAQ revealed an increase in overall number of responses ranked strongly agree when assessing post pilot scores. The percentage of total item responses from all six nurses (N=72) that were highly ranked a five for strongly agree, almost doubled (34.7% to 66.6%). The percentage of total responses that ranked a one for strongly disagree, remained constant (1.39% to 1.39%). Scores on the team structure category changed from a pre-implementation median of 25.0 (SD=2.88) to a post score median of 28.5 (SD=3.01). Additionally, scores on the communication category changed from the pre-implementation median of 24.0 (SD = 2.59) to a post median of 26.0 (SD=2.23). The changes were not significant (p-values >.05). The findings from the T-TPQ revealed a 13% overall increase in staff who highly ranked their perceptions about teamwork and communication as a five (strongly agree) on the two piloted units after completing TeamSTEPPS training (N=84). The percentage of total responses that were ranked a one for strongly disagree, increased (1.19% to 13.09%). There was a slight increase in the overall staff median score calculated from the team structure category, median

of 22.0 (SD=2.83) to a post score median of 26.0 (SD=8.02). Secondly, the median demonstrated a slight decrease within the communication category pre-implementation score median of 27.0 (SD= 2.71) to post score median of 26.0 (SD=8.71). Neither the mild increase in the team structure median scores or decrease in the median communication scores were found to be statistically significant (p- values >.05). The data reveals TeamSTEPPS did not show significant improvements in the staff's attitudes and perceptions on teamwork and communication.

All staff agreed that the TeamSTEPPS curriculum was 100% relevant to their practice. When asked whether the nurses perceived the Safer Sign Out handoff tool as useful, 100% stated yes. However, one third also stated that the tool was not feasible to use on a LTC unit with frequent admissions. Out of the two piloted units, one unit used the handoff tool consistently for 12 weeks, missing only one day. The second unit used the tool consistently for five weeks, but abruptly stopped due to higher patient turn over. This was an unintended consequence.

Discussion

The T-TAQ was used to assess if attitudes changed and knowledge was gained about teamwork and communication after taking the TeamSTEPPS module. There were increases in the T-TAQ scores on both team structure and communication. However, the changes were not statistically significant, indicating only a limited overall improvement in the nurse's attitudes about teamwork and communication. Though it was not a significant increase, it was expected for attitudes in team structure to improve since all nurses stated that the TeamSTEPPS topics was relevant to their practice. Nurses were interactive during sessions and positive feedback was brought to the director of nursing. Staff appeared to enjoy the TeamSTEPPS training.

However, this was assessed with the project leader and other supervisors present and may be a biased finding.

The T-TPQ was used to measure if the TeamSTEPPS intervention lead to changes in the nurses' perceptions about teamwork and communication on the piloted units. Results of this survey showed an increase in team structure scores and a decrease in communication scores. The changes were not significant, indicating only a limited overall improvement in the nurse's perceptions about teamwork and a decline in communication. The increase in perceptions about team structure were expected since the purpose of the intervention was to increase awareness of the importance of teamwork, provide strategies, and in return, change the nurse's behavior. The decrease in communication scores was not expected. One unit abruptly stopped using the Safer Sign Out handoff tool and returned to using their original invalidated tool since it was believed to be less burdensome. Without practicing the communication strategies taught, this could potentially explain the decrease in T-TPQ communication scores.

Ultimately, the data reveals TeamSTEPPS did not show significant improvements in the staff's attitudes and perceptions on teamwork and communication. Many limitations were encountered during the project. It is believed that the sample size had the biggest impact on the nonsignificant data. Another barrier to the implementation of the project was the nurses who were resistant to change. The buy-in from leadership and the DNP leader being present to answer questions during week three of the project helped to reduce this barrier. The Lippitt's Change Theory used to guide this project states resistance to change is inevitable. It suggests having strong buy-in from leadership and the use of change agents/champions. We lost a champion prior to the start of the project due to an abundance of responsibilities as an

educator and staffing issues. Another unexpected barrier was that the nurses used two different report sheets to give shift report. The nurses give a brief report on every patient on the unit and a 24-hour report for patients with active problems. The nurses preferred to use the new handoff tool in place of their 24-hour report since this would allow them to report on fewer patients. The nurses were allowed to use the new handoff tool in place of their 24-hour report tool. All nurses on both piloted units expressed concerns about limited space to free text information on the handoff tool. Nurses were encouraged to use three rows for each patient instead of the typical single row per patient. Each shift was then able to chart on an entire row, which created more room for charting. This change was made during week three of the pilot. Lastly, many organizational changes such as staffing issues, the hiring of a new nursing supervisor and preparation for a new electronic medical record impacted the pilot results. The project leader was unable to plan for or minimize these limitations. The complete TeamSTEPPS curriculum consists of eight modules. Though the curriculum can be tailored, this may have impacted results of the study. Nursing supervisors who participated in the study and the DNP project leader were present during survey completion. This could have led to falsely positive results. To minimize bias, staff were reassured surveys were de-identified and honesty was encouraged by supervisors.

There was a major unintended consequence during the project, which was the early discontinuation of the project on one of the piloted units. This was not foreseen since the majority of the staff and leadership at the facility were supportive and favored the tool during the planning and implementation phases. Two nurses were vocal about apprehensions to using the tool on a unit with higher patient turner over. However, the nurses still said that they liked the tool and agreed to participate in the pilot trial. After the DNP project leader was made

aware of the discontinuation on one unit, there were one-on-one conversations with the director of nursing and two nursing staff. All three individuals denied any major contributing factors to the discontinuation of the tool and denied anything that the DNP project leader could have done differently to sustain the implementation of the handoff tool. The DNP project leader formally met with all nurses who participated in the pilot trial to potentially establish common themes and gather feedback. There were no unexpected benefits or cost related to the tool. A major facilitator for this project was the rapport the DNP project leader had with the staff prior to implementation. Strong leadership buy-in from the director of nursing and the health services administrator was a major facilitator since they enforced the use of the new handoff tool.

Results of this QI project were similar to previous research. Several barriers were seen in this project similar to Natafgi et al. (2017), which showed that after implementing TeamSTEPPS and a handoff tool across eight hospitals, the hospitals that did not show improvements expressed many barriers. One of the shared barriers with this pilot was resistance to change. Natafgi et al. (2017) also found establishing rapport with staff and leadership to gain buy-in as a facilitator. This was also seen with this QI project. Howe (2014) and Natafgi et al. (2017) noted in their studies that when barriers were present during implementation of TeamSTEPPS, outcomes were not as positive. These findings do correlate and strengthen the findings of this pilot project.

