

IMPROVING THE TRANSFER PROCESS FROM THE SKILLED NURSING
FACILITY TO THE EMERGENCY DEPARTMENT: ADDING A
COMMUNICATION HAND-OFF TOOL

by

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ABSTRACT

MELISSA VICTORIA WILLIAMS. Improving the Transfer Process from the Skilled Nursing Facility to the Emergency Department: Adding a Communication Hand-Off Tool (Under the direction of DR. KATHLEEN JORDAN)

The lack of communication regarding essential clinical patient data exists between the skilled nursing facilities (SNF) and the emergency department staff for patients that are being transferred. Consequently, the risk for adversely affecting quality and safety increases with the lack of essential patient information, which also has the potential to lead to a less than optimal patient experience. When essential patient information is incomplete or eliminated during the transfer process, the deficiencies can lead to repeat ED visits and multiple follow-up phone calls for clarification. Evidence is available in emergency medicine that addresses the fragmented bidirectional flow of information during the transitional phases of residents presenting for acute concerns.

The purpose of the DNP project was to pilot and implement a written communication hand-off tool that was designed to facilitate improved written interaction between the Brian Center SNF and the Atrium Healthcare main Emergency Department. Fourteen Brian Center SNF nurses underwent pre and post-testing with completion of education of a one-page hand-off tool designed by the project leader. Effectiveness of the newly implemented transfer document was measured by the satisfaction scores of the SNF nurses who utilized the tool during the two-month study period. Post-survey results revealed that 100% of the nurses verbalized satisfaction and intent of future use of the DNP hand-off tool.

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CHAPTER 1: INTRODUCTION

In 2014, Carolinas Medical Center (CMC) initiated a geriatric Emergency Department (ED) consultation service which targeted adults 65 years and older. The pilot program began with two nurse practitioners under the direction of Dr. Beata Skudlarska who was a newly hired expert geriatrician. This visionary leader proposed to replicate her previous successful consultation service at Yale Healthcare System. While serving as section chief for geriatric medicine at Bridgeport Hospital, Dr. Skudlarska initiated the first Geriatric Emergency Medicine Systems (GEMS) nurse (Rogers, 2009). The emergency department nurse was crossed-trained in geriatric medicine, so she facilitated better transitions through the triage and discharge of older patients (Rogers, 2009). The program grew to include advanced care practitioners who incorporated geriatric assessments, which resulted in improved outcomes, decreased readmissions, and a subsequent expansion into a home visit service (Rogers, 2009).

The geriatric emergency department consultation service at CMC Main matriculated into two other system hospitals with a current team composed of geriatricians, nurse practitioners, and a physician's assistant. Following a standard evaluation by emergency department providers, the geriatric service is then consulted to complete a subsequent, geriatric focused assessment. The core of the program has centered around the collaborative workflow and communication between the emergency medicine clinician staff and the geriatric team. The shared decision for patient disposition has been an important component of the dialogue and especially crucial for skilled-nursing facility (SNF) residents. In most cases, the geriatric provider indirectly assumed the role of a liaison between the Emergency Department (ED) and the Skilled-

Nursing Facility (SNF) staff. This function enabled the geriatric clinician to assist in the transition process of SNF residents who were admitted or discharged from the ED.

1.1: Problem Statement

The lack of communication regarding essential clinical patient data has always existed between the skilled nursing facilities (SNF) and the emergency department staff for transferred patients. Inadequate relaying of pertinent clinical or demographic information upon arrival to the ED hinders a prompt plan for emergent attention. Treatment delays or uncertainties posed a threat by adversely affecting safety and quality of care. These deficiencies could similarly lead to several avoidable emergency department visits or multiple follow-up phone calls for clarification. Evidence has been available in emergency medicine that addressed the fragmented bidirectional flow of information during the transitional phases of residents presenting for acute concerns. Consequently, there was a need to identify suitable items of information which health care professionals agree were essential (Griffiths, Morphet, Innes, Crawford, & Williams, 2014).

There are three Brian Center Skilled Nursing Facilities in Charlotte. Several ED nursing staff and medical providers had identified an opportunity for better transfer feedback and collaboration with Brian Center Skilled Nursing Facility on Shamrock Drive. In 2017, Brian Center residents accounted for 16.4% of Atrium Health Main ED visits between July 1st and September 30th (Medicare.gov, 2018). Readmissions of the targeted SNF was 71% in comparison to the North Carolina average of 66% (Medicare.gov, 2018).

1.2: Significance and Purpose of the Project

The purpose of the DNP project was to pilot and implement a written communication hand-off tool designed to facilitate enhanced written communication between the Brian Center SNF and the CMC Main ED. The ultimate objective was to measure a reduction of emergency department call-backs to the Brian Center due to missing, incomplete, or misinterpreted documents. The deficiency of shared patient information from the transferring facility had been especially challenging with a cognitively impaired patient. The goal to streamline the transfer process was designed to improve staff satisfaction between both facilities. This concern aligned with the nursing action plan of Atrium Health to leverage technology or methods that optimized patient care and nursing time.

