

Nonpharmacological Interventions for Behavior Management in Dementia

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Author Note

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Abstract

Since 2011, the Centers for Medicare and Medicaid (CMS) have been monitoring antipsychotic usage in residents with dementia in nursing homes. Increased monitoring has led to a decrease in use of these medications in long-term care settings. At the project site, a skilled nursing facility in Western North Carolina, residents with dementia are ordered to have all antipsychotic medications discontinued on admission. Unfortunately, medications typically are not useful in treating disruptive behaviors in residents with dementia. Nonpharmacological interventions (NPIs) are considered best practice; however, when nonpharmacological interventions are appropriately utilized at the facility, there was no standard for documenting their usage. A newly created standardized nonpharmacological checklist was implemented in order to guide staff members in utilizing nonpharmacological interventions prior to the administration of PRN (as needed) behavior medications. The primary objective of the project was to increase compliance with the implementation of nonpharmacological interventions in the management of disruptive behaviors in residents with dementia. The project implementation resulted in a 70% staff compliance rate in utilizing the standardized checklist. Staff reported a much better understanding of how to utilize NPIs in their interactions with residents with dementia. While the outcome of the project was positive, many barriers and limitations were encountered throughout the process.

Keywords: Dementia, Resident, Long-term care facility, Nonpharmacological interventions, Disruptive behaviors, Antipsychotic medications, PRN behavior medications, Evidence-based practice, Neuman Systems Model, Nonpharmacological checklist

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Nonpharmacological Interventions for Behavior Management in Dementia

Chapter One: Introduction

In 2011, the Office of the Inspector General (OIG) of the Department of Health and Human Services released a report that outlined the dangers of the use of antipsychotic medications in older adults with dementia (Centers for Medicare & Medicaid Services, 2014). As a result of this report, the Centers for Medicare & Medicaid Services (CMS) formed “The National Partnership” with the nation’s Long-Term Care (LTC) Facilities “to improve dementia care in Nursing Homes” (CMS, 2014, p. 2). The outcome of this partnership led to a focus on reducing the number of prescriptions written for antipsychotic medications for nursing home residents in order to reduce agitation and disruptive behaviors that are often associated with dementia (CMS, 2014). Best practice recommendations for residents with dementia start with non-pharmacological interventions (NPIs) to treat disruptive behaviors while attempting to determine the cause of the distress (Alzheimer’s Association, 2015; Bomasang-Layno & Amin, 2016; Cohen-Mansfield, 2013; Desai, Schwartz, & Grossberg, 2012; Zuidema et al., 2015). While a plethora of evidence exists to support the use of NPIs as first-line treatment for behavior management in residents with dementia, more rigorous studies are needed, and the existence of longitudinal data is minimal (Lavoie-Vaughan, 2014).

The project setting was a 120-bed corporately owned LTC facility in Western North Carolina, and the facility had a large proportion of residents with some level of dementia diagnosis. All residents with dementia who were admitted to the facility from the hospital with an antipsychotic (AP) prescription, are immediately taken off APs and placed on a PRN medication for agitation because of the CMS campaign to end inappropriate AP use in older adults (Molloy & Butler, 2012). Unfortunately, the PRN medications were typically used “off-

label” (such as phenobarbital), usually on the Beers List (ex: Benzodiazepines), and have a significant side effect profile. These types of psychoactive medications can cause excessive sedation, increased memory loss, increased risk of medication interactions, and they increase overall costs to the healthcare system (Terrery & Nicoteri, 2016).

Problem Statement

Disruptive behaviors frequently cause frustration for staff members, and NPIs are often seen as too time consuming when a resident is highly agitated (Janzen, Zecevic, Kloseck, & Orange, 2013). During initial conversations about dementia behaviors with facility staff, it was clear that most staff members are aware that nonpharmacological interventions are considered first-line interventions. However, no current standards or guidelines existed, within the facility regarding NPI usage in residents with dementia who were prone to disruptive behavior(s).

Recent concerns raised by residents’ family members about their relatives’ level of sedation has drawn attention to the reality that no method currently exists to determine what interventions were attempted by the interdisciplinary team prior to the administration of sedating PRN behavior medications. Use of music therapy was available at the project site; additionally, by incorporating this intervention on the checklist, it was meant to formalize music therapy as an NPI option for staff members to offer to residents. Personal observations at the site indicated mood improvements during pet visits with residents at the facility, and pet visits were encouraged within the project site.

Justification of Project

Within so many aspects of clinical healthcare practice, bridging the gap from existing practices to adoption of evidence-based practices creates a challenge. Anecdotal evidence at the project site suggested that while most of the staff were aware that NPIs should be used as initial

interventions for the management of disruptive behavior in residents with dementia, there was no documented evidence that these interventions were consistently performed prior to administration of PRN behavior medications. Unnecessarily medicating older adults is dangerous because psychoactive medications has been shown to increase the risk for morbidity and mortality within this population (Terrery & Nicoteri, 2016).

Disruptive behavior in residents with dementia is typically caused by/related to residents' basic needs, their pain, safety, or situations relating to social isolation (Mansfield, Dakheel-Ali, Marx, Thein, & Regier, 2015). Therefore, attempting to address these issues with the resident prior to any PRN medication administrations is imperative. While nurses administer the medications, any member of the interdisciplinary team can implement NPIs to address residents' agitation and disruptive behaviors. Clinically trained healthcare professionals exhibit a variety of strengths in addressing these behaviors: nursing assistants are typically most effective with assessing residents' basic needs, nurses are typically most effective with assessing residents' pain and their safety needs, and therapy staff are generally most effective with assessing issues with functional status and social isolation (Mansfield et al., 2015). Accordingly, an NPI related initiative is best taken if an interdisciplinary collaborative team approach is utilized.

Family member feedback about sedation, and the lack of documentation about which NPIs were attempted prior to PRN medication administration, were obvious and significant practice needs at the project facility. The project required that the interdisciplinary team at the LTC facility address a resident's basic needs (based on Maslow's Hierarchy of Needs) and attempt two additional nonpharmacological interventions prior to administering any PRN behavior medication to residents with dementia. LTC staff members were encouraged to attempt more than one nonpharmacological intervention, because the type of NPI that a resident may

respond to will vary depending the resident's specific dementia diagnosis (De Oliverira et al., 2015). The new standard of practice included the implementation of a standardized nonpharmacological checklist to be completed prior to all PRN behavior medication administrations in residents with dementia.

Theoretical Framework

Betty Neuman created the Neuman Systems Model, during the 1970's, (several notable updates to the Neuman Systems Model have subsequently occurred over the years) with a focus on interdisciplinary care (Butts & Rich, 2015). The model is particularly useful as a framework to guide this quality improvement (QI) project because of its systems-level focus and emphasis on the resident's experience of the environment. "The Neuman systems model also supports the use of clinical tools that are practical and guide holistic assessment and intervention" (Butts & Rich, 2015, p. 428-429). The checklist created for this project fit this definition of a supported clinical tool. The project will be described further within the framework of the Neuman Systems Model as it relates to the model's five variables of a person: physiological, psychological, sociocultural, developmental and spiritual as well as including the concept of stressors (Appendix A).

Physiological. Physiological needs are the most basic of human needs, such as breathing, hunger, thirst, sleep, need for excretion, and physical comfort (Maslow, 1987). These needs must be assessed, first and foremost, any time a resident exhibits agitation. However, unmet needs are common in older adults with dementia, because they cannot always express their needs clearly due to cognitive decline (Alzheimer's Association, 2013; Cohen-Mansfield, 2013; Mansfield, Dakheel-Ali, Marx, Thein, & Regier, 2015). Another characteristic of the human physiological experience is pain, and, according to an article by Ahn & Horgas (2013),

untreated pain is often the cause of disruptive behaviors in older adults with dementia. The standardized checklist to be implemented at the project facility will require staff to document that basic needs have been assessed and that a pain assessment has been completed before any resident with dementia is given a PRN behavior medication.

Psychological. Psychological variables are more complicated than physiological needs, but they are every bit as important to personal health and happiness. Safety is one important aspect of the psychological experience for individuals living in LTC facilities. Verifying that a resident is positioned safely and can easily reach items that are needed, is imperative in preventing falls and agitation. Furthermore, the use of any NPIs support psychological well-being by providing residents with mental stimulation (De Oliverira et al., 2015). Residents with dementia often feel trapped by their cognitive condition, and staff can help prevent disruptive behaviors by recognizing triggers and offering the residents choices: i.e., when to go to bed, when to bathe, or what to eat at mealtime (Harrison & Frampton, 2017).

Sociocultural. One of the most difficult aspects of caring for residents with dementia is the overwhelming feeling of their “being forgotten”. Residents with dementia are often older, potentially widowed, and as their cognitive state declines, they tend to receive fewer visits from family members (Cohen et al., 2014). Family members often spend their entire visit focused on residents’ basic needs, often forgetting about socialization and participating in stimulating activities with the resident (Cohen et al., 2014). However, socialization is such an important aspect of the human condition, and group activities within the LTC facility can often fill the void experienced by residents who do not get enough socialization from family visits (Johnston & Narayanasamy, 2016). Consequently, use of NPIs for disruptive behavior(s), are a direct way for staff to address residents’ sociocultural needs.