Thomas and Galla (2013) showed significant improvements in all targeted areas such as organizational learning, teamwork within units, and supervisor/manager expectations. The study had a very large sample size (N=1300), a well-designed change team and the TeamSTEPPS models were incorporated into their organizational model. The study was well

designed and was implemented thought the entire institution simultaneously. Barriers were planned for and the organization was dedicated to the change. Reducing the limitations explains the significant results. The findings of this QI pilot are not able to be generalized due to the small sample size and multiple limitations.

Conclusion

Ineffective communication and poor teamwork in the long-term care setting continues to lead to adverse events such as preventable hospital admissions and deaths. Valuable information is often lost during shift handoff. Due to the sample size (N = 6), the AHRQ Nursing Home Survey on Patient Safety was not used to assess patient safety culture. Though the project's results were very similar to other studies, it signifies how important it is to thoroughly address barriers prior to implementing practice changes. Additionally, only one practice change should be implemented at a time. Barriers must be addressed before implementing a communication and team building curriculum such as TeamSTEPPS. If barriers are addressed utilizing the TeamSTEPPS curriculum with nurses to teach teamwork and communication strategies, along with a validated handoff tool may help improve communication during shift handoff. Future QI projects should focus on implementing TeamSTEPPS in institutions with minimal barriers and large sample sizes to create stronger pilot studies. Miscommunication continues to lead to adverse events in the LTC setting and TeamSTEPPS may be a solution, but stronger studies are needed.

The initial plan to sustain this practice change included engagement of the nurse educator as a pilot participate. This was not achievable but stakeholders, such as the medical director and health services administrators, still agreed with the need for a practice change to improve teamwork and communication. After the QI project was completed on the designated

units, results of surveys were shared with the staff. The facility is planning to address the identified barriers to enhance their communication and teamwork. Later, TeamSTEPPS can be implemented throughout the facility one unit at a time by a team of champions. The educator can facilitate training additional nurses to be champions and training new hire employees.

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Appendix A
Tables and Charts

Table 1
T-TAQ Pre-Post Survey Descriptive Statistics

Survey		Pre (Post)		
T-TAQ	**N**	**Range**	**Median**	**SD**
Team Structure	6	22-30 (22-30)	25.00 (28.50)	2.88 (3.01)
Communication	6	22-28 (24-30)	24.00 (26.00)	2.59 (2.23)
T-TPQ				
Team Structure	6	17-24 (8-29)	22.00 (26.00)	2.83 (8.02)
Communication	6	22-28 (9-35)	27.00 (26.00)	2.71 (8.71)

Table 2
T-TAQ and T-TPQ Overall Survey Responses

Responses	Pre (Post) T-TAQ (N=72)	T-TPQ (N=84)
Strongly Agree	34.72% (66.67%)	1.19% (14.29%)
Agree	55.56% (25.00%)	51.19% (42.82%)
Neutral	4.16% (5.55%)	29.76% (22.61%)
Disagree	4.16% (1.39%)	16.67% (7.14%)
Strongly Disagree	1.39% (1.39%)	1.19% (13.09%)

Table 3
Demographics

Demographics		
Gender	Female	83% (5/6)
	Male	16.67% (1/6)
Positon	RN	66.67% (4/6)
	LPN	33.33% (2/6)
Years worked in this nursing home	2-11 months	33.33% (2/6)
	1 to 2 years	16.67% (1/6)
	3 to 5 years	33.33% (2/6)
	6 to 10 years	16.67% (1/6)
Hours worked per week	25 to 40 hours	33.33% (2/6)
	More than 40 hours	66.67% (4/6)
When do you work most often?	Days	66.67% (4/6)
	Evenings	
	Nights	
	Rotator (at least 2 shifts)	33.33% (2/6)
Are you an agency nurse?	Yes	
	No	100% (6/6)
Do you work with residents most of the time?	Yes	83% (5/6)
	No	16.67% (1/6)
Where do you spend most of your time working?	Many different areas	66.67% (4/6)
	Alzheimer's/ Dementia Unit	16.67% (1/6)
	Rehab Unit	16.67% (1/6)
	Skilled nursing unit	
	Other area	

Note. Demographics were obtained from the AHRQ Nursing Home Survey on Patient Safety

Table 4
Facilitators and Barriers

Facilitators	**Barriers**
Rapport with nurses and facility	Sample size (N=6)
Leadership buy-in	Lack of an organizational champion
Leaders participated in practice change	Limited space to free text information on handoff tool
	Utilization of two handoff tools for report
	Resistance to change
	Response Bias (social desirability)
	Multiple organizational changes occurring simultaneously