There have been multiple economic, social, and clinically challenging obstacles for older adults presenting to the emergency department for acute conditions. Frail, elderly adults usually present acutely with multiple underlying comorbidities, and many emergency medicine providers feel uncomfortable coordinating a treatment plan (Jay, Whittaker, McIntosh, & Hadden, 2017). As a result, older patients had the potential to experience less than optimal outcomes.

The admittance and discharge documents that accompanied long-term residents were often ambiguous or lacked significant data which resulted in several phone call attempts to speak with a facility staff member in order to obtain clarification. This was a time-consuming process and reduced emergency department throughput time. Conversely, the discharge documents returning with the patients were frequently misinterpreted and resulted in recurrent ED visits for the same complaint.

1.3: Clinical Question

The PICOT question for the evidenced-based project was as follows: “In residents transferred from the Brian Center SNF to the CMC Main ED, does the implementation of a written communication hand-off tool improve the patient transfer communication process as measured by staff satisfaction scores?”

1.4: Project Aims and Objectives

Quality communication has been a critical factor between the emergency department clinicians, geriatric providers, and the skilled nursing facility staff. The value of good communication was especially needed when long-term, older residents were admitted or discharged from the emergency department environment. The aim and ultimate objective of implementing the hand-off tool was to improve the exchange of information while promoting staff satisfaction with preparing the patient for transport. The long-range objective involved the matriculation of use of this communication hand-off tool to other SNFs with high ED utilization to ensure the safety and quality of life as a service to the community (Bonnell & Smith, 2014).

CHAPTER 2: LITERATURE REVIEW/CONCEPTUAL FRAMEWORK

There were multiple economic, social, and clinically challenging obstacles for older adults presenting to the emergency department for acute conditions. Frail, elderly adults usually present acutely with multiple underlying comorbidities or psychosocial challenges, and many emergency medicine providers feel uncomfortable in diagnosing and managing acute medical conditions (Jay, Whittaker, McIntosh, & Hadden, 2017). The elderly population often presented to the emergency department for evaluation of both minor and major clinical problems. This patient population had a greater risk for admissions than patients younger than 65 years of age. The likelihood of admission was also correlated with multiple comorbidities, and frailty.

Baseline functionality and cognitive status were equally significant factors considered when contemplating admission. These aspects could have directly influenced the emergency department providers' medical decision-making to either admit or discharge the older adult. Some older adults can return home independently or back to skilled nursing facilities. One study noted that nursing home residents accounted for over 2.2 million ED visits annually in the United States (Wang, Shah, Allman, & Kilgore, 2011). Some researchers had discovered that many older adults experienced a decline in health prior to an ED encounter (Caplan, Williams, Daly, & Abraham, 2004). A randomized controlled trial studied the discharge of elderly from the ED (DEED), and the results endorsed recommendations from a comprehensive geriatric assessment (Caplan, et al., 2004). One subcomponent of this project is to add recommendations of a comprehensive geriatric ED assessment to discharge documents in the future.

The elderly patient population was often identified as vulnerable and high risk for health care transitions. In a study conducted by Vognar and Mujahid (2015) concluded that a poorly executed care transition has been associated with increased hospital readmission rates and increased adverse events. Skilled Nursing Facility residents often have multiple comorbidities, complex medical histories, cognitive impairments or dementia, and functional limitations (Wang et al., 2011). The investigators also recognized that information exchange between the SNF and Emergency Department was often poor which complicated care coordination between the two settings (Wang et al., 2011).

Several communication handouts have been created in the effort to improve communication from the SNF setting to Emergency Department. The Delphi tool was created to test the feasibility of instruments designed to support SNF to ED transfers (Tsai & Tsai, 2018, p. 117). The conclusion of this research resulted in four common themes essential to successful communication between the emergency department and skilled nursing facilities. Patient demographics, significant clinical results, contact information of providers, and critical diagnostic findings with treatment plans were ranked higher in priority. In 2010, the American Geriatrics Society introduced a web-based electronic Internet link between the emergency department and skilled nursing facilities. The results showed that using an internet-based system increased the amount of information communicated during SNF-ED care transitions (Hustey & Palmer, 2010, p. 1148).

The Brian Center nursing staff had used an electronic version of the Situation-Background-Assessment-Recommendation (SBAR) format. The form was completed

online and then printed for transferring patients to the ED. The SBAR template had also been utilized by Medical-Surgical nurses to report acute clinical changes. An integrated literature review concluded that the SBAR was an effective intervention for patient safety through improved communication, nurse reporting, and outline for nursing documentation (Stewart, 2017). Several Brian Center nurses admitted to using the SBAR as an outlined for the transfer nursing documentation. However, the consensus of the nurses agreed that the communication hand-off was more appropriate as a cover sheet for the transfer process.