Developmental and Spiritual. As individuals progress toward the end of their lives, developmental and spiritual concerns become more important than ever before. Individuals with dementia often are not aware that they are approaching the end of their lives. However, these individuals typically respond positively to spiritual group activities. NPIs that focus on spirituality should be tailored to the resident population, as much as possible, and having members of the clergy visit residents, according to their faith/beliefs, can be highly effective in reducing residents' distress (Alzheimer's Association, 2009).

Stressors. Stressors, according to Neuman, are anything that upsets a system's stability, with a system existing as anything from an individual to an entire community (Butts & Rich, 2015). In older adults with dementia, stressors can better be described as "triggers". These triggers can present as anything from hunger, pain, soiled clothing, boredom or frustration, to strained interactions with other residents and general anger relating to LTC placement. Understanding what is triggering the resident's behavior can guide staff in ways to accurately address the issue(s), and can reduce the likelihood that the resident will be given a sedating medication (Randall & Clissett, 2016). During educational huddles, staff members at the project facility were provided with information regarding how best to recognize triggers for agitation in residents with cognitive impairment.

Assumptions

The project assumptions included that:

- Requiring checklist completion will result in an increase in NPI implementation and improve the quality of care provided to residents with dementia, although the quality of care will not specifically be measured in this project

- Checklist style documentation will streamline the documentation process and ease the typical strain caused by additional documentation
- Involving the interdisciplinary team in the process will improve the rate of NPIs implemented with residents
- Staff motivation to complete the checklist will be reasonable once education is provided regarding best practices
- Staff willingness to participate in the weekly PDSA huddle process for improvement will be moderate to high
- Implementing the PDSA model will allow for weekly staff feedback, checklist modification and improved compliance with checklist utilization
- If the checklist is not completed prior to a PRN medication administration, then one will assume that NPIs were not attempted by staff members
- The checklist will be utilized as a communication tool between staff members to discuss resident behaviors and effective NPIs

Project Questions

Primary clinical question: will implementation of a standardized nonpharmacological pre-medication checklist improve the implementation of interdisciplinary nonpharmacological interventions for residents with dementia at a LTC facility? Secondary question: will implementing the PDSA model with weekly interdisciplinary staff huddles, improve staff compliance in utilizing the checklist?

Definition of Terms

- Nonpharmacological Interventions (NPI) – any intervention(s) (such as music therapy, pet therapy, aromatherapy, etc.) that are attempted in the place of medication (Cohen-Mansfield, Thein, Marx, Dakheel-Ali, & Freedman, 2012)
- Long-term Care (LTC) – care provided to older adults or those who are chronically ill in residential style facilities, such as skilled nursing facilities and assisted living facilities (CMS, 2014)
- Antipsychotic Medications (AP) – antipsychotic medications are those traditionally prescribed to treat schizophrenia (Bomasang-Layno & Amin, 2016)
- Interdisciplinary Team – includes nursing staff, certified nursing assistants, physical therapists, occupational therapists, and therapist assistants (Mansfield, Dakheel-Ali, Marx, Thein, & Regier, 2015)
- Resident – term for resident living at a LTC facility (CMS, 2014)
- Dementia – umbrella term for multiple types of neurocognitive disorders including Alzheimer’s Disease, Vascular Dementia, Dementia with Lewy Bodies, Frontotemporal Dementia, as well as any unspecified dementia syndrome (Mayo Clinic, 2016)
- PRN – medical term that refers to something given or completed as needed (Merriam-Webster, 2017)
- Medication Administration Record (MAR) – a document (usually electronic) used to record what medications are administered in a given healthcare facility (CMS, 2014)
- Disruptive behaviors - term used to describe agitation, unwanted behaviors, acting out behaviors, and behavioral & psychological symptoms of dementia (BPSD) (De Oliverira et al., 2015)

- Sundowning – “the emergence or worsening of neuropsychiatric symptoms (NPS) in the late afternoon or early evening” (Canevelli et al., 2016, p. 1)

Summary

The CMS campaign to end the inappropriate prescribing of AP medications in older adults living in LTC facilities, has begun to change the way providers manage residents with dementia. Dementia continues to be one of the most expensive diseases, overall, for the healthcare system with significantly higher expenditures existing for residents and families who have limited access to insurance resources (Delavande, Hurd, Martorell, & Langa, 2013). Disruptive behaviors are common in residents with dementia; these behaviors can, and often do lead to frustration within LTC staff members. While medicating residents for disruptive behaviors may be easier, and less time consuming than utilizing nonpharmacological methods; NPIs are considered best practice in the treatment of the behavioral & psychological symptoms of dementia (BPSD) (Alzheimer’s Association, 2015). NPIs reduce costs of care, improve staff-resident relationships, and improve residents’ quality of life and satisfaction with their care (Lavoie-Vaughan, 2014).

The aim of this project was to implement a standardized practice requiring that the interdisciplinary team attempt at least two NPIs prior to any PRN behavioral medications administration to residents with dementia. The nonpharmacological checklist served as a guide to change practice and promote compliance with utilization of nonpharmacological interventions prior to the administration of PRN behavior medications.

Chapter Two: Review of Literature

Introduction

This chapter will discuss literature findings relating to the use of nonpharmacological interventions in the care of residents with dementia. The evidence for NPIs is diverse; however, some limitations exist. Use of NPIs are considered best practice according to guidelines from the government, national dementia organizations, and multiple well-respected peer reviewed journals. Some nonpharmacological interventions have more evidence to support their use than others. Additionally, there exists strong evidence to support NPIs as first-line treatments for disruptive behaviors associated with dementia as best practice within any LTC facility.

The Search Strategy

A search of key terms was completed, using PubMed, that was limited to the utilization of articles published within the last five years. Key terms included: “dementia,” “nonpharmacological”, and “agitation” (Appendix B). A total of 80 articles were identified, during the search, (subsequently narrowing the number, ultimately, to 32) that were relevant to the specific focus of the project. Articles selected for review included: the utilization of nonpharmacological interventions, residents in LTC settings, educating or training staff to provide better care, and articles that detailed specific useful nonpharmacological interventions. Most non-domestic articles were excluded, unless the interventions examined were clearly ones that could easily be implemented within the United States healthcare system. A Google search was also conducted in order to obtain information from government agencies and national dementia organizations. Additionally, articles were obtained from a content expert who recently created a clinical practice guideline related to the use of nonpharmacological interventions in LTC facilities (Appendix C). Finally, an updated literature review was completed during the

implementation phase of the project to evaluate any new evidence on the research topic; which yielded an additional 12 articles.

The Case Against Sedating Medications

Multiple government agencies and entities have completed research regarding the treatment of agitation in residents with dementia since the Office of the Inspector General (OIG) report was released in 2011. Antipsychotic use is highly discouraged because of the dangerous side effect profiles, and the reality that their use can lead to an increase risk for mortality in older adults (CMS, 2014; Huybrechts et al., 2012; Lapeyre-Mestre, 2016). Older adults are often prescribed antipsychotics, while they are in the hospital, in order to manage symptoms of delirium, and these medications are often continued when residents are transferred to LTC facilities (United States Government Accountability Office, 2015). Statistics of AP use in older adults has shown increased risks for morbidity and mortality (Huybrechts et al., 2012). APs have been shown to increase risk for cardiac complications, strokes, falls, and hip fractures in older adult LTC residents (Huybrechts et al., 2012). All psychoactive medications have an increased risk of mortality, within the first month of starting the prescription, and, subsequently, they are recommended to be avoided in older adults whenever possible (Lapeyre-Mestre, 2016).

CMS now monitors antipsychotic use in LTC facilities, and issues citations for overuse, as well as reports quality data to the public; this explains why residents at the project site were more frequently taken off these medications upon admission (Bowblis, Lucas, & Brunt, 2015; Molloy & Butler, 2012). APs have their place in the management of disruptive behaviors in older adults with dementia, but only in the cases of severe agitation that has been resistant to all other NPIs and less dangerous medications (Tampi, Tampi, Balachandran, & Srinivasan, 2016). Unfortunately, while government oversight has been valuable in decreasing AP use in older

adults in LTC facilities, there has also been a negative side effect of this type of monitoring, “substitute prescribing”. Substitute prescribing is simply prescribing a medication that is not monitored by CMS to replace a medication that is being closely monitored by CMS (Bowblis et al., 2015; Iaboni et al., 2016). A significant known challenge with substitute prescribing is that the substituted medications are likely just as dangerous as prescribing APs, if not more dangerous; however, they are not currently subject to government scrutiny (Bowblis et al., 2015; Iaboni et al., 2016). In turn, this may give some providers an illusion of medication safety when prescribing these medications (Bowblis et al., 2015; Iaboni et al., 2016). However, new research into appropriate medication utilization in the treatment of disruptive behaviors has yielded promising results in the medication management of agitation (Porsteinsson & Antonsdottir, 2017).