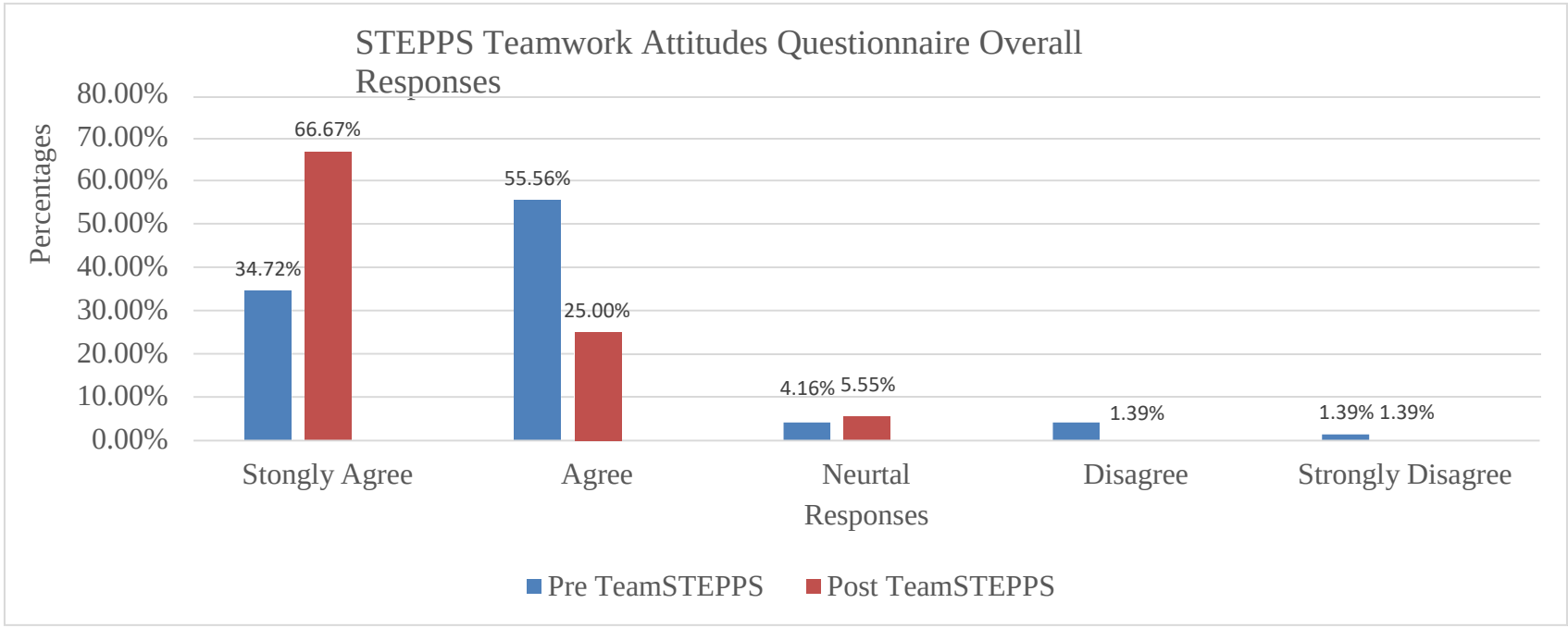

Figure 1. TeamSTEPPS Teamwork Attitude Questionnaire Overall Responses

Appendix B

Table 1. Evidence Review Table

Evidence Based Practice Question (PICO(T)): For registered nursing staff working in long-term care, is implementing a standardized hand off tool more effective when compared to standard hand-off communication?								
Author(s), year	**Study objective/ intervention or exposures compared**	**Design**	**Sample (*n*)**	**Intervention**	**Outcomes studied (how measured)**	**Results**	**Level of *Evidence* Rating (1-7)**	**Level of *Quality* Rating**
1) Andersson, A., Frank, C., Willman, A. M., Sandman, P., & Hansebo, G. (2018)	This study evaluated serious adverse events and common factors that contribute to such events in the long-term care setting.	Retrospective study	N= 173 Adverse event reports reviewed concerning nursing homes in Sweden	N/A	N/A	The majority of serious adverse events, 89% were related to Medications errors, falls, delayed and inappropriate intervention and missed nursing care. Ineffective communication, poor teamwork, delayed or inappropriate interventions and lack of competence were major	V	A

						contributing factors.		
2) Cooke, M., (2016)	This study evaluated whether implementing TeamSTEPPS had an impact on knowledge and attitudes about teamwork and communication.	Non-experimental Translational research Project/ pre and Post-study	n=15 health care workers who attended the 2015 American Society of Healthcare Risk Management Annual Spring education event. Intervention group- attended a 2day TeamSTEPPS education program. No Control Group.	The intervention Group – attended a 2 day TeamSTEPPS 2.0 course focusing on the TeamSTEPPS resources overview, and the following modules: creating a high –reliability organization, communication as a risk manager leadership skill, team structure, leading teams, situation monitoring mutual	Main DV: measurement of changes in knowledge and attitudes about knowledge and teamwork (measured using Likert-type surveys from the TeamSTEPPS 2.0 evaluation curriculum)	There was significant difference in the overall attitude scores on teamwork and communication (pretest M=4.305, SD =0.209) and (Post-test M=4.477, SD =0.184); p= .005 There was a significant in knowledge scores as well (Pretest M= 90.7, SD = 5.92) and (Post-test M=95.7, SD = 4.44); P= 0.001 Evaluation surveys revealed participants were most likely to implement	VI	A

				support, risk management coaching, change management to achieve a culture of safety, measurement and evaluation, empowering organizational leaders and pulling it all together.		handoffs and debriefing tools in their clinical settings.		
3) Howe, E. E. (2014)	To evaluate a communication and teamwork intervention (TeamSTEPPS) led by the certified nursing assistants CNAs	A pre-post-design pilot trial	N= 15 Long term care staff members on a subacute unit (8 CNAs and 7 nurses) No Control Group.	The intervention group partook in five minute debriefing sessions at the end of each day shift conducted by a CNA. The debriefing sessions were mirrored from	Main DV: Quality of work life (QWL) which consisted of five subscales: Co-workers and supervisor support, teamwork and communication, job demands and decision authority, characteristics of the unit and intent to leave/transfer unit.	There was improvement and significance in QWL survey scores results were significant for coworker and supervisor support ($p = <0.05$), characteristics of the unit ($p = <.10$) and job turnover	VI	B

				the TeamSTEPPS communication strategy. The debriefing sessions were referred to as the long-term care talk program.	(measured using a Likert survey)	intensions (p = <.10). Teamwork and communication, and job demands and decision authority were not significant for either group. Results were thought to be limited by many unexpected changes in management during the study.		
4) Natafgi, N., Xi, Z., Baloh, J., Vellinga, K., Vaughn, T., & Ward, M. M. (2017)	The purpose of this study was to evaluate the use of a handoff tool from the TeamSTEPPS communication strategy to improve communication	Qualitative Study	N=eight med-surg units from eight different hospital No Control Group.	Intervention: use of the TeamSTEPPS handoff communication tool during shift change.	Observations were used to measure performance and quality of handoff by using a Likert scale to code the following: (1) establish and maintain team structure and climate; (2) plan for care; (3)	Three hospitals were classified as high performance and three were classified as low performance. Low preforming hospitals reported more barriers than	VI	A

	during shift change				communication and make decisions; (4) manage workload and solve problems and (5) resolve conflicts and improve team skills Interviews were used to determine attributes that may have impacted the performance and quality. Interviews recorded purpose for implementation of the handoff tool, facilitators, barriers and trajectory.	high preforming hospitals.		
5) Haynes, J., & Strickler, J. (2014)	To stress the importance of adequate communication in health care and how implementation of TeamSTEPPS	Expert Opinion	No intervention or control.	N/A	N/A	Author predicts implementing TeamSTEPPS will facilitate teamwork, communication, situational awareness, mutual support, and reduce medical	VII	A