Inadequate staffing has been a big contributor to the difficulties in facilitating better communication for patients transferring to the ED. It is a common theme described in the literature that nurse to resident ratio in the SNFs have been an ongoing concern in United States. One study focused on policy changes enacted in California and Ohio where investigators reviewed the effects of minimal nursing hours per resident day regulations on nursing home staffing levels and care quality (Chen & Grabowski, 2015). The results showed that minimal staffing standards did increase total nursing hours per resident day by about 5% on average (Chen & Grabowski, 2015). The staffing regulations also led to a reduction in severe deficiency citations and improvement in certain health conditions that required intensive nursing care (2015). However, a limitation of the study included the unintended consequence of both lowering the ratio of nurse aids to licensed nurses and an overall reduction of the absolute level of indirect care (Chen & Grabowski, 2015).

Most emergency departments may not have the appropriate care plans and discharge instructions for this patient population. The functional and social needs of older

adults who return to their residence were usually complex and required interprofessional input (Cadogan, Phillips, & Ziminski, 2016, p. 330). McLeod, Hominick, and Rockwood (2016) suggested that a safe discharge for the frail, older patient was achievable when functional and social needs were promptly met. These interventions had the potential prevent repeat Emergency Department encounters or hospitalizations. Jay et al. (2017) completed a systematic review that supported consultant, geriatrician led comprehensive assessments performed in the ED to reduce inpatient admission rates.

Stevens et al. (2017) explained that the Veterans Administration also recognized the significant challenges older adults faced at discharge. Their research revealed that veterans 65 years and older represented 40% of the 19 million older adults who visited the emergency department in 2013 (Stevens et al., 2017, p. 1609). According to this research, nearly 30% of those discharged were prescribed at least two or more new medications. Consequently, the medications prescribed at the time of discharge were considered inappropriate. The high-risk medications conflicted with the standards of the American Geriatrics Society which supports the BEERs listing criteria. The concerns of the Veteran's Administration gave rise to the creation Enhancing Quality of Provider Practices for Older Adults in the Emergency Department or (EQUiPPED) (Stevens et al., 2017).

EQUiPPED has been a multicomponent quality improvement initiative that combined education, electronic clinical decision support, and individual provider feedback to influence prescribing and improve medication safety for older adults (Stevens et al., 2017). The objective was to evaluate the effectiveness and sustainability of EQUiPPED to reduce the use of potentially inappropriate medications (PIMs), as

defined by the American Geriatrics Society 2012 Beers Criteria, prescribed to older Veterans at the time of emergency department (ED) discharge (Stevens et al., 2017). The program has been activated in several VA hospitals throughout the United States to include the VA hospital in Durham, North Carolina.

Other research studies compared elements included in several communication hand-off tools used for SNF to ED transfers. Results of the DNP project pre-tests revealed the need for additional education related to falls, the identifying delirium, and the importance of attaching advanced directive documents. A pre-post comparison study calculated the total Medicare expenditures for fall -related injuries were \$13 billion dollars (Hoffman, Hays, Shapiro, Wallace, & Ettner, 2017). 39% of this cost was associated with skilled nursing facility transfers to the emergency department (Hoffman et al., 2017).

The emergency department clinicians need to be aware of the patient's normal demeanor and capacity for appropriate medical decision making, and this requirement was especially essential with dementia patients. These factors used in determining acute delirium would guide the initial treatment approach. The geriatric nurse practitioners embedded in the emergency department utilized the Confusion Assessment Method (CAM) as the screening tool for delirium. The CAM has been adapted for intensive care units, emergency departments, and long-term settings (Voyer et al., 2015). It served as a validated screening for delirium with a sensitivity of 93-100% and a specificity of 98-100% (Voyer et al., 2015). The communication hand-off tool allowed the transferring nurse to choose either an "acute change" or "at baseline."

During the education intervention session of the project, the “Do Not Resuscitate Order” (Goldenrod) and Medical Orders Scope of Treatment forms were explained. The handoff tool required that the transferring nurse not only circle the patient’s code status, but also attach the Goldenrod as a supporting document in addition to the patient’s medication record and the demographic sheet. Annotation of the hand-off tool confirmed that the transferring nurse sent the original advanced directive document. Consequently, a few of the Brian Center SNF nurses reported that these documents were frequently omitted in the discharge instructions when the resident returned to the facility.

The project leader further expanded upon the potential of residents transitioning to palliative or Hospice care in the emergency department with verification of advance directives. Robust literature supported palliative or hospice transitions while in the emergency department, but one study showed that only a fraction of emergency medicine providers initiated these consults (Babcock, Kuntz, Kowalsky, Calitri, & Kenny, 2016). This study further indicated that a palliative care consultation improved quality of life and patient with caregiver satisfaction while also decreasing cost and length of stay (Babcock et al., 2016).