Supporting Literature for NPIs

The Alzheimer’s Association firmly supports the use of NPIs as first-line interventions for disruptive behaviors (Alzheimer’s Association, 2009, 2013, 2015). Multiple strategies, developed for the care of older adults, promote the use of NPIs as interventions used to treat behavioral symptoms, and they emphasize avoidance of sedating medications (Lavoie-Vaughan, 2014; Zuidema et al., 2015). These recommendations outline effective NPIs, based on prior studies, and provide guidance to staff members at LTC facilities relating to exhausting NPI options prior to utilization of sedating medications. Furthermore, staff members’ reticence to adopt NPIs, as first-line options for disruptive behaviors, is often due to a lack of suitable education about the effectiveness of these interventions (Anderson, Bird, MacPherson, & Blair, 2016; Burgio et al, 2001; Chenoweth, 2015; Cohen-Mansfield, Thein, Marx, & Dakheel-Ali,

2012; Daly, Bay, Levy, & Carnahan, 2015; Edvardsson, Sandman, & Borell, 2014; Lavoie-Vaughan, 2014).

While randomized controlled trials about the use of nonpharmacological interventions are not proliferative, one such study was completed in 2012 with encouraging results. When residents receiving NPIs were compared with a control group, there were statistically significant reductions in disruptive behaviors (Cohen-Mansfield, Thein, Marx, Dakheel, & Freedman, 2012). It was also reassuring to note that, not only did the residents experience less agitation, they seemed to experience more positive responses to staff members, as well as experience more pleasant, and, overall, more positive interactions with other residents (Cohen-Mansfield et al., 2012). Encouraging staff members to utilize NPIs, within every case of disruptive behavior, regardless of their relationship with residents, promotes an increased quality of life and an overall positive increase in well-being for residents (Cohen-Mansfield et al., 2012). While numerous articles have been written about the effectiveness of NPIs, many of the articles have not been found to have generalizable results (Forlenza, Loureiro, Pais, & Stella, 2017).

The DICE approach is an existing method meant to address behavioral issues in individuals with dementia; however, while this method is useful in a variety of clinical settings with family and unpaid caregivers, it is not suited to the LTC environment (Kales, Gitlin, & Lyketsos, 2014). This method focuses on working with individual residents in clinical settings, and their family or informal caregivers, to target the underlying causes of behaviors and to create intervention plans for each resident's specific behavioral issues (Kales et al., 2014). The DICE approach is a community and clinical practice setting focused approach that is very time consuming, and it focuses on helping family caregivers understand residents' behavior and nonpharmacological interventions. Furthermore, this approach does not provide a concrete

method for documenting nonpharmacological interventions in a residential continuous care setting (Kales et al., 2014).

Basic Needs

Many times, disruptive behaviors, in residents with dementia, relate specifically to unsatisfied basic needs. Disruptive residents have an average of three unmet needs per resident (Mansfield, Dakheel-Ali, Marx, Thein, & Regier, 2015). These needs can include basic physiological needs as well as unmet needs relating to social contact. Therefore, assessing the resident for unmet needs is imperative to preventing the unnecessary use of sedating medications. Pain can also be a factor that causes residents to act out. Residents experiencing cognitive decline often cannot express themselves clearly enough to indicate that they are experiencing pain, so LTC staff must be able to recognize nonverbal indicators of pain (Ahn & Horgas, 2013). Another common cause of agitation is the need for sleep. Residents with dementia often suffer from a manifestation known as “sundowning,” that can lead to sleep deprivation (Canevelli, 2016). Sundowning is best treated with nonpharmacological interventions that improve the residents’ sleeping environment and sedatives should be avoided, because they tend to increase adverse behavioral issues (Canevelli, 2016). Interdisciplinary team involvement is important in addressing unmet needs, since various clinical disciplines tend to focus foremost on needs specific to their clinical specialty (Mansfield et al., 2015).

Nonpharmacological Interventions

Music Therapy. Music therapy is the most researched intervention that subsequently has the most prolific evidence to support its utilization. Music specific to a resident’s life experience or familiar music from their youth, has been shown to be the most effective form of music therapy (Arroyo-Anllo, Diaz, & Gil, 2013). A systematic review of nonpharmacological

interventions found that music therapy was the most effective NPI in decreasing behavioral symptoms; this is especially the case when the music was selected according to the resident's preference (Millan-Calenti et al., 2016).

Pet Therapy. Most studies regarding the use of pet therapy (or animal-assisted therapy) in adults with dementia indicate some decreases in resident's agitation; yet, definitive results are limited, and more research within this area is needed. Studies of pet therapy support its usefulness in improving resident moods, but use of pet therapy does not translate into efficacy in reducing severe disruptive behaviors (Cherniack & Cherniack, 2014). In a study with a single dementia resident, cognitive and behavioral symptoms were notably improved after receiving pet therapy for an extended length of time (Nordgren & Engstrom, 2012).

Aromatherapy. While there is literature that supports the use of aromatherapy, definitive evidence supporting this intervention is not strong at this time. Some evidence suggests that the use of soothing scents (such as lavender) can reduce the frequency of disruptive behaviors in older adults with dementia (Fung, Tsang, & Chung, 2012). More research is needed regarding the efficacy of aromatherapy as a useful behavioral intervention. However, given the relatively inexpensive cost of aromatherapy, as a method to treat agitation, aromatherapy should be considered an option, if it is available, in order to decrease use of APs and other sedating medications (Fung et al., 2012).

Other Nonpharmacological Interventions. There are several other types of NPIs that have some notable efficacy within the literature. Baby doll therapy has been shown to decrease agitation, especially in female residents with dementia, because the act of caring for the baby doll provides residents with a sense of usefulness and utility (Braden & Gaspar, 2015). Again, this is a relatively inexpensive intervention that can be utilized with very little effort from staff.

Including residents with dementia in physical activity programs has shown some efficacy in decreasing disruptive behaviors and improving resident's overall well-being (Christofolletti et al., 2011). Finally, therapeutic massage (or touch therapy) is another specific intervention described within the literature that has shown some efficacy in decreasing agitation in residents in the earlier stages of dementia; however, significantly more research within this area is needed in order to prove its definitive effectiveness (Kumarappah & Senderovich, 2016; Moyle, Murfield, O'Dwyer, & Van Wyk, 2012).

Person-Centered Care. All nonpharmacological interventions utilized in the place of sedating medications fall under the heading of person-centered care. Staff treatment of residents has been directly linked with resident behavior. Residents who perceive staff as empathetic to their needs are less likely to act out, and they are generally more likely to comply with staff requests (Anderson, Bird, MacPherson, & Blair, 2016). Improving communication with residents, by showing residents respect, and addressing their concerns, has been shown to improve behavior (De Vries, 2013). Residents with dementia often feel powerless, but giving them choices about their care, such as, deciding when they take a bath or when/what time they go to bed, has been shown to improve resident behaviors (Harrison & Frampton, 2017). Reminiscence therapy (or life story work) are person-centered interventions that have shown specific efficacy in reducing agitation in residents with dementia (Johnston & Narayanasamy, 2016).

Staff/Provider Education

Staff education regarding communication strategies with residents who have dementia has been shown to be efficacious in improving resident care (Burgio et al., 2001). In many cases, AP use continues simply because staff at LTC facilities don't receive enough education about use

of nonpharmacological interventions as best practice, and they are generally not kept current about the dangers of using sedating medications in older adults (Chenoweth, 2015). LTC staff report knowledge barriers regarding NPI utilization, and many report that the education that they do receive is “generic” and seems repetitive (Daly, Bay, Levy, & Carnahan, 2015). Use of psychological behavior modification techniques and more importantly, education of staff caring for residents with dementia have been shown to have the most enduring effects on resident behaviors (Porsteinsson & Antonsdottir, 2017).

Limitations in the Literature

More research is clearly needed regarding specific NPIs. Although the current evidence is not robust, NPIs are still recommended as first-line interventions for disruptive behaviors. Specifically, interventions such as reminiscence, pet therapy, aromatherapy, and therapeutic massage, need more studies regarding their efficacy in reducing agitation in residents with dementia. Additional research regarding the efficacy of medications to treat agitation is needed for cases when NPIs are not successful. The effectiveness of NPIs has been debated and one systematic review of several NPI studies in LTC facilities determined that none of the studies reached clinical significance about the efficacy of NPI utilization to address agitation in residents with dementia (Jutkowitz et al., 2016). Unfortunately, while recommendations addressing NPIs as first-line treatments for disruptive behaviors in dementia residents exist, none are specific to documenting the use of NPIs in LTC facilities. Finally, further studies regarding neurocognitive disorders in older adults, especially those over the age of 80 are needed (Banzi, Camaioni, Tettamanti, Bertele, & Lucca, 2016). An additional barrier for research with this population, informed consent, becomes very complicated when conducting studies with residents with a dementia diagnosis because of the nature of cognitive decline in dementia (Prusaczyk, Cherney,

Carpenter, & DuBois, 2017). More studies comparing NPI's with medications typically used to treat agitation or disruptive behaviors need to be conducted to have an accurate contrast between the effectiveness of each treatment modality (Porsteinsson & Antonsdottir, 2017). The complicated dynamics between studying dementia and obtaining informed consent from cognitively impaired older adults has, unfortunately, led to insufficient research within this specific resident population.