	can improve patient safety.					errors. Author refers to some previous research.		
6) Renz, S. M., & Carrington, J. M. (2016)	To evaluate the latest literature on communication between nurses and physicians when caring for the older adult population.	Literature Review	Nine studies were reviewed.	N/A	N/A	Results show barriers to communication can be reduced with staff education and organized communication tools.	V	A
7) Thomas, L., & Galla, C. (2013)	To evaluated whether implementation of TeamSTEPPS fostered team building, reduced medical errors and built a safe culture through the facility.	A pre-post design pilot trial	N= one acute care hospital 239 bed hospital with 1300 employees Pilot later was implemented across 13 NSLIJHS hospitals and two long-term care facilities.	Intervention: use of the TeamSTEPPS curriculum and strategies such as handoff communication tool, huddles, briefs, and debriefs.	The Hospital Survey On Patient Safety and Culture was used to measure outcomes. Targeted outcomes included: communication/openness, Feedback and communication about error, frequency of events reported, hospital handoffs and transitions, hospital management support for patient safety, Non-punitive response to error, Organizational learning – continuous improvement, overall perceptions of safety, staffing,	All targeted outcomes showed significant increases. The targeted variables that showed greater than 75% increase were organizational learning, teamwork within units, and supervisor/manager expectations. After implementation to 13 hospitals and 2 nursing facilities,	VI	A

					supervisor/manager expectations and actions promoting patient safety, teamwork across hospital units and teamwork within units.	all targeted outcomes remained significant and organizational learning and teamwork within units remained at a greater than 75% of pre pilot scores. Greater improvements were seen in communication about error, frequency of events reported, hospital handoff and transitions, staffing and teamwork across the units after implementation across the system.		

Appendix C - Map It Worksheet
DNP Project Name: Ineffective Communication in a Long-term Care Settings

DNP Project Purpose Statement: The purpose of this Doctor of Nursing Practice (DNP) project is to implement and evaluate TeamSTEPPS curriculum with a standardized handoff communication tool to improve communication and teamwork between RNs and LPNs at a long-term care facility by August 2018-April 2019.

Short-Term SMART Objective:

By July 30th 2018, three short term goals were evaluated. First, 50% of the nurses on the designated units participated in the TeamSTEPPS training. Secondly, 50% of nurses who completed TeamSTEPPS' curriculum completed pre surveys prior to training. Pre- and post-training surveys and scores will be compared to assess knowledge about teamwork and communication. An increase in scores is expected to reflect learned strategies about teamwork and communication. Third, 50% of the nurses on the designated units will utilize the TeamSTEPPS handoff tool each shift and huddle to communicate.

Mid-Term SMART Objective:

By September 1st 2018, two mid-term goals were evaluated. The first midterm goal was for at least 50% of the nurses to be given a written survey, to gather their opinions on current barriers to utilizing the handoff tool, teamwork, information not captured in the handoff tool and recommendations. Second, compliance with utilization of the handoff tool and huddles was assessed by reviewing the handoff log for missing initials, with a goal of 50% completed tools.

Long-Term SMART Objective:

By December 1st 2018, over 75% of nurses utilized the handoff tool and huddled and there was an expected increase in the TeamSTEPPS post- curriculum survey scores showing improvements in teamwork and communication.

Population/Context:

The targeted population are nurses, RNs and LPNs working at BM's designated pilot unit, a long-term care facility.

Mobilize: WHO will help facilitate the changes in structures and processes (practices)?

The following individuals will work in conjunction to facilitate changes in the structures and processes:

List of Core Team Members –

Dr. Aaron Charles – Medical Director

Ellen Goldstone - CRNP

Chad Craig - Nurse Educator (Change Agent/Champion)

Ann Paterson - Health Services Administrator

Others- the DNP project leader will mobilize after the draft plans have been developed-

RN on the designated pilot unit

Assess: WHAT structures and processes (practices) need to change and WHY? What structure, process, and outcome measures will be used to measure progress?

To determine a practice problem impacting patient care at the BM long-term care facility, brief interviews were conducted with the long-term care facility's administrative director, a senior staff nurse, a nurse practitioner and the medical director. All four professionals expressed communication as one of the top issues impacting patient care. Ironically, the interview with the nurse was interrupted because a symptomatic resident with a critically low lab value, went overnight without intervention due to miscommunication. During multidisciplinary rounds, delays in treatment due to miscommunication was discussed. Barriers to adequate handoff of information that the staff expressed were lack of accountability, an appointed leader to facilitate communication to staff after multidisciplinary rounds, teamwork, standardization and time.

According to the staff, communication and teamwork are areas that need improvement. Thestaff currently uses a unit developed shift handoff tool which has not been assessed for reliability or validity. Accountability is not enforced for incomplete handoff tools. Currently, the nurses do not receive team building training. The administrative director would like staff to huddle after morning multidisciplinary rounds to ensure care plans are communicated to the nurses. The importance of communication and teamwork and its ability to reduce medical errors needs to be conveyed to the staff. A standardized team building training and communication tools can reduce the chances of missed patient information between nurses and from nurses to providers that can cause adverse patient events.

A standardized handoff communication tool is necessary to deliver quality and safe patient care (Cook, 2016; Haynes & Strickler, 2014; Natafgi et al., 2017; TJC, 2017). Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) is an evidence based curriculum, with a standardized handoff tool constructed to improve communication and teamwork, in order to promote better patient outcomes (AHRQ, n.d). Implementation of TeamSTEPPS has been shown to increase awareness about the importance of teamwork and communication (Howe, 2014). A culture of safety can be constructed with implementation of TeamSTEPPS in a long-term care setting (Thomas & Galla 2013).

TeamSTEPPS includes evidence based modules on teamwork and communication that will be taught to staff. The TeamSTEPPS curriculum has a pre and post- training survey that assesses the knowledge learned about teamwork and communication. An increase in post- training scores conveys an improvement in teamwork and communication and will be used for evaluation of TeamSTEPPS pilot. The TeamSTEPPS curriculum also includes strategies to improve communication and teamwork such as an evidence based handoff tool and team huddles that will be implemented on the pilot unit. Handoff tool compliance will be measure by observation the first week of implementation. Thereafter, charge nurses will initial a log kept at the nurse's station to confirm completion of report. Handoff tools will be completed twice daily, once for each shift change. The champion will review report logs and report compliance during morning rounds. The champion will inquire about missing initials and give direct feedback to nurses. Percentage of completed rounds will be monitored. At 5 months if greater than 75% of completed handoff tools are completed, staff

huddle at least 75% of the time and there is an increase in TeamSTEPPS post- training scores the pilot will be considered a success.

Plan: *HOW will these changes be made (strategies and tactics)? WHEN will these changes be made?*

First, there will be a meeting with key stakeholders by June 2018 to discuss the implementation of TeamSTEPPS. Stakeholders include Ellen Goldstone (CRNP), Chad Craig (nurse educator) and Ann Paterson (health services administer). Evidence based research on the adverse effects of ineffective communication and poor teamwork, the rational for choosing the TeamSTEPPS curriculum and the implementation plan will be presented during this meeting. The pilot unit and convenient location for training will be determined at this meeting as well.