2.1: Conceptual/Theoretical Framework

The Synergy Model for Clinical Excellence was the conceptual framework for this DNP project. The synergy model for patient care was developed with the intention of facilitating a “synergistic” relationship with the patient, clinical setting, or healthcare system, and the Advance Practice Nurse’s competency (*Synergy for clinical excellence : the AACN synergy model for patient care*, 2005). The model identifies eight nursing competencies which are consistent with the values of the DNP student, including clinical

judgment, clinical inquiry, facilitation of learning, collaboration, systems thinking, advocacy/moral agency, caring practices, and response to diversity. These competencies are core attributes of professional nursing practice (*Synergy for clinical excellence : the AACN synergy model for patient care*, 2005). These traits were integrated within the development of the DNP scholarly project.

Clinical inquiry was the foundation of the early stages of this project as the initial DNP immersion explained how to ask a clinical question. Understanding of the PICOT format enabled the novice DNP student to identify a **p**roblem, **i**ntervention, **c**omparison, and projected **o**utcome. The requirement of evidence-based medicine is the ongoing catalyst that facilitates learning through research. Collaboration played an essential role in the development of the quality improvement scholarly project. The DNP project will require the collaborative efforts of the emergency department clinicians, skilled nursing facility leadership with nursing staff, and input from geriatric providers.

The synergy model outlined the need for advocacy, care practices, and systems thinking. Older patients were often frail, vulnerable, and at higher risk for poor outcomes during an in-patient stay and after being discharged. Advocacy for the elderly patient population was one of the foundational concepts for the DNP project. Execution of the anticipated plan involves 3 separate divisions of care for the older patient. Yet, those divisions also reflected a systemwide directive to improve communication, quality of care, and patient outcome following discharge.

CHAPTER 3: IMPLEMENTATION

The DNP student created an evidence-based questionnaire using a Likert scale format (Appendix A). The survey was circulated to a convenience sample comprised of 10 RN and 10 ED physician staff members of CMC Main Emergency Department over the course of two weeks. Based on the results of the questionnaire feedback, the DNP student translated the results into a one-page communication hand-off tool (Appendix B). An expert emergency department physician, a geriatrician with an internal medicine background, and emergency medicine nurses reviewed the hand-off tool for content validity and reliability. The project leader also collaborated with the long-term nursing director of Atrium Health for the purpose of establishing communication and initial consent from the Brian Center SNF nursing and administrative leadership.

3.1: Setting and Population of CMC Main Emergency Department

On October 2, 2018, the project leader met the nurse manager of the Atrium Health Main Emergency Department to discuss the best approach for nursing staff involvement and to designate a secured place to maintain confidentiality of the collected hand-off tools. An administration support and nursing staff roster was provided to the project leader. The ED medical director, attending physicians, residents, Physician Assistants (PAs), and Nurse Aides were excluded from the implementation of the handoff document. The ED nurse manager and the project leader agreed upon two instruction methods for staff awareness. They were as follows:

The project leader would meet with the nurses twice daily for one week at 0745 am and 0745 pm during change of shift huddles to introduce the project, demonstrate the

correct completion of the hand-off tool, and provide instructions for collection for data analysis.

Since the nursing clinical staff of the Atrium Health Main ED is approximately 105 bedside nurses, the second means of disseminating the instructions was via secured email with a confirmed read receipt. The project leader spoke with the ED administrative coordinator who explained how to capture the entire nursing staff through this electronic process. A PowerPoint slide was created which included a copy of the communication hand-off tool and attached step by step instructions for collection, duplication, and storage of the completed hand-off tools received from the Brian Center SNF staff (Figure 1).

The education content included a discussion of the steps involved in the process once the patient arrives in the Atrium Health Main ED:

- (1) At the bottom of the completed hand-off tools, the triage RN circled “Yes” or “No” to the questions after verifying the attached MAR, Face-Sheet, and Goals of Care document (Goldenrod and/or MOST form).
- (2) Once the triage RN answered the questions, only the hand-off tool was copied and given to the charge RN. The charge RN placed the copied document inside an envelope labeled “Brian Center Hand-Off Tools” which was secured in a locked cabinet inside the charge RN office.
- (3) The office was only accessible with knowledge of the combination sequence of the door lock. Only the charge RNs had the security access code.

The project leader had access to these documents for routine monitoring and feedback and/or education to ensure accuracy of the hand-off tool and additional supporting documents.

The original hand-off tool was returned to the temporary ED chart to resume triaging and processing for delivery of care. Data included on the transfer sheet served as a reference to formulate initial diagnostic screenings and care plan.