Summary

Nonpharmacological interventions are strongly supported within the literature, and, while robust longitudinal studies are lacking, evidence of NPI effectiveness is, nevertheless, available. Results of NPIs may not be long lasting, but sedating medications have side effects that outweigh the benefits of their use (Cohen-Mansfield, 2013; Seitz et al., 2013). Having staff understand that NPIs are considered best practice as initial interventions to treat disruptive behaviors in dementia residents is not sufficient. It is imperative that LTC staff members be educated about various NPI evidence based interventions as well as the important reality that resorting to sedating medications too quickly can be detrimental to older adults who have dementia. Educating staff specifically about interventions that have been shown to be effective in treating disruptive behaviors, and requiring the use of these interventions, can lead to an improvement in the quality of life of residents with dementia (Agency for Healthcare Research and Quality, 2014; Bomasang-Layno & Amin, 2016; De Oliverira et al., 2015). The project site had an infrastructure that supported the use of several recommended NPIs. With staff education on the use of NPIs as initial interventions, along with implementation of a standardized nonpharmacological checklist, improvement in care of residents with dementia at an LTC facility can be attained.

Chapter Three: Methodology

Introduction

This chapter will describe steps utilized to implement a standardized process to change practice and documentation in utilizing NPIs in residents with dementia in a LTC facility. This chapter includes a description of the design, project site, sample, methods, data collection, data analysis, and limitations of the proposed quality improvement project.

Design

The purpose of this quality improvement project was to implement a standardized checklist to increase the utilization of nonpharmacological interventions (NPIs) to treat disruptive behaviors in residents with dementia. All interdisciplinary team members who provide direct resident care were educated on NPIs as best practice as well as the importance of documenting attempted interventions. In using the PDSA model, during weekly huddles, staff feedback was utilized to evaluate changes in implementation of the checklist toward improvement. The nonpharmacological checklist and specific project processes were modified based on feedback reported during each subsequent week throughout a 12 week-implementation period (Appendix D). Staff compliance with the checklist was evaluated, on a weekly basis, in order to determine the effectiveness of the project.

Setting

The project site was a 120-bed, corporately owned long-term care (LTC) facility, located in Western North Carolina. The facility had a high number of residents with dementia diagnoses, and disruptive behaviors among residents were common. Additionally, the facility employed a variety of staff to care for residents – including nursing staff, certified nursing assistants (CNAs), and therapy staff (including the activities department). On any given day, staff directly

interacting with residents included the following: four nurses (some RNs, primarily LPNs), four to six CNAs (some are tasked specifically with giving showers to certain residents), two Physical Therapists (PTs), one Occupational Therapist (OT), five or more assistive therapy staff (PT assistants, OT assistants, etc.), one Speech Therapist, and one to two staff from the activities department. Like any modern healthcare delivery organization, staffing issues were common, so, the number of individuals on staff, on any given day, frequently fluctuated. Organizational approval from the leadership of the facility was obtained prior to implementation of the project (Appendix E).

Sample

Residents who met criteria for use of the NPI checklist included any long-term care resident of the facility with any dementia diagnosis, including: Unspecified Dementia, Alzheimer's Disease, Vascular Dementia, Lewy Body Dementia, and any other neurocognitive disorder that is classified as a dementia. Exclusions included any resident with dementia who also had a long history of a serious mental health disorder (such as Bipolar disorder or Schizophrenia) as well as any residents who were at the facility for short-term rehabilitation services only.

The focus of the project included all staff at the project site who provided care to residents with dementia. This included the nursing staff who are required to complete the documentation checklist as well as the staff who performed the NPIs. In order to capture all the disciplines that performed NPIs with the residents selected for the project, the nonpharmacological checklist included areas to designate which individuals from specific disciplines performed certain interventions.

Methods

The purpose of this project was to implement a standardized nonpharmacological checklist that was utilized by the interdisciplinary team in order to address a resident's basic needs (based on Maslow's Hierarchy of Needs) and attempt two additional nonpharmacological interventions prior to any PRN behavior medication administrations to residents with dementia (Appendix F). The IHI PDSA cycle worksheet was utilized at weekly huddles over a 12-week implementation period (Appendix I). All interdisciplinary staff members who provided direct care to residents were encouraged to participate in weekly huddles, and reminder flyers were posted on the notification bulletin board at the site (Appendix J). The first week huddle served as the initial education for interdisciplinary staff, and included: the project overview, evidence to support NPI utilization, recommended interventions to attempt with the residents, and the importance of non-nursing staff reporting, to the nurses, for documenting what interventions they have attempted. All staff were provided with handouts that included descriptions of evidence based NPIs to be used as a reference guide (Appendix N).

During the initial huddle, nurses received detailed education regarding steps about how to complete the NPI checklist. Each subsequent weekly huddle served as a forum for feedback about the project, and included discussions about the staff's perception of the required use of the NPI checklist and, feasibility of the expectations, as well as any suggested modifications to the checklist format. Weekly huddles occurred at different times in order to reach as many staff members as possible. During the second week of the project, a huddle specific to the therapy staff was held. Using the PDSA cycle for improvement, the standardized checklist was modified based on staff feedback during weekly huddles to improve compliance and meet the project objectives. The huddle format was chosen over more formal and lengthy in-services due to the

busy nature of the facility, despite the fact that huddles are not currently being utilized at the project site.

The documentation checklist was designed to be completed by the nursing staff, who are responsible for administering medications, and spaces were provided on the NPI checklist for nurses to delineate which individuals, from each specific clinical discipline, performed each intervention. Facility leadership was supportive of the project, and they agreed to promote staff participation in huddles and to encourage use of the checklist. Snacks were provided to all staff on huddle days, to encourage participation. Laminated cards were attached to the nurses' medication carts to remind them to complete the checklist on any eligible resident (Appendix Q). An alert was placed on the electronic chart of all eligible residents and on the nurses' report sheets to remind medication nurses to complete the checklist prior to administering any PRN behavior medications to a qualified resident. Furthermore, after discussions with nurses during various huddles, report was generated with each hall nurse to remind them which dementia residents on their respective hall were routinely receiving PRN behavior medications. The one-on-one report with the nurses served as the most effective reminder for checklist completion.

Protection of Human Subjects

An Institutional Review Board (IRB) reviewed the project, prior to its implementation, and deemed the project as non-human subject research (Appendix K). Data collected for analysis was staff compliance with the checklist. Staff data was only collected in general terms, with non-identifying information, (i.e. – discipline, title, profession, level of education, etc.) and reported aggregately (Appendix L).

Residents with a dementia diagnosis were identified by the project site and further evaluated by the project team to determine if they met eligibility criteria. A code sheet was

employed to track residents, utilizing only medical record number, in order to conduct chart reviews (Appendix M). No identifying information about residents was collected from the chart reviews for the purposes of the project. The resident code sheet was stored in paper format, separately from the data collection tool, in the project team member's locked office, within a locked drawer. The excel data collection tool was stored electronically on a password protected computer on a secure Pirate Drive.

Tools

The Nonpharmacological Checklist utilized for the documentation of NPIs, prior to PRN medication administrations, was created from a review of best practices within the literature (Appendix F). The checklist was based on Maslow's Hierarchy of Needs, recommendations from the Alzheimer's Association, and content based on an expert's clinical practice tables. Written permission was obtained from the content expert for usage of clinical practice guideline tables as a resource in the development of the NPI checklist (Appendix H).

The checklist consists of four sections to be completed prior to a PRN behavior medication administration. Section one allows for documentation of a description of the resident's behavior. Section two supports the documentation of whether the resident's basic needs have been assessed as a possible cause for the disruptive behavior. Section three includes the completion of the checklist, by a nurse, documenting at least two NPIs performed by any member of the interdisciplinary team prior to medication being given for difficulties associated with a resident's behavior. Section Four allows staff members to document the time/date the checklist was completed. The nurse completing the checklist signed it, and included his or her credentials along with his or her signature. Throughout the document, spaces were provided to delineate which clinical professional performed the interventions.

A list of recommended NPIs with brief descriptions was incorporated into a handout and distributed, during the huddles, for the staff to use as a reference to guide the NPI intervention (Appendix N). However, once the implementation period began, it became clear that additional written guidance was needed for the staff about the project expectations. A reference guide that outlined project expectations for all staff was created and distributed during subsequent PDSA huddles (Appendix O). Furthermore, a quick step-by-step guide was developed just for the nurses because of the busy nature of the facility (Appendix P). Laminated cards were created and attached to all the nursing medication carts as a reminder to review and complete the documentation checklist prior to administering a PRN behavior medication (Appendix Q). Additionally, an alert stating that the resident was eligible for the NPI project, has been added to the resident's electronic chart, and the nursing report sheets, to remind medication nurses to complete the NPI checklist prior to administering a PRN behavior medication. The alerts were only visible to medication nurses and ultimately did not remain a part of the resident's permanent chart. During the PDSA huddles, additional reminder methods were developed based on feedback from the nurses.

Data Collection

The evaluation method was two-fold, and occurred weekly. First, the weekly evaluations, during huddles, provided direct feedback regarding the standardized checklist, compliance with nonpharmacological interventions, and any issues with the project implementation. Feedback from staff, during weekly PDSA huddles, was used anecdotally for evaluation of project implementation (Appendix I). Modifications were made, during the weekly huddles, based on staff feedback to improve overall compliance with checklist completion.

Completed checklists remain as part of the paper charts for the residents that met inclusion criteria. Weekly chart reviews were conducted, and data was collected, in order to evaluate overall compliance with the completion of the checklist. In addition, demographic information on staff completing the checklist was collected. Compliance was assessed by a weekly comparison of documented MAR PRN behavior medication administrations with the number of nonpharmacological checklists completed (Appendix L).