By June 2018 the pilot unit's nurses will be made aware of the changes by the nurse educator/champion and the health services administrator. TeamSTEPPS training will be initiated and conducted by the DNP student. There will be two training sessions for the nurses to sign up for, one day shift and one night shift. TeamSTEPPS pre- training surveys will be given out just prior to the start of the TeamSTEPPS training. After completing the surveys staff will undergo TeamSTEPPS module training for the team structure and communication modules. The nurses will be informed during the training about the new hand off tool that will be completed at shift change and the new huddle practice.

Then by July 2018, three short term goals will be evaluated. First, 50% of the nurses on the specified unit will participate in the TeamSTEPPS training version in a nursing home setting. Secondly, 50% of nurses will complete TeamSTEPPS' curriculum pre- and post- training surveys and scores will be compared to assess knowledge about teamwork and communication. An increase in scores will reflect learned strategies about teamwork and communication. Third, 50% of the nurses on specified unit will utilize the TeamSTEPPS handoff tool each shift and huddle to communicate. Handoff tools will be completed twice daily, once for each shift change. Huddles and handoff will be confirmed by having the charge nurse initial a handoff log kept at the nurses' station.

By September 2018, one mid-term goals will be evaluated. The nurses' compliance with utilization of the handoff tool and huddles will be assessed by reviewing the handoff log for missing initials, with a goal of 50% completed tools.

By December 2018, 75% of nurses will utilize the handoff tool and huddle and there will be an increase in the TeamSTEPPS post- curriculum survey scores showing improvements in teamwork and communication.

Implement: WHAT strategies and tactics were used? WHEN were the desired changes made?

Step 1: Perform small tests of change

Step 2: Full-scale implementation

Track: WHAT structures and processes (practices) were changed based on the metrics we used to measure progress (including frequency of assessment)? HOW did these changes affect outcomes? WHAT do we need to do differently to make greater progress toward improving outcomes?

Date:_____Re-Assessment Date 1:_____Re-Assessment Date 2:_____, etc.

Plan Developed by (List all contributors): _____

Reference: Guidry, M., Vischi, T., Han, R., & Passons, O. MAP-IT: a guide to using healthy people 2020 in your community. U.S. Department of Health and Human Services. The Office of Disease Prevention and Health Promotion, Washington, D.C. https://www.healthypeople.gov/2020/tools-and-resources/Program-Planning

Appendix D – T-TAQ Measurement/Evaluation Survey

TeamSTEPPS® 2.0 for Long-Term Care

TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ) for Long-Term Care

Instructions: Please respond to the questions below by placing a check mark (√) in the box that corresponds to your level of agreement from *Strongly Disagree* to *Strongly Agree*. Please select only one response for each question.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Team Structure					
1. It is important to ask residents and their families for feedback regarding resident care.					
2. Residents are a critical component of the care team.					
3. This nursing home's administration influences the success of direct care teams.					
4. A team's mission is of greater value than the goals of individual team members.					
5. Effective team members can anticipate the needs of other team members.					
6. High performing teams in health care share common characteristics with high performing teams in other industries.					
Leadership					
7. It is important for leaders to share information with team members.					
8. Leaders should create informal opportunities for team members to share information.					
9. Effective leaders view honest mistakes as meaningful learning opportunities.					
10. It is a leader's responsibility to model appropriate team behavior.					
11. It is important for leaders to take time to discuss with their team members plans for each resident.					
12. Team leaders should ensure that team members help each other out when necessary.					

PLEASE CONTINUE TO THE NEXT PAGE

TeamSTEPPS® 2.0 for Long-Term Care

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Situation Monitoring					
13. Individuals can be taught how to scan the environment for important situational cues.					
14. Monitoring residents provides an important contribution to effective team performance.					
15. Even individuals who are not part of the direct care team should be encouraged to scan for and report changes in resident status.					
16. It is important to monitor the emotional and physical status of other team members.					
17. It is appropriate for one team member to offer assistance to another who may be too tired or stressed to perform a task.					
18. Team members who monitor their emotional and physical status on the job are more effective.					
Mutual Support					
19. To be effective, team members should understand the work of their fellow team members.					
20. Asking for assistance from a team member is a sign that an individual does not know how to do his/her job effectively.					
21. Providing assistance to team members is a sign that an individual does not have enough work to do.					
22. Offering to help a fellow team member with his/her individual work tasks is an effective tool for improving team performance.					
23. It is appropriate to continue to assert a resident safety concern until you are certain that it has been heard.					
24. Personal conflicts between team members do not affect resident safety.					

PLEASE CONTINUE TO THE NEXT PAGE

TeamSTEPPS® 2.0 for Long-Term Care

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Communication					
25. Teams that do not communicate effectively significantly increase their risk of committing errors.					
26. Poor communication is the most common cause of reported errors.					
27. Adverse events may be reduced by maintaining an information exchange with residents and their families.					
28. I prefer to work with team members who ask questions about information I provide.					
29. It is important to have a standardized method for sharing information when handing off residents.					
30. It is nearly impossible to train individuals how to be better communicators.					

Please provide any additional comments in the space below.

Thank you for your participation!

Appendix E – T-TPQ Measurement/Evaluation Survey

TeamSTEPPS® 2.0 for Long-Term Care

TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) for Long-Term Care

Instructions: Please respond to the questions below by placing a check mark (√) in the box that corresponds to your level of agreement from *Strongly Agree* to *Strongly Disagree*. Please select only one response for each question.

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Team Structure						
1.	The skills of staff overlap sufficiently so that work can be shared when necessary.					
2.	Staff are held accountable for their actions.					
3.	Staff within my unit, department, or work area share information that enables timely decision making by the direct resident care team.					
4.	My unit, department, or work area makes efficient use of resources (e.g., staff supplies, equipment, information).					
5.	Staff understand their roles and responsibilities.					
6.	My unit, department, or work area has clearly articulated goals.					
7.	My unit, department, or work area operates at a high level of efficiency.					
Leadership						
8.	My supervisor/manager considers staff input when making decisions about resident care.					
9.	My supervisor/manager provides opportunities to discuss the unit's, department's, or work area's performance after an event.					
10.	My supervisor/manager takes time to meet with staff to develop a plan for resident care.					
11.	My supervisor/manager ensures that adequate resources (e.g., staff, supplies, equipment, information) are available.					
12.	My supervisor/manager resolves conflicts successfully.					
13.	My supervisor/manager models appropriate team behavior.					
14.	My supervisor/manager ensures that staff are aware of any situations or changes that may affect resident care.					