1. Check for Completion
2. Circle Yes or No if MAR attached
3. Circle Yes or No if Face sheet attached
4. Circle Yes or No if Advanced Directives Attached
5. Copy Sheet and give to Charge RN
6. Charge RN place in folder in Envelope labeled "Brian Center Hand-off Tool: DNP Project"
7. Please return Advanced Directive documents if patients return to SNF
8. Call Melissa Williams, Geriatric NP, for any questions: 704-351-4004

Resident Name: _____

Reason for Transfer: (2-3 sentences):

Falls: Witnessed or Unwitnessed **LOC: Y / N**

Code Status: Full Modified DNR/DNI Attached Golden Rod/MOST

Baseline Cognition/Behavior: _____

Functionality: ADLs (Geriatric Need): _____

Transferring SNF Staff/Facility Contact w Direct Phone Number:

Family Member/Responsible Party Name and Phone Number:

*****Also Attach MAR, Face Sheet, Golden Rod/MOST *****

Medication List Attached?	Yes / No
Face Sheet Attached?	Yes / No
Advanced Directives Attached?	Yes / No

Figure 1. Brian Center SNF Communication Hand-Off Tool. E-mailed instructions to the CMC ED nursing staff

3.2: Setting and Population of Brian Center SNF

The Brian Center Skilled Nursing Facility is in East Charlotte on Shamrock Drive. The facility employs all disciplines to deliver short-term and interval rehabilitation in physical, occupational, speech, and wound care therapies. Additionally, the Brian Center SNF serves as a long-term residence for men and women in need of a higher level of clinical care and management of complex comorbidities that cannot be managed in a traditional home. The Brian Center has a total capacity of 100 rehab and

long-term beds, but the average census during the DNP Implementation phase was 63 occupants.

There were 20 licensed nursing staff comprised of 16 LPNs and four Baccalaureate prepared RNs. Two of the RNs served in leadership positions as the director and assistant director of the facility. One registered nurse functioned as a resident care manager director. Only one RN worked at bedside. Fourteen nurses participated in an education intervention to introduce the communication hand-off tool. A pre- and posttest was developed by the DNP student to measure the effectiveness of this education intervention and subsequent implementation of the hand-off tool between November 30, 2019 and January 19, 2019. Nursing leadership was not tested, and one LPN on the roster was designated as a float personnel, but she rarely worked at the Brian Center. The other LPN was unavailable due to family medical leave (FMLA) (Table 1).

Table 1

Brian Center Skilled Nursing Facility Nursing and Support Staff

Facility Position	Total Number	Training Participation
Nursing Admin	2	0
FT Bedside RNs	4	1
FT Bedside LPNs	16	12
Certified Nurse Aides	26	0
Medication Aides	2	0

Note: Certified nurse aides and medication aides are not involved with the patient transfer process

Table 1

3.3: Pre-Implementation

The project leader scheduled a meeting with the Director of Nursing of the Brian Center Skilled Nursing Facility. The purpose and objective of this discussion was for the project leader to obtain consent for the following:

- (1) Promote awareness and seek “buy-in” for compliance of nursing staff
- (2) Begin a series of 30-minute in-services focused on the correct completion of the tool over the course of two weeks. The project leader received a current staff roster to confirm attendance.
- (3) A six-question pre-test, education, and post-test was administered by the project leader to all staff members completing the in-service (Appendices C and D). A score of 90% was the benchmark for successful training.

The Director of Nursing of the Brian Center SNF displayed enthusiasm, and overall support for the project during the initial pre-implementation. The project leader then met with the leadership team and gave an overview of the project and obtained the access code to enter the facility as needed.

3.4: Pre-Testing, Education, and Post-Testing

The project leader gave a brief overview of the DNP project and verbal description of the hand-off tool prior to distributing and proctoring the pretest. Upon completion of the initial education screening, a copy of the handoff tool was given to each of the nurses. A discussion of each line item of the hand-off tool was completed which also included a summary of the pre-implementation survey and evidence-based support from the literature review. The education also included laminated samples of the Medical Orders Scope of Treatment form (MOST) and the DO NOT RESUSCITATE

ORDER which is commonly referred to as the “Goldenrod.” The visual display of these documents helped to clarify and distinguish these directives from a Living Will. The nurses were given the opportunity to ask questions or make comments regarding the layout of the hand-off tool as well as compare the DNP project proposal to their current process for transferring patients to Atrium Health Main ED. Below is a summary of the implementation phase:

- (1) The pilot began November 30th following completion of education of members of the SNF and ED. Utilization of the tool continued through January 29, 2019
- (2) The project leader collected the completed hand-off tools from the Atrium Health ED charge RN on January 30th, 2019 for review and evaluation
- (3) The Satisfaction Survey (Appendix E) was hand-delivered to the nursing staff of the Brian Center SNF for completion on four separate days and various shifts during the week of January 20th, 2019. The last satisfaction survey was collected on January 25th, 2019.