Data Analysis

Descriptive statistics evaluating the frequency and percentages of checklist completion were utilized to determine whether an improvement in staff compliance in utilization of the NPI checklist occurred during the course of the project. Descriptive analysis of staff education levels was also examined to determine whether education level was a factor. A comparative analysis of the frequency of NPI implementation, by various discipline team members, was also reviewed.

Budget/Resources

There was no outside funding source for this project. All printing/laminating services, materials, travel expenses, refreshment costs, and any additional expenses incurred were covered as part of the project implementation process. The project budget was \$2,000, and total costs incurred totaled \$1,370.25 (Appendix R).

Summary

The project was designed to cause the least amount of disruption to staff caring for residents at the project site. The primary method of evaluation was based on assessing the compliance in completion of the nonpharmacological checklist by the nursing staff. Education was provided to all staff members who provide direct resident care to increase the awareness of

all staff regarding the efficacy of nonpharmacological interventions with residents with dementia.

Chapter Four: Results

Implementing a quality improvement project in a LTC facility was challenging. The project facility was large with numerous residents with dementia, which fit the parameters initially set forth in the project design phase. However, numerous barriers to checklist completion were encountered during the project implementation process.

Participant Demographics

During the initial resident selection process, 40 residents were identified based on the eligibility criteria. Of the 40 residents selected with the assistance of the project team, 7 or 17.5% of these residents died or were discharged from the facility. Only 6 out of 40 (15%) of the residents originally selected received any PRN behavior medications during the course of the twelve weeks. Additional patients admitted to the facility after the start of the project were not evaluated for inclusion in the project per request of the facility administration.

Staff demographics included 12 CNAs, 10 therapy staff, 3 RNs, and 14 LPNs. The nurses who completed or had an opportunity to complete the NPI checklist included 1 RN and 12 LPNs (Table 3). Of the staff involved in administering NPIs to the residents, the majority of the NPIs were attributed to the nursing staff at 55% (52 of 95) and the CNAs at 40% (38 of 95) (Table 1). A review of the checklists revealed that only 5% (5 out of 95) of the interventions were provided by the therapy staff; consisting of one PT, two PTAs, and two OTAs (Table 1).

Intended Outcome

The intended outcome of the project was to promote the usage of NPIs prior to the administration of any PRN behavior medications to residents with dementia. The outcome was to be accomplished through evaluating staff compliance in utilization of NPI checklist to be completed prior to any PRN behavior medication administration. With use of weekly education

huddles and PDSA review process, the goal was increased staff awareness in NPI utilization in residents with dementia.

Findings

The final checklist completion rate was 70% (23 of 33) (Table 2). The rate improved dramatically from the first 4 weeks of the project to the last 4 weeks of the project (Graph 1). During the first week of the project, there was one opportunity and a LPN completed the checklist appropriately, making the completion rate for week one, 100%. However, initial reminder methods were ineffective and by week 2, the completion rate was 0%. By week four, each nurse had participated in an education huddle and/or received an education packet and by the end of the fourth week, the completion rate was 38% (3 of 8). After multiple PDSA cycles, reminder methods were adjusted to suit the needs of the facility staff and completion rates improved dramatically from 38% during the first 4 weeks, to 79% (11 of 14) at the end of 8 weeks, and 81% (9 of 11) during weeks 9 through 12. The RN completion rate was much higher than the LPN completion rate 100% vs. 68% (Table 3).

During PDSA huddles, an initial concern was discussed regarding the limited number of checklist completion opportunities. Staff attributed limited opportunities to an increased usage of NPIs, following the NPI usage education sessions. Although therapy staff were only credited with 5% of the NPIs on the checklists, therapy staff attributed this to their success in implementing NPIs. In other words, residents working with therapy staff required less PRN behavior medications (Table 1). Unfortunately, the contribution of therapy staff in utilization of NPIs at the facility was likely not accurately reflected on the NPI checklists. Basic needs assessments and calming presence were the most commonly utilized NPIs, however, interventions varied based on specific patient needs.

Summary

The project achieved the goal of promoting staff utilization of NPIs with residents with dementia. Checklist compliance rates improved after the process was modified and reminder methods were adapted based on staff feedback. An improvement in NPI utilization by staff was noted with implementation of staff education on the use of NPIs in patients with dementia.

Anecdotal feedback collected during PDSA huddles indicated that use of NPIs increased during the course of the project implementation period, although this was not accurately reflected in the number of checklist completion opportunities.

Chapter Five: Implications for Nursing Practice

The goal of any quality improvement project is to improve the quality of care provided to a target group of residents or in a targeted environment. Oftentimes resident care can be improved for a specific group in a specific environment by implementing a practice change based on best practices. This project has multiple implications for the care of residents with dementia in LTC facilities.

Practice Implications

A practice implication is simply a conclusion that can be drawn about how nursing practice should be adjusted in the future based on the results of a study or project (Health Resources & Services Administration, 2011). The American Association of Colleges of Nursing (AACN) guides the education of nurses pursuing a Doctor of Nursing Practice degree (AACN, 2006). This guidance is provided by “The Essentials of Doctoral Education for Advanced Nursing Practice” or simply DNP Essentials; which is a document developed by the AACN in 2006 to guide universities in the appropriate education of nurses attempting to gain a clinical doctorate (AACN, 2006). Each of the eight DNP essentials are summarized below with implications to practice that can guide similar quality improvement projects. DNP essentials are listed below with each essential related back to practice implications identified as a result of NPI project implementation.

Essential I. Scientific underpinnings for practice. This DNP essential outlines the importance of the scientific underpinning for a doctoral level nursing education (AACN, 2006). It is easy to forget, but nursing is a scientific profession that incorporates a multitude of other sciences into its practice (AACN, 2006). This essential is imperative because the utilization of NPIs prior to the use of sedating medications is based on scientific evidence. The outcome of

improved compliance with modified methods based on weekly PDSA cycles is also involved with this essential because the PDSA process is a specific scientific process for improvement (Agency for Healthcare Research & Quality, 2015). The nursing staff responded positively to having weekly discussions about the project process and the compliance rate improved as a result. An increase in staff awareness and increased utilization of NPIs support scientifically based ethical nursing practice over simply sedating residents for staff convenience. Furthermore, the use of NPIs promotes the psychosocial wellbeing of residents with dementia (Anderson, Bird, MacPherson, & Blair, 2016).

Essential II. Organization and systems leadership for quality improvement and systems thinking. This DNP essential is defined as the doctoral prepared nurse being able to function within organizational and systems level leadership roles to improve the quality of care provided to patients, as well as promoting the utilization of best practices (AACN, 2006).

Nonpharmacological interventions (NPIs) have long been considered best practice as first line interventions for the management of behavioral issues in residents with dementia (Alzheimer's Association, 2009, 2013, 2015; Chenoweth, 2015; Cohen-Mansfield, 2013; De Oliverira et al., 2015; Jutkowitz et al., 2016; & Lavoie-Vaughan, 2014). DNP prepared nurses are specifically qualified through the educational requirements to seek out areas for quality improvement, and determine the best way to integrate best practices to enhance the level of care provided to specific patient populations (AACN, 2016). Through leadership guidance and use of a standardized checklist, staff at the project facility were encouraged to improve care delivery to residents with dementia with an emphasis on best practices, and utilizing appropriate resources prior to resorting to the administration of dangerous sedating medications.

One important portion of this essential is the concept of accountability (AACN, 2006). The doctoral prepared nurse is not only equipped to identify areas for improvement, but he/she is also responsible for verifying accountability with best practices (AACN, 2006). The documentation checklist and PDSA process created an environment of accountability. Increasing staff awareness of best practices, and having them realize that their compliance was being monitored on a weekly basis allowed for completion rates to improve over time. The benefits of having a process to encourage the utilization of NPIs has the potential to far outweigh any perceived negatives (De Oliverira et al., 2015). Sedating medications, such as those traditionally used to treat dementia behaviors are on the Beers List as medications that should be avoided in older adults (Terrery & Nicoteri, 2016). These medications can create dangerous situations where residents are at risk for falling, which is much more expensive for the healthcare system than additional staff time spent utilizing NPIs for disruptive behaviors (Wimo et al., 2017). Required documentation was utilized in conjunction with weekly PDSA cycles as an effective accountability measurement to ensure that LTC facility staff were compliant with best practices.

This DNP essential further describes the role of the DNP prepared nurse in managing ethical dilemmas that are characteristic of providing healthcare services (AACN, 2006). Ethical dilemmas are inherent to healthcare in general, but are especially common in the care of older adults. As individuals age, the frequency of difficult decisions increases. End of life decisions, long-term care decisions, financial and property decisions; all of which can be ethically difficult decisions to make. Healthcare professionals are faced with ethical dilemmas every day, and a common dilemma in long-term care arises out of staff shortages vs. providing resident-centered care (Cohen-Mansfield, Thein, Marx, & Dakheel-Ali, & Freedman, 2012). Administrative staff often question the cost effectiveness of any intervention that will increase staff time with a

resident, however, the alternative in using medications with high side effect rates that lead to a multitude of much more costly outcomes (Lapeyre-Mestre, 2016). Requiring staff to document NPIs, increased staff compliance with and recognition of the ethical importance of attempting NPIs prior to administering dangerous sedating medications that could result in long-term complications for the resident.