PLEASE CONTINUE TO THE NEXT PAGE

TeamSTEPPS® 2.0 for Long-Term Care

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Situation Monitoring						
15.	Staff effectively anticipate each other's needs.					
16.	Staff monitor each other's performance.					
17.	Staff exchange relevant information as it becomes available.					
18.	Staff continuously scan the environment for important information.					
19.	Staff share information regarding potential complications (e.g., resident changes, bed availability).					
20.	Staff meets to reevaluate resident care goals when aspects of the situation have changed.					
21.	Staff correct each other's mistakes to ensure that procedures are followed properly.					
Mutual Support						
22.	Staff assist fellow staff during high workload.					
23.	Staff request assistance from fellow staff when they feel overwhelmed.					
24.	Staff caution each other about potentially dangerous situations.					
25.	Feedback between staff is delivered in a way that promotes positive interactions and future change.					
26.	Staff advocate for residents even when their opinion conflicts with that of a senior member of the unit, department, or work area.					
27.	When staff have a concern about resident safety, they challenge others until they are sure the concern has been heard.					
28.	Staff resolve their conflicts, even when the conflicts have become personal.					

PLEASE CONTINUE TO THE NEXT PAGE

TeamSTEPPS® 2.0 for Long-Term Care

		Strongly Agree		Neutral		Strongly Disagree
Communication						
29.	Information regarding resident care is explained to residents and their families in lay terms.					
30.	Staff relay relevant information in a timely manner.					
31.	When communicating with residents, staff allow enough time for questions.					
32.	Staff use common terminology when communicating with each other.					
33.	Staff verbally verify information that they receive from one another.					
34.	Staff follow a standardized method of sharing information when handing off residents.					
35.	Staff seek information from all available sources.					

Appendix F - AHRQ Nursing Home Survey on Patient Safety

Nursing Home Survey on Patient Safety

In this survey, **"resident safety"** means preventing resident injuries, incidents, and harm to residents in the nursing home.

This survey asks for your opinions about resident safety issues in your nursing home. It will take about 15 minutes to complete.

To mark your answer, just put an X or a √ in the box: [x] or [√].

If a question does not apply to your job or you do not know the answer, please mark the box in the last column. If you do not wish to answer a question, you may leave your answer blank.

SECTION A: Working in This Nursing Home

How much do you agree or disagree with the following statements?	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Does Not Apply or Don't Know
1. Staff in this nursing home treat each other with respect	1	2	3	4	5	9
2. Staff support one another in this nursing home	1	2	3	4	5	9
3. We have enough staff to handle the workload	1	2	3	4	5	9
4. Staff follow standard procedures to care for residents	1	2	3	4	5	9
5. Staff feel like they are part of a team	1	2	3	4	5	9
6. Staff use shortcuts to get their work done faster	1	2	3	4	5	9
7. Staff get the training they need in this nursing home	1	2	3	4	5	9
8. Staff have to hurry because they have too much work to do	1	2	3	4	5	9
9. When someone gets really busy in this nursing home, other staff help out	1	2	3	4	5	9
10. Staff are blamed when a resident is harmed						

SECTION A: Working in This Nursing Home (continued)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Does Not Apply or Don't Know
11. Staff have enough training on how to handle difficult residents.....	1	2	3	4	5	9
12. Staff are afraid to report their mistakes.....	1	2	3	4	5	9
13. Staff understand the training they get in this nursing home.....	1	2	3	4	5	9
14. To make work easier, staff often ignore procedures.....	1	2	3	4	5	9
15. Staff are treated fairly when they make mistakes.....	1	2	3	4	5	9
16. Residents' needs are met during shift changes	1	2	3	4	5	9
17. It is hard to keep residents safe here because so many staff quit their jobs	1	2	3	4	5	9
18. Staff feel safe reporting their mistakes						

SECTION B: Communications

How often do the following things happen in your nursing home?	Rarely	Some-times	Most of the time	Always	Does Not Apply or Don't Know
1. Staff are told what they need to know before taking care of a resident for the first	1	2	3	4	5	9
2. Staff are told right away when there is a change in	1	2	3	4	5	9
3. We have all the information we need when resident s	1	2	3	4	5	9
4. When staff report something that could harm a resident, someone takes care of it.....	1	2	3	4	5	9
5. In this nursing home, we talk about ways to keep incidents from happening again.....	1	2	3	4	5	9

SECTION B: Communications (continued)

	Never	Rarely	Some-times	Most of the time	Always	Does Not Apply or Don't Know
6. Staff tell someone if they see something that might harm a resident.....	1	2	3	4	5	9
7. Staff ideas and suggestions are valued in this nursinghome.....	1	2	3	4	5	9
8. In this nursing home, we discuss ways to keep residents safe from harm.....	1	2	3	4	5	9
9. Staff opinions are ignored in this nursing home.....	1	2	3	4	5	9
10. Staff are given all the information they need to care for residents	1	2	3	4	5	9
11. It is easy for staff to speak up about problems in this nursing home	1	2	3	4	5	9

SECTION C: Your Supervisor

How much do you agree or disagree with the following statements?	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Does Not Apply or Don't Know
1. My supervisor listens to staff ideas and suggestions about resident safety	1	2	3	4	5	9
2. My supervisor says a good word to staff who follow the right procedures	1	2	3	4	5	9
3. My supervisor pays attention to resident safety problems in this nursing home.....	1	2	3	4	5	9

SECTION D: Your Nursing Home

How much do you agree or disagree with the following statements?	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Does Not Apply or Don't Know
1. Residents are well cared for in this nursing home.....	1	2	3	4	5	9
2. Management asks staff how the nursing home can improve resident safety.....	1	2	3	4	5	9
3. This nursing home lets the same mistakes happen again and again.....	1	2	3	4	5	9

SECTION D: Your Nursing Home (continued)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Does Not Apply or Don't Know
4. It is easy to make changes to improve resident safety in this nursing home.....	1	2	3	4	5	9
5. This nursing home is always doing things to improve resident safety.....	1	2	3	4	5	9
6. This nursing home does a good job keeping residents safe	1	2	3	4	5	9
7. Management listens to staff ideas and suggestions to improve resident safety.....	1	2	3	4	5	9
8. This nursing home is a safe place for residents	1	2	3	4	5	9
9. Management often walks around the nursing home to check on resident care.....	1	2	3	4	5	9
10. When this nursing home makes changes to improve resident safety, it checks to see if the changes worked	1	2	3	4	5	9

SECTION E: Overall Ratings

1. I would tell friends that this is a safe nursing home for their family.
   - ☐ a. Yes
   - ☐ b. Maybe
   - ☐ c. No

2. Please give this nursing home an overall rating on resident safety.

Poor	Fair	Good	Very good	Excellent
▼	▼	▼	▼	▼
1	2	3	4	5

SECTION F: Background Information

1. What is your job in this nursing home? Check ONE box that best applies to your job. If more than one category applies, check the highest level job.