3.5: Ethical Considerations

The DNP project was sanctioned by the CHS/Atrium Health IRB with a subsequent approval from the IRB and Research Department of the University of North Carolina at Charlotte. The implementation of the written communication hand-off tool posed no direct risk of harm to the residents of the Brian Center Skilled Nursing Facility and was therefore classified as a quality improvement endeavor. The decision was defined by regulations 45 (CFR 46.102 (d) and 21 (CFR 56.102 (c) (e) (1).

CHAPTER 4: PROJECT FINDINGS AND RESULTS

The project leader was scheduled to begin the first training session with the Brian Center third shift staff at six am. The average number of residents per day for the Brian Center staff was 61.3 with an average of one hour and 30 minutes of licensed nursing staff per resident per day according to Nursing Home Compare guidelines (Medicare, Brian Center Staffing, 2018). These statistics are in contrast to the North Carolina average of one hour and 30 minutes and a national average of one hour and 33 minutes per day spent on patient care each day (Medicare, Brian Center).

An Atrium Health outcomes specialist accessed the *HealthAnalytics* dashboard for the Brian Center SNF. This database displayed patient acute care services (PACS) statistics from January 2017 through September 2018. There was a total of \$116,056.88 paid out to emergency department claims at an average of \$10,550.63 per patient. When the residents were hospitalized, PACS claims equaled \$429,220.14 or \$15,897.04 per Brian Center resident encounter (Z. Lutwick, personal communication, January 30, 2019).

4.1: Quantitative Statistical Analysis

At the end of the pilot phase, the project leader used descriptive statistics to measure the effectiveness of the education given to the Brian Center SNF nurses and their understanding of the required elements of the newly created hand-off communication tool. A biostatistician for Atrium Health Senior Care suggested the initial data collection of the pre/posttest format with a subsequent measure of satisfaction based on the responses of a satisfaction survey during the post-implementation. Once the data information was collected, the project leader also met with a biostatistician from the

UNCC Project Mosaic Research program. He guided the project leader with data entry, formatting, and translating results into an Excel spreadsheet.

A paired t test was applied to the pre and post test scores. A 2-tailed significance level was calculated using SPSS. A p-value of <0.05 was established within a 95% confidence interval. The average score on the pretest was 73% compared to the mean average score of 97% on the posttest. The p-value was 0.000 was less than alpha and indicated a true significance of the education needed to accurately complete the communication hand-off tool prior to transfer. Descriptive analysis was then obtained to measure effectiveness of the project training and awareness provided to the ED staff (Table 2).

Table 2

Emergency Department Administrative and Nursing Staff at CMC Main

ED Position	Total Number	Received Project Instructions
ED Administration	7	4
Clinical Nurse Supvr	8	6
Full-Time RNs	105	54
Part-Time/PRN RNs	12	2
Total	132	66

Note: ED physicians, residents, and PAs reviewed the hand-off tool for care only

Table 2

Seven of the staff members were categorized as ED administration, and four of them reviewed the PowerPoint training regarding the education tools and collection process. There were eight clinical nurse supervisors who responded, and of the 105 full-time Registered Nurses only 54 of these nurses responded

to the secured email which included the required teaching and implementation process instructions.

A second descriptive analysis was completed to measure the level of satisfaction expressed by the Brian Center Skilled Nursing staff. The satisfaction survey contained seven questions. Six of the questions solicited a “yes” or “no” response about the overall likelihood that the nurse would utilize the hand-off tool in the future. Question number seven required a free text response for recommendations for improvement or general comments about the hand-off tool. The highest score for the survey was six where each “yes” response equaled one point. “No” responses were calculated at zero.

Ten nurses participated in the post survey screening. A total of 60 questions were reviewed from this sample. There were 58 “yes” answers, and two “no” replies, but the no replies were to the same question that asked whether the nurse had completed the hand-off tool. 100% of the nurses surveyed answered “yes” to being satisfied with the hand-off tool as well as their intent to complete the document with all future transfers to the ED at CMC.

CHAPTER 5: SIGNIFICANCE AND IMPLICATIONS

Most of the nurses agreed that the written hand-off tool was easy to complete and require less time than communication forms used in the past. One form contained four pages that contained the option to check out boxes on pre-populated fields. The requirement to attach the patient's medical record, demographic sheet, and advanced directive papers were consistent with their current process. Nurses who work on the night shift had been accustomed to additionally including recent lab results and physician progress notes.

Several nurses verbalized their appreciation for the evidence-based intervention education following the pretests because they felt that the discussion provided clarification on the mandatory entries on the hand-off tool. The nurses desired a better means of verbal communication with the emergency department staff, and 100% of the participants endorsed the idea of wireless phones to carry each shift.