Essential III. Clinical scholarship and analytical methods for evidence based practice. This essential defines the importance of a DNP prepared nurse's ability to evaluate literature to determine what is considered best practice within a specific area of clinical interest (AACN, 2006). It is imperative that the doctoral prepared nurse be able to synthesize the information gleaned from a best practice review of literature, and utilize that evidence to create sustainable quality improvement initiatives (AACN, 2006). Ensuring the utilization of interventions that are considered best practice was the foundation of this process. Evidence based practice often takes time to make it from articles to practice, creating the need for doctoral prepared nurses who are skilled in the review of literature and implementation of processes to improve the safety and effectiveness of patient care (AACN, 2006).

NPIs have long been considered best practice for managing disruptive behaviors in patients with dementia, with the Alzheimer's Association endorsing them in 2009 (Alzheimer's Association, 2009). Overcoming the barrier of staff strain can be difficult when implementing a new quality improvement process, especially in a long-term care environment. DNP prepared nurses are provided the tools to create lasting, effective improvement plans that start with providing evidence based education to staff to improve the quality of patient care (AACN, 2006). Education is the key to preventing staff strain from becoming a significant barrier that derails the implementation of an evidenced based process for improvement (Edvardsson, Sandman, &

Borell, 2014). The documentation checklist had the effect of encouraging compliance with the utilization of NPIs with minimal staff burden, as evidenced by the 70% final checklist compliance rate.

Essential IV. Information systems/technology and patient care technology for the improvement and transformation of healthcare. This DNP essential relates to the importance of a doctoral prepared nurse's ability to effectively utilize technological resources at their disposal (AACN, 2006). Modern electronic charting systems offer healthcare professionals a wealth of information about patient statistics, trends, and outcomes (AACN, 2006). Unfortunately, the ability to modify the project site's electronic health record (EHR) to include the checklist, while ideal, was not possible. However, now that documentation of NPIs has been identified as a method for ensuring compliance, it is strongly recommended that all LTC facilities add a standardized NPI checklist as part of their daily EHR documentation for residents with dementia.

Essential V. Healthcare policy for advocacy in healthcare. Healthcare policy is an ever-changing landscape and it is vital that DNP prepared nurses stay informed as policies evolve (AACN, 2006). Advocates for patient safety, such as advanced practice nurses, often lead the charge for new policies to improve patient care (AACN, 2006). The Centers for Medicare & Medicaid's (CMS) policy towards antipsychotic (AP) usage in long-term care was the catalyst for changes in the care of residents with dementia (CMS, 2014). These policy changes made care provided in LTCs both more complicated and more resident centered (Bowblis, Lucas, & Brunt, 2015). The outcome aligns well with the CMS policy towards eliminating unnecessary antipsychotic medication usage (CMS, 2014). In the future, it would be advantageous for the CMS to consider documentation as a method to guarantee compliance with their

recommendations, rather than simply monitoring AP usage in LTC facilities. Policy regarding the care of individuals with dementia needs to change on a state and national level to require the usage and documentation of NPIs prior to administering any PRN behavior medications.

More directly, policies within LTC facilities should include a requirement for documenting NPIs prior to any PRN behavior medication administrations. This documentation would be most effective if it was included directly in the EHR system and tied to the MAR. In other words, nurses would not be able to chart a PRN administration in the electronic MAR without first documenting attempted NPIs that were utilized with the resident.

Essential VI. Interprofessional collaboration for improving patient and population health outcomes. This DNP essential outlines the need for Interprofessional collaboration within healthcare delivery systems (AACN, 2006). Doctoral prepared nurses need to be able to recognize the importance of interprofessional teams, as well as being able to adequately lead these teams when necessary (AACN, 2006). The project promoted the inclusion of interprofessional team collaboration to improve the quality of care provided to residents with dementia. Completed checklists remained in the residents' charts and served as a communication tool among the team that provided guidance to determine which NPIs had been previously effective for a specific resident. Having NPI communication tools that could be completed on each resident with dementia, independently of any relationship to PRN behavior medications would be ideal in the LTC setting.

Essential VII. Clinical prevention and population health for improving the nation's health. There has been a national focus on preventative medicine and population health since the publication of Healthy People 2010 (AACN, 2006). DNP nurses have the foundational knowledge to identify data trends relative to prevention and population health that may be absent

in some other nursing education programs (AACN, 2006). Residents with dementia are a unique patient population within the LTC community. These individuals have needs that may be more complicated than some other residents living in LTC facilities. The health of this group is often paradoxical in nature, with these residents having somewhat healthy bodies, but troubling decreases in cognition. Prevention of falls is incredibly important in this population because complications from falling can often be fatal (Burns, Stevens, & Lee, 2016). It is recommended that all sedating medications be used only after NPIs have been exhausted, since medications to control behavior greatly increase a resident's fall risk, especially if that resident has dementia (Hoffman, Hays, Shapiro, Wallace, & Ettner, 2017).

A primary goal of Healthy People 2020 is to decrease the healthcare costs associated with dementia care (Office of Disease Prevention and Health Promotion, 2016). It is unfortunate that one of the most common causes for the inflated costs of dementia care is the frequency of falls in older adults with dementia (Hoffman, Hays, Shapiro, Wallace, & Ettner, 2017). Older adults with dementia are already at an increased risk for falls, so preventative measures, including limiting the use of medications linked with an increased risk for falling is imperative to help contain the rising costs of dementia care (Office of Disease Prevention and Health Promotion, 2016; Tannenbaum et al., 2015)

Essential VIII. Advanced nursing practice. The DNP prepared nurse must also be prepared to excel as an advanced practice nurse, regardless of their role in advanced practice (AACN, 2006). Doctoral prepared nurses are provided with education to prepare them for complicated assessments as well as development and evaluation of patient specific interventions (AACN, 2006). The care of individuals with dementia is extremely complex. While nursing staff at LTC facilities do their best to provide safe and effective care, they often fail to recognize

the implications of their actions. Doctoral prepared advanced practice nurses have been educated to identify and implement best practice through quality improvement processes (AACN, 2006). Once an area of weakness is identified, advanced practice nurses with a DNP level education are uniquely prepared to design quality improvement initiatives that have long-term implications (AACN, 2006). This project was designed to improve the quality of care provided to residents through the utilization of therapeutic interventions. While the documentation checklist proved to be a useful tool to improve compliance with the utilization of NPIs, the most effective method to increase awareness of NPIs during the course of the project was staff education. DNP prepared advanced practice nurses (APRNs) are well qualified for designing and implementing effective staff education programs because they have rigorous educational programs mandated by the DNP essentials that prepares them to be effective change agents (AACN, 2006).

The most important aspect of any quality improvement initiative is the implications that can be gleaned from the results of the process. DNP prepared nurses have the knowledge and education background to identify what the results of a project really mean and what implications those results have for the healthcare community at large (AACN, 2006). One of the major implications identified regarding NPIs, is the importance of individualizing nonpharmacological interventions based on the needs of the resident (Chenoweth, 2015). Effective NPIs depend on the patient's personality and their dementia diagnosis (Millan-Calenti et al., 2016). The checklist created an unintentional opportunity for staff to document and recognize what NPIs were more effective for specific residents. This implication has broad reaching implication for APRN care provided in LTC facilities. Encouraging staff to complete and document NPIs prior to administering any sedating medications is much more effective if staff have an idea of what types of NPIs work well for each resident and individualized the plan of care.

Summary

The DNP essentials were utilized as a guide for developing, implementing, and evaluating the NPI quality improvement project. Guidance found within the DNP essentials provided opportunities for adjustments when challenges were identified. The promotion of interdisciplinary team involvement directed the development and implementation of the NPI checklist. Utilizing education and documentation as methods to promote compliance with best practices has wide reaching implications for the care of LTC residents with dementia. Identifying which NPIs are the most effective for each resident creates an environment of optimal NPI usage and helps promote the IHI Triple Aim goals of improving the patient experience, quality of care, and decreasing healthcare costs (Institute for Healthcare Improvement, 2017).

Chapter Six: Final Conclusions

Quality improvement projects are as much about the process and the results reached at the conclusion. The process provides as much opportunity for learning and analysis as the data produced from the project's implementation. The significance of a project of this nature is often found in review of the lessons learned throughout the course of the design and implication. This chapter will provide an overall discussion of the significance of the findings, project strengths and limitations, benefits, and recommendations.

Significance of Findings

The clinical significance of the findings of the project start with education and required documentation leading to improved compliance with best practices. The final checklist compliance rate was 70%, and staff reported increased understanding of the importance of NPI utilization in this resident population. This led to a much higher NPI usage than was reflected in the compliance rate. Facility staff reported that education provided during weekly huddles increased their understanding of effectiveness of NPIs and increased their willingness to attempt them as first-line interventions.

The documentation checklist and other documents provided during PDSA huddles heightened staff awareness of available NPI options to utilize in residents with dementia. Many staff members reported that having to complete the checklist was an instant reminder of other NPI options that were available. Various NPI reminder methods can be effective in changing the culture of NPI usage over time. NPI monitoring is recommended as a standard practice at facilities that provide care to residents with dementia. Requiring documentation of NPIs would be more effective if the documentation was not tied to PRN medication administration, but as a standard of practice for all members of the interdisciplinary team to consider when interacting

with residents with dementia. A standard document or flowsheet within an EHR system that captures all the NPIs utilized with a patient would allow members of the interdisciplinary team to recognize and communicate what interventions work best for each individual resident.