☐ a. **Administrator/Manager**
- Executive Director/Administrator
- Medical Director
- Director of Nursing/Nursing Supervisor
- Department Head
- Unit Manager/Charge Nurse Assistant
- Director/Assistant Manager
- Minimum Data Set (MDS) Coordinator/ Resident Nurse Assessment Coordinator (RNAC)

☐ b. **Physician (MD, DO)**

☐ c. **Other Provider**
- Nurse Practitioner Clinical Nurse Specialist Physician Assistant

☐ d. **Licensed Nurse**
- Registered Nurse (RN) Licensed Practical Nurse (LPN) Wound Care Nurse

☐ e. **Nursing Assistant/Aide**
- Certified Nursing Assistant (CNA)
- Geriatric Nursing Assistant (GNA)
- Nursing Aide/Nursing Assistant

☐ f. **Direct Care Staff**
- Activities Staff Member
- Dietitian/Nutritionist
- Medication Technician
- Pastoral Care/Chaplain
- Pharmacist
- Physical/Occupational/Speech/ Respiratory Therapist
- Podiatrist
- Social Worker

☐ g. **Administrative Support Staff**
- Administrative Assistant
- Admissions
- Billing/Insurance
- Secretary
- Human Resources
- Medical Records

☐ h. **Support Staff**
- Drivers
- Food Service/Dietary
- Housekeeping Laundry
- Service Maintenance
- Security

☐ i. **Other** (Please write the title of your job):

_____

2. How long have you worked in this nursing home?

☐ a. Less than 2 months
☐ b. 2 to 11 months
☐ c. 1 to 2 years
☐ d. 3 to 5 years
☐ e. 6 to 10 years
☐ f. 11 years or more

3. How many hours per week do you usually work <u>in this nursing home</u>?

☐ a. 15 or fewer hours per week
☐ b. 16 to 24 hours per week
☐ c. 25 to 40 hours per week
☐ d. More than 40 hours per week

SECTION F: Background Information (continued)

4. When do you work most often? Check ONE answer.
   - ☐ a. Days
   - ☐ b. Evenings
   - ☐ c. Nights

5. Are you paid by a staffing agency when you work for this nursing home?
   - ☐ a. Yes
   - ☐ b. No

6. In your job in this nursing home, do you work directly with residents most of the time? Check ONE answer.
   - ☐ a. YES, I work directly with residents most of the time.
   - ☐ b. NO, I do NOT work directly with residents most of the time.

7. In this nursing home, where do you spend most of your time working? Check ONE answer.
   - ☐ a. Many different areas or units in this nursing home / No specific area or unit
   - ☐ b. Alzheimer's / Dementia unit
   - ☐ c. Rehab unit
   - ☐ d. Skilled nursing unit
   - ☐ e. Other area or unit (Please specify): _____

SECTION G: Your Comments

Please feel free to write any comments about resident care and safety in this nursing home.

THANK YOU FOR COMPLETING THIS SURVEY.

Appendix G – Safer Sign Out Handoff Tool

See next page please.

SAFER SIGN OUT

☐ Check if No Patients SignedOut

Date/Time: _____

*Off-GoingClinician: _____

Receiving Clinician: _____

Page 1 of 2

Form (2.0)

Patient Name & Age	Problem List & Key Issues (*Clinical Providers only*)	Pending Items	Disposition	Receiving Clinician's Notes
☐ Room	Dx/CC: Key Issues: Safety Cautions:	☐ ☐ ☐ ☐ ☐	Home _____ Admit _____ Transfer _____ NH _____ TBD _____	☐ Vital Signs Reviewed ☐ Rounded on Patient ☐ Communicated w/ Nurse Name: _____
☐ Room	~~Dx/CC:~~ Key Issues: Safety Cautions:	☐ ☐ ☐ ☐ ☐	Home _____ Admit _____ Transfer _____ NH _____ TBD _____	☐ ☐ ☐
☐ Room	~~Dx/CC:~~ Key Issues: Safety Cautions:	☐ ☐ ☐ ☐ ☐	Home _____ Admit _____ Transfer _____ NH _____ TBD _____	☐ ☐ ☐
☐ Room	~~Dx/CC:~~ Key Issues: Safety Cautions: _____	☐ ☐ ☐ ☐ ☐	Home _____ Admit _____ Transfer _____ NH _____	☐ ☐ ☐

TBD

Appendix H - Project Proposal Summary

Background of the problem

Ineffective communication remains a major factor contributing to medical errors and sentinel events in health care that lead to fatalities and billions in malpractice cost (TJC, 2017). Nurses have a leading role to communicate valuable patient information to maintain patient safety (Renz & Carrington, 2016). In the long-term care setting, ineffective communication and poor teamwork have been found to be contributing factors 89% of adverse events, such as medication errors, delayed or inappropriate interventions and missed nursing care (Andersson et al., 2018). These adverse events in an older adult can lead to hospitalizations, injuries and death (Thomas & Galla, 2013). Communication and teamwork require leadership accountability, team-based care, and organizational structure to promote patient safety (Cook, 2016). Implementing a standardized handoff tool and curriculum for team building such as Team Strategies and Tools to Enhance Performance and Patient Safety, (TeamSTEPPS) can improve communication and teamwork among nurses and create safer patient environments (Cooke, 2016).

Purpose statement

The purpose of this Doctor of Nursing Practice (DNP) project is to implement and evaluate TeamSTEPPS curriculum with a standardized handoff communication tool to improve communication and teamwork between RNs and LPNs at a long-term care facility.

Evidence to support practice change

Eighty-nine percent of serious adverse events involved medication errors, missed nursing care, falls and delayed or inappropriate interventions (Andersson et al., 2017). Inadequate communication, teamwork failure, lack of competence and incomplete or lack of documentation were the most common contributing factors. The study concluded that nurses should be made aware and given knowledge about factors contributing to serious adverse events and prevention (Andersson, et al., 2017). Cooke (2016), Haynes and Strickler (2014), Howe (2014) and Thomas and Galla (2013) support the use of TeamSTEPPS curriculum and handoff tool to foster both teamwork, communication and improved patient safety in the healthcare setting.