5.1: Limitations of Study

Robust literature supported the need for hand-off tools to include the transferring nurse's name and contact phone number. Difficulty in communicating with the transferring nurse was identified as a common problem in most Skilled Nursing Facilities (Tsai, Tsai, & Huang, 2016). The project leader requested to meet with the SNF administrator and director of nursing in April 2019 to discuss the feasibility of purchasing two or three mobile phones for the nursing staff. Kear (2016) suggested that the ideal hand-off process be face-to-face when possible, but the transfer process should incorporate two-way verbal and written communication to ensure accuracy.

Maintaining consistent communication with the director of nursing (DON) was impacted as the facility experienced a conversion under new upper management. This process was required countless hours of commitment from nursing and administrative leadership during the month of January and mid-February. Despite the obvious challenges involved with changing facility ownership, there were 14 documented transfers with completed hand-off tools during the pilot period. The DON's report coincided with the "yes" responses analyzed from the satisfaction survey.

The project leader also attempted obtain data that quantified transfers from the SNF to the ED at CMC Main ED. During a series of follow-up phone calls and emails, an outcomes specialist and a health services researcher within the Information and Analytics Services department was able to provide assistance. Through their combined diligence to support the project, the project leader was granted access to the Atrium Health SNF readmission dashboard and financial data from patient acute care services (PACS). The statistics provided a comprehensive overview of skilled nursing facilities in Charlotte and the surrounding counties, but there was not a specific category that measured the Brian Center ED transfers and encounters for admission.

An additional constraint of the written communication handoff tool is the high risk of misinterpretation based on poor handwriting. The current process allows the nurses to complete an SBAR online that is printed and attached with supporting documents. If the project handoff tool was adopted for future use, it would need to be translated into an electronic format.

5.2: Sustainability of the Project

Since the beginning of this project, the Brian Center SNF has changed their corporate ownership. The facility has been renamed Accordius Health at Midwood, LLC., but there were no changes in the clinical staff. The communication transfer process remains a challenge. Ongoing communication and collaboration with the director of nursing will be a critical aspect of ensuring longevity of completing future hand-off tools with each transfer to CMC Main ED. The immediate need for the Brian Center Skilled Nursing Facility involves a potential, unexpected cost in terms of purchasing mobile devices dedicated to facilitating open, reciprocal communication throughout the transfer process. Furthermore, solidifying change will involve a formal substitution of the hand-off tool with the current SBAR transfer form. An official adoption of the DNP hand-off tool would allow for a subsequent translation into an online, printable form.

5.3: Significance of Implications

The implications for additional study in this area is certainly warranted, and there is a need for innovative methods to reduce the financial and clinical burden of potentially avoidable transfers and admissions to the hospital for long-term residents. In order to make steps towards further study in this area, I had the privilege of talking to Dr. Biese who is an associate professor of emergency medicine and clinical associate professor of geriatric medicine at the University of North Carolina School of Medicine in Chapel Hill. As he is considered an expert in his field, Dr. Biese stated that “according to the 2011 findings from AHRQ, one emergency department visit equaled approximately \$1000 and

\$12,000 if the patient was admitted to the hospital. He went on to estimate that the current cost for a hospital admission has increased to \$22,000” (K. Biese, personal communication, January 14, 2019).

He has been well published on his research in the clinical process improvement for geriatric patients within the ED environment. According to Dr. Biese, he estimates that 30%-50% SNF to ED transfers are potentially preventable. In response to his concerns, he partnered with other physicians with an interprofessional team to create the “Call 9” telemedicine service. This organization establishes access for the SNF nurse to call or connect through a virtual care modem. The group is trained to provide guidance on when to transfer a resident to the ED (“Call9”, 2018). This telemedicine service decreases unplanned hospital visits and ambulance utilization by over 50% for patients in skilled nursing facilities by bringing the Emergency Department to the bedside.

5.4: Summary

The transfer process from the SNF to the ED has been a mutual task among long-term care facilities, and more research is required to support the usefulness of improved hand-off tools or methods. During this project, external barriers to communication on multiple levels threatened the purpose and sustainability of the handoff tool. Nevertheless, the project could be applied to other skilled nursing facilities as well as Assisted Living Facilities (ALFs) once these barriers are addressed and controlled. Relevant information is needed once the resident arrives to the ED. Hand-off tools that are concise, thorough, but easily assessable and simple to complete increase nurse satisfaction and minimize patient risks.