Furthermore, a standardized documentation tool would allow for a consistent review process to occur and allow for recommendations toward interventions that are most effective for different dementia diagnoses. Increased NPI utilization and documentation could be an effective method for meeting the IHI Triple Aim goals of improved patient experience, improved patient care, and decreased costs to the healthcare system (Institute for Healthcare Improvement, 2017).

Financial Implications. Dementia care continues to be one of the costliest services for our healthcare system, and Healthy People 2020 aims to reduce costs associated with dementia care, in the United States, while improving care provided in long-term care (LTC) facilities (Office of Disease Prevention and Health Promotion, 2016). The cost of dementia care services, globally, makes up more than 1% of the worldwide gross domestic product, leading not only the United States, but several developed nations to conduct research regarding improving care delivery to reduce costs (Wimo et al., 2017). Non-pharmacological interventions decrease overall costs to the healthcare system, improve resident satisfaction, and improve overall quality of life, which is in line with the goals of the Institute for Healthcare Improvement's (IHI) Triple Aim (IHI, 2017).

The project site may expect to incur increased expenses related to staff members' time spent with residents as a result of increased NPI implementation. However, this assumption is incorrect, because increasing staff utilization of person-centered NPI interventions has not been shown to increase the amount of time that staff must spend with residents (Burgio et al., 2001). The effective implementation of NPIs with residents does, however, improve the quality of staff

interactions with residents; this, in turn, leads to increased satisfaction among residents as well as among staff members (Edvardsson, Sandman, & Borell, 2014). Thus, if the project is maintained, on a long-term basis, the facility should anticipate seeing increases in governmental quality scores due to decreased usage of psychoactive medications in residents with dementia, as well as improved resident satisfaction scores. The facility can then use this quality data as a marketing strategy for attracting future residents.

Continuation of the NPI documentation requirements at the facility will likely see a decrease in resident care costs as expensive and dangerous sedating medications are eliminated from resident medication profiles. More importantly, the facility will see a decrease in the costs of caring for the serious adverse effects that can result from the inappropriate use of sedating medications. One of the most common adverse effects that occur in the elderly from inappropriate medication usage is falls (Tannenbaum et al., 2015). While dementia care itself ranks very high in cost for our healthcare system, in 2015, the “direct medical costs of falls were \$637.2 million for fatal falls and \$31.3 billion for nonfatal falls” (Burns, Stevens, & Lee, 2016, p. 102). One fall can cost the healthcare system anywhere from approximately \$9,000 to \$25,000, meaning that preventing falls should be a top priority for all healthcare professionals (Burns et al, 2016; Hoffman, Hays, Shapiro, Wallace, & Ettner, 2017). Falls are another area that CMS monitors for quality of care, so this is an area that LTC facilities closely monitor as well. If utilizing NPIs prevents even one fall related injury that would result from the inappropriate use of a PRN behavior medication, then this project will have served its purpose; thus saving the healthcare system thousands of dollars.

Project Strengths and Limitations

One major strength of the project was the simplicity of the design. The NPI checklist design was a major asset for the project because it was functional in as well as educational. The design was intended to decrease additional stress on the nursing staff while promoting compliance with best practices. Weekly PDSA huddles were another strength identified. Taking the time to follow-up with staff on a weekly basis allowed for adjustments to be made each week to improve compliance with completion of the checklist. Weekly data collection was also a strength, giving the ability to evaluate and address compliance on a real-time basis. The educational huddles and NPI reminder documents distributed to staff was an additional strength of the project.

Limitations. The goal of increasing utilization of NPIs was based on an assumption that requiring documentation of an intervention increases compliance with its utilization. The project was limited in scope to one LTC facility. A project of this nature would not be appropriate for primary care settings, because the providers within these settings do not spend extensive time with the patients to evaluate the effectiveness of NPIs. During the project planning period, several residents were identified as receiving frequent PRN behavior medications. However, by the time of implementation, many of those residents had died or were receiving scheduled medications that had drastically improved their behavior. This, coupled with the education provided to staff about NPI utilization, led to a limited number of opportunities for checklist completion since the checklist was tied to the use of PRN behavior medications. Per the request of the facility, additional residents admitted after the project was initiated were not eligible to be included.

Numerous barriers and limitations were identified. First of all, staff turnover at the facility was high. Many of the nurses that were present during the project design period for discussion and consultation were no longer working at the facility when the project was implemented. The facility was extremely understaffed and the staff considered themselves overworked throughout the project, contributing to some of the initial compliance issues. When nurses feel overworked and underappreciated, they are much less likely to willingly complete additional tasks (Anderson, Bird, MacPherson, & Blair, 2016). Additionally, many of the seasoned nurses at the facility refused to buy into the importance of the project and their negative attitudes contributed to the overall compliance rate.

Another barrier identified during the PDSA huddles was the staff perception of consequences associated with completion of the checklist. The nursing staff reported that they were concerned about signing their name to a documentation checklist that would remain a part of the resident's paper chart. It appeared that staff considered completing the checklist as a risk of false documentation. The timeframe of the project limited only 12 weeks.

Project Benefits

The major benefit was improvement in resident care provided to residents with dementia. The utilization of NPIs as first-line interventions is considered best practice by all major authorities in dementia care, and the implementation of the checklist mandated their usage (Alzheimer's Association, 2015; Bomasang-Layno & Amin, 2016; Cohen-Mansfield, 2013; Desai, Schwartz, & Grossberg, 2012; Zuidema et al., 2015). Having individualized plans of care based on documentation of NPIs that have been attempted with individual residents in the past is a major benefit to staff who are trying to provide safe and effective care in this difficult population.

Recommendations for Practice

Based on the project findings, detailed education for LTC staff regarding utilization of NPIs in residents with dementia would be highly recommended. A standardized checklist for documentation serves as a tool to hold staff accountable for performing the interventions. A recommendation for the future to improve the documentation method with the tool is not to link to medication, but rather associate it with the resident's behavior. The facility already has policies regarding NPI usage, however, without accountability, policies often aren't effective in promoting best practices. It is recommended that the facility have NPI documentation as part of the individualized resident plans of care. As additional research regarding specific NPIs is completed, any best practice changes identified should be included in any documentation checklists in the future. Finally, for the documentation method to be most effective, it should be incorporated within the EHR to decrease the staff burden, promote compliance, and allow for more effective data extraction. Future NPI improvement initiatives would be very beneficial if evidence was available to support specific NPIs that are effective for each type of dementia diagnosis or specific NPIs effective for certain identified behaviors.

Final Summary

Quality improvement is a process, and while it may be complicated, it is necessary for the continued advancement of healthcare delivery. Identifying areas for improved application of evidence based practice is the role of the DNP prepared advanced practice nurse. It is vital to provide safe and effective patient care, but it is equally important to recognize areas of care delivery that need improvement. Identifying areas of care delivery that need to be improved is typically the easy part. Creating and implementing a plan to promote a cultural change and

adherence with best practices tends to be more challenging. Having stakeholder support is crucial to launching a quality initiative, especially in an environment like a LTC facility.

Determining how to improve the quality of care for a specific patient group is the ultimate goal. Utilizing standardized documentation to improve compliance with best practices has been identified an effective method for practice improvement. In the future NPI documentation would be more efficient if it took the form of documentation log that tracked what specific NPIs are most effective for each individual resident with dementia. Furthermore, this style of documentation would be an excellent method for the interdisciplinary team to be able to communicate about which NPIs have been utilized successfully with each specific resident. Finally, it is incredibly important that clinical staff who care for residents with dementia are educated on the variety of NPIs that are available for utilization with each individual resident. Having NPIs as a focus of treatment of disruptive behaviors has the implication to improve the quality of care provided to residents of LTC facilities with dementia.