Description of implementation plan

This quality improvement project occurred over 14 weeks. During week one, the DNP project leader administer pre- TeamSTEPPS surveys, and educate the nurses on the tailored TeamSTEPPS's curriculum and handoff tool. During week two, the nurses on the designated units were informed about the start date for their new handoff tool. During weeks three through thirteen, the nurses utilized the Safer Sign Out handoff tool to conduct shift change and practiced learned communication strategies. Nurses were observed during each shift change throughout week three. To assess compliance, the DNP project leader reviewed the handoff logs for missing initials and provided direct feedback to nurses. During weeks thirteen and fourteen, the pilot was completed, and nurses completed post- TeamSTEPPS surveys.

Data collection and analysis plan

Coded data reports was constructed in excel by the DNP project leader from the evaluation surveys. Descriptive statistics were used for data analysis: frequencies, percentages, medians and standard deviations. The following Likert surveys was used to analyze the nurse's perceptions and attitudes about teamwork and communication pre and post: T-TAQ and T-TPQ. Data analysis of Likert responses from the AHRQ Nursing Home Survey on Patient Safety survey was not able to be calculated to assess patient safety but was used to collect demographic data. After TeamSTEPPS implementation, the nurses' attitudes and perceptions about teamwork, communication, and patient safety survey percentage scores are expected to increase, creating a safer patient environment.

Human Subjects Protection / Approval Processes

The proposal to implement the quality improvement project as a Non-Human Subjects Research determination was submitted to the University of Maryland Baltimore Institutional Review Board (IRB). The proposal was submitted to the organization's medical director for approval since they do not have an IRB. Security of all data collected was maintained on a secure password protected computer. Surveys completed by nurses did not include any identifiers, was collected immediately after completion, entered into the DNP's computer and then shredded.

Appendix I - Procedures and Data Collection Plan

Time (Approximate Month)	Procedure	Data collection	Person to complete task
Prior to implementation (July 2018)	– Met with stakeholders to present project and determined units for implementation o medical director, director of nursing, nurse educator, health services administrator – Nurses on designated units were informed in person and via email about practice change and sign up for training	N/A	DNP project leader DNP project leader, director of nursing and health services administrator
Week one (August 2018)	- TeamSTEPPS Fundamentals training began for nurses on designated units who volunteered to participate o Module two – Team Structure o Module three - Communication ▪ Safer Sign Out Handoff tool - Reviewed Safe Sign Out handoff tool in detail	TeamSTEPPS recommended Pre-surveys administered prior to beginning training course - T-TAQ - T-TPQ - AHRQ Nursing Home Survey on Patient Safety	DNP project leader
Week two (September 2018)	– Nurses on designated units were informed in person and via email about start date of the project – Blank copies of Safer Sign Out handoff tool and blank handoff compliance logs were placed in handoff binder kept at each nurses station.		DNP project leader, director of nursing and health services administrator DNP project leader

Time (Approximate Month)	Procedure	Data collection	Person to complete task
Week three through thirteen (September/November 2018)	- The nurses utilized the Safer Sign Out handoff tool recommended by TeamSTEPPS to conduct shift change report - During week five the nurses were observed conducting hand off. o During week three nurses initialed whether report was completed on a shift handoff log kept at the nurse's station in a binder. ▪ The DNP project leader audited handoff tool logs randomly, inquired about missing initials and gave direct feedback.	N/A	DNP project leader observed shift report during week three DNP project leader reviewed handoff tool log for compliance during random audits and gave direct feedback
Weeks fourteen (November 2018)	– Nurses who participated in the TeamSTEPPS curriculum completed two TeamSTEPPS recommended surveys to evaluate their TeamSTEPPS' knowledge, attitudes and perceptions on teamwork and communication	TeamSTEPPS recommended Post- surveys administered - T- TAQ - T-TPQ *** AHRQ Nursing Home Survey on Patient Safety was not administered due to small sample size.	DNP project leader administered post- surveys

Appendix J – Program Objectives, Curriculum and Strategies

This curriculum is for all participating nurses working on the designated unit. The TeamSTEPPS fundamentals course has been tailored to the organization's needs, focusing on teamwork and communication strategies.

• Module 2: Team Structure—Defines a team and its members, including residents and their families, and describes a multi-team system, which is important in planning a TeamSTEPPS implementation.

• Module 3: Communication—Provides tools and strategies for communicating effectively through standardized information exchange strategies such as SBAR, check-back, call-out,and handoff.

Learning Objectives	Content Outline	Method of Instruction	Time Spent (approximate)	Method of Evaluation
Module 2: Team Structure— Defines a team and its members, including residents and their families, and describes a multi-team system, which is important in planning a TeamSTEPPS implementation. • Define a "team"; • Identify the role of residents and their families as part of the care team; and • Describe the components and composition of a multiteam system.	1. Introduction (pages 5 – 6) 2. Definition of a Team (Page 7) 3. Teams and Teamwork Exercise (page 8) 4. Partnering with Residents and Families (page 9 - 12) 5. Multi-Team System (page 13 – 18) 6. Team Structure Video and Discussion (pages 19 – 20) 7. Applying TeamSTEPPS Exercise (Page21)	PowerPoint lecture with supplemental videos from the step by step TeamSTEPPS curriculum.	2 mins 2 mins 5 – 10 mins* 5 mins 15 mins 10 mins 5 mins (Total 50 mins)	Pre- and Post survey scores: T-TAQ, T-TPQ & AHRQ Nursing Home Survey on Patient Safety
Module 3: Communication— Provides tools and	1. Introduction (Pages 5 – 6)	PowerPoint lecture with supplemental	3 mins	Pre- and Post-survey scores: T-

strategies for communicating effectively through standardized information exchange strategies such as SBAR, check-back, call-out, and handoff. • Describe how communication affects team processes and outcomes; • Define effective communication; • Identify communication challenges; and • Identify TeamSTEPPS tools and strategies that can improve a team's communication.	2. Importance of Communication (Page 7) 3. Communication Failures (Pages 8 – 9) 4. Communication: Definition, Standards, Challenges (Pages 10 – 15) (Challenges Examples*) 5. Information Exchange Strategies (Pages 16 – 27) 6. Tools and Strategies Summary (Page 28) 7. Applying TeamSTEPPS Exercise (Page 29)	videos from the step by step TeamSTEPPS curriculum.	2 mins 3 mins* 10 mins 30 mins 2 mins 5 mins (Total 45mins)	TAQ, T-TPQ & AHRQ Nursing Home Survey on Patient Safety
Modules 1, and 4-7 will be omitted from this training course. TeamSTEPPS curriculum can be tailored to the facility's needs. Modules two and three focus on teamwork, communication and strategies such as implementing handoff tools and huddles which are the needs of this institution.				