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Appendix A
SNF to ED Questionnaire |

Listed below are recommended questions to include on a communication tool between the Emergency Department and Skilled Nursing Facilities based on a literature review. Please circle to rank the statements in order of significance using the following scale:

0-not important, 1-somewhat important, 2-important, 3-essential

1. Reason for Transfer:	0	1	2	3
2. Baseline Cognition	0	1	2	3
3. Vital Signs at time of transfer	0	1	2	3
4. Advanced Directives/MOST	0	1	2	3
5. Medication Record	0	1	2	3
6. Function w ADLs	0	1	2	3
7. Immunizations (injury)	0	1	2	3
8. Allergies	0	1	2	3
9. SNF Staff name, phone	0	1	2	3
10. Primary Care Provider	0	1	2	3
11. Past Medical History	0	1	2	3
12. Recent Lab Results	0	1	2	3
13. Family Member POC/number	0	1	2	3

******Please add additional entries if not listed on the space below or on the back of this form***

Appendix B

Communication Hand-Off Tool: SNF to ED

Brian Center SNF, 2727 Shamrock Drive, Charlotte NC 28205**704-563-0886****Resident Name:** _____**Reason for Transfer: (2-3 sentences):** _____

_____**Falls: Witnessed Unwitnessed LOC: Y / N****Code Status: Full Modified DNR/DNI Attached Golden Rod/MOST****Baseline Cognition/Behavior:** _____**Functionality: ADLs (Geriatric Need):** _____
_____**Transferring SNF Staff/Facility Contact w Direct Phone Number:**
_____**Family Member/Responsible Party Name and Phone Number:**
_____*******Also Attach MAR, Face Sheet, Golden Rod/MOST *********Medication List Attached? Yes / No****Face Sheet Attached? Yes / No****Advanced Directives Attached? Yes / No**

Appendix C
Communication Hand-Off Tool Pre-Test

- 1. The phone number of the transferring staff member should be included on the hand-off tool.**
True / False
- 2. It is more important to document if a fall was witnessed or unwitnessed than whether patient had a loss of consciousness**
True / False
- 3. The reason for transfer (chief complaint) can be omitted since the EMS Report has this information.**
True / False
- 4. Which sentence best describes baseline cognition and behavior?**
 - A. Calm, Talkative**
 - B. Agitated, uncooperative, oriented X 4**
 - C. Oriented to self only, follows commands, dementia, demeanor unchanged**
- 5. Which sentence best describes functionality?**
 - A. Patient is independent with eating and toileting**
 - B. Patient requires a rollator and wheelchair for assistance**
 - C. Patient needs assistance with toileting and bathing**
 - D. Patient independent with PO intake, unsteady gait but, needs Assistance with bathing, dressing, and toileting**
- 6. What document should always accompany residents transferring to the ED?**
 - A. Golden Rod (if completed)**
 - B. MOST Form (if completed)**
 - C. Neither A or B, completed, just annotate hand-off sheet**
 - D. Either A and B with annotation on the form**

Appendix D
Communication Hand-Off Tool Post-Test

1. Which sentence best describes functionality?

- A. Patient is independent with eating and toileting**
- B. Patient requires a rollator and wheelchair for assistance**
- C. Patient needs assistance with toileting and bathing**
- D. Patient independent with PO intake, unsteady gait but, needs Assistance with bathing, dressing, and toileting**

2. It is more important to document if a fall was witnessed or unwitnessed than whether patient had a loss of consciousness

True / False

3. Which sentence best describes baseline cognition and behavior?

- A. Calm, Talkative**
- B. Agitated, uncooperative, oriented X 4**
- C. Oriented to self only, follows commands, dementia, demeanor unchanged**

4. What document should always accompany residents transferring to the ED?

- A. Golden Rod (if completed)**
- B. MOST Form (if completed)**
- C. Neither A or B, completed, just annotate hand-off sheet**
- D. Either A and B with annotation on the form**

5. The reason for transfer (chief complaint) can be omitted since the EMS Report has this information.

True / False

6. The phone number of the transferring staff member should be included on the hand-off tool.

True / False

Appendix E
Communication Hand-Off Tool Post Satisfaction Survey

1. I have completed this Hand-Off Tool since receiving the education

Yes / No

2. I plan to use this Hand-Off Tool when I transfer my patient to the CMC Main ED

Yes / No

3. The hand-off tool is easy to complete and takes less than 10 minutes

Yes / No

4. The required attachments are easily assessible and simple to include

Yes / No

5. The hand-off tool includes pertinent information that improves communication when sending SNF residents to the ED

Yes / No

6. The hand-off tool should minimize multiple phone calls to the facility.

Yes / No

6. I am satisfied with the communication hand-off tool overall

Yes / No

7. What additional information do you think is needed to improve this hand-off tool? _____

ESTIMATED RESOURCES, COSTS, AND JUSTIFICATION

The University of North Carolina-Charlotte graduate school awarded the DNP student a \$3,000.00 grant to assist with supplies, statistical analysis cost, and miscellaneous items need for project implementation. The project leader's salary from Atrium Health supplemented the estimated price for the hours spent in educating the staff members of each facility, fuel with associated transportation maintenance, and photocopies of the communication hand-off tool and satisfaction surveys.