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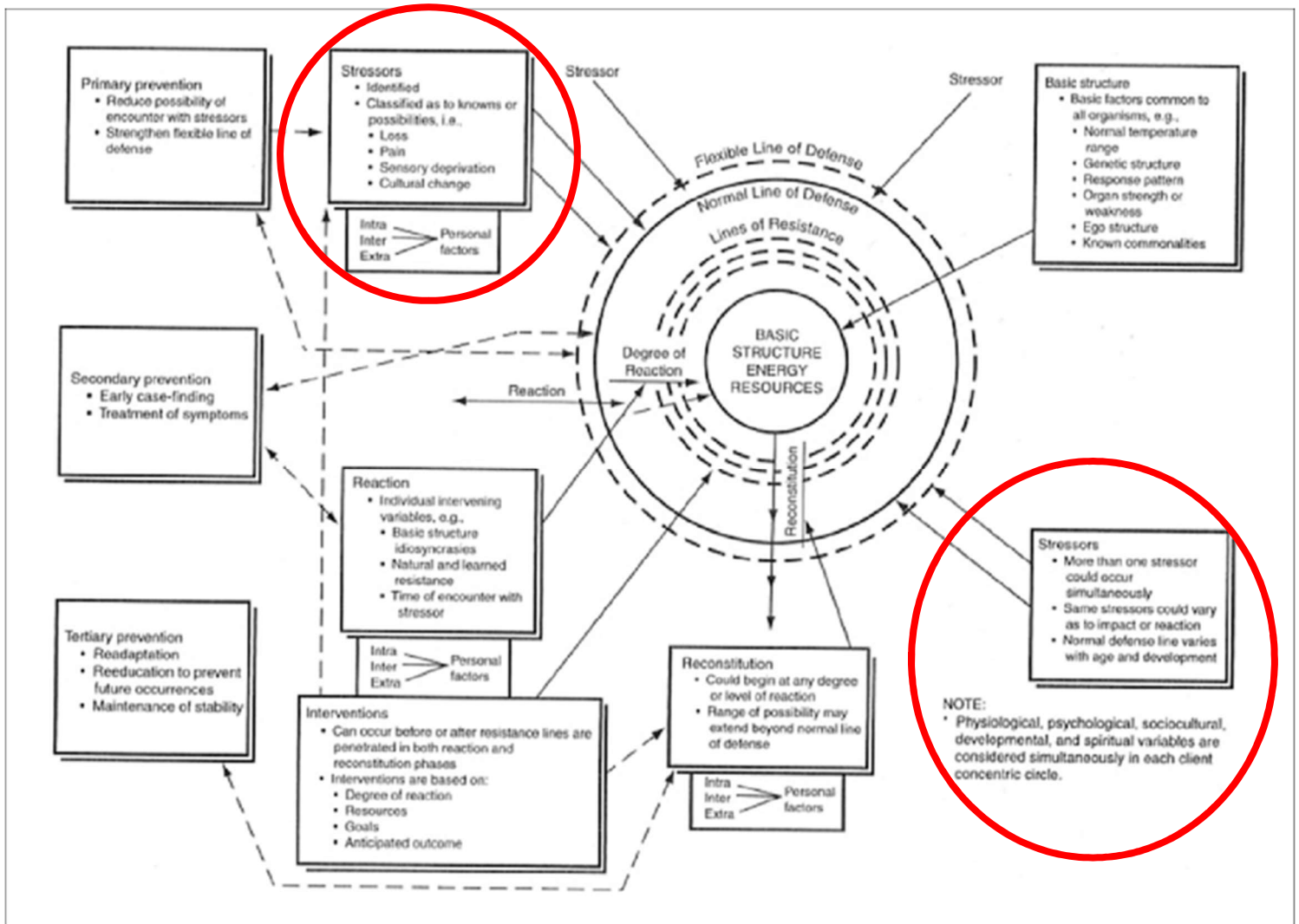
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Appendix A

Newman Systems Model



(Gonzalo, 2011)

Appendix B

Search Strategy for Literature Review

("dementia"[MeSH Terms] OR "dementia"[All Fields]) OR ("alzheimer disease"[MeSH Terms] OR ("alzheimer"[All Fields] AND "disease"[All Fields]) OR "alzheimer disease"[All Fields] OR "alzheimer's"[All Fields]) OR ("lewy bodies"[MeSH Terms] OR ("lewy"[All Fields] AND "bodies"[All Fields]) OR "lewy bodies"[All Fields] OR ("lewy"[All Fields] AND "body"[All Fields]) OR "lewy body"[All Fields]) AND agitation[All Fields] OR (("acting out"[MeSH Terms] OR ("acting"[All Fields] AND "out"[All Fields]) OR "acting out"[All Fields]) AND ("behaviours"[All Fields] OR "behavior"[MeSH Terms] OR "behavior"[All Fields] OR "behaviors"[All Fields])) OR (violent[All Fields] AND ("behaviours"[All Fields] OR "behavior"[MeSH Terms] OR "behavior"[All Fields] OR "behaviors"[All Fields])) AND nonpharmacological[All Fields]

Appendix C

Literature Evidence Matrix

Student: Jamie Lee Rouse	Course: NURS8269	Faculty Lead: Dr. Marshburn	Date:	Project: Nonpharmacological Interventions for Behavior Management in Dementia
Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings	Conclusion	Use of Evidence in EBP Project Plan (Include your evaluation, strengths/limitations, and relevance)
Agency for Healthcare Research and Quality. (2014). <i>Evidence-based practice center systematic review protocol project title: Non-pharmacologic interventions for agitation and aggression in dementia</i> . Washington, DC: U.S. Department of Health and Human Services. Retrieved from http://www.effectivehealthcare.ahrq.gov/ehc/products/559/1999/dementia-agitation-aggression-protocol-141113.pdf .	Level I	Gives detailed information regarding utilizing nonpharmacological interventions as first-line treatment for disruptive behaviors.	Nonpharmacological interventions have not consistently been used as first choice therapies because of a lack of understanding of their efficacy. They should always be attempted first because of the side effects associated with antipsychotic medications.	Provides information regarding recommended nonpharmacological interventions as well as outlines the risks associated with sedating medications in older adults. Supports the overall goals of the project and will be useful in helping with the drafting of the nonpharmacological checklist. Limitations: Only discusses antipsychotic medications and doesn't mention sedating medications in general.
Agency for Healthcare Research and Quality. (2015). <i>Plan-do-study-act (PDSA) directions and examples</i> . Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://www.ahrq.gov/professionals/quality-resident-safety/quality-resources/tools/literacy-toolkit/healthlittoolkit2-tool2b.html	Level VII	Provides actual examples of PDSA cycles for improvement to help with understanding the process.	Multiple cycles may be necessary to complete a change. One cycle of the PDSA may only take an hour.	Gives examples of how multiple cycles of the PDSA model can be implemented for one project in order to adapt the change and reach the best outcome.
Ahn, H. & Horgas, A. (2013). The relationship between pain and disruptive behaviors in nursing home resident with dementia. <i>BMC Geriatrics</i> , 13(14), 1-7.	Level VI	It was found that more severe pain is associated with less frequent wandering behaviors, but more	Pain exacerbated disruptive behaviors that are not locomotion-based. In order to reduce	Supports the basic needs aspect of my documentation checklist. Pain must be addressed as a cause of the resident's behavior before any PRN behavioral medications can be administered.

<p>http://www.biomedcentral.com/1471-2318/13/14</p>		<p>frequent aggressive and agitated behaviors.</p>	<p>these disruptive behaviors, their underlying causes, such as pain, should be investigated and well managed. A comprehensive pain assessment for residents with cognitive impairment needs to be developed further.</p>	<p>Limitation: Only discusses pain and there is some acknowledgement of conflicting information with other studies. More research into pain in residents with dementia needs to be completed.</p>
<p>Alzheimer’s Association. (2015). <i>Challenging behaviors</i>. Chicago, IL. Retrieved from https://www.alz.org/national/documents/statements_antipsychotics.pdf</p>	<p>Level VII</p>	<p>Studies have found that more than 90% of people with dementia develop at least one BPSD with a significant percentage of these individuals having serious clinical implications.</p>	<p>Alz Assoc position is that nonpharmacological interventions should be tried as a first-line alternative to pharmacological therapy for treatment of BPSD. Recommends education for staff.</p>	<p>Alz Association recommendations can be utilized to draft documentation checklist and coincides with project plan and goals.</p>
<p>Alzheimer’s Association. (2009). <i>Dementia care practice recommendations for assisted living residences and nursing homes</i>. Chicago, IL. Retrieved from http://www.alz.org/national/documents/brochure_DCPRphases1n2.pdf</p>	<p>Level VII</p>	<p>Person-centered care is considered best practice for dementia care.</p>	<p>Nonpharmacological interventions are best practice for addressing residents with disruptive behaviors.</p>	<p>Foundational document for project and drafting the documentation checklist. Limitations: Although this is the most recent document published by the Alz Association, it was published in 2009.</p>
<p>Alzheimer’s Association. (2013). <i>Managing behavioral and psychological symptoms of dementia (BPSD)</i>. Chicago, IL. Retrieved from http://www.alz.org/documents_custom/hcp_MD_BPSD.pdf</p>	<p>Level VII</p>	<p>Alzheimer’s Association supports the utilization of nonpharmacological interventions prior to any medications.</p>	<p>Residents with dementia often exhibit disruptive behaviors because of underlying issues: UTI, etc.</p>	<p>Supports assessing that a resident’s basic needs have been met, assessing for infection/pain/safety, and applying nonpharmacological interventions, ALL BEFORE the use of any PRN medications. Very helpful for drafting checklist.</p>
<p>Anderson, K., Bird, M., MacPherson, S., & Blair, A. (2016). How do staff influence the quality of long-term</p>	<p>Level V</p>	<p>Provided collective evidence to suggest there are</p>	<p>This review found that relationships do exist between</p>	<p>Supports educating staff about person-centered nonpharmacological interventions to improve resident quality of life.</p>

<p>dementia care and the lives of residents? A systematic review of the evidence. <i>International Psychogeriatrics</i>, 28(8), 1263-1281. doi: 10.1017/S1041610216000570</p>		<p>relationships between potentially adjustable staff variables and QOC on to QOL. When staff treat and interact empathetically and humanely in care, there is a relationship with better mood for residents, delayed functional dependence and better food intake. Where staff are more skilled and educated, there is less psychotropic medication use.</p>	<p>potentially adjustable staff variables and QOC and onwards to QOL. These findings raise further practical questions regarding how we can increase empathic staff interactions.</p>	<p>Limitations: Findings would have had much greater clinical utility if more studies had been longitudinal.</p>
<p>Arroyo-Anllo, E. M., Diaz, J. P., & Gil, R. (2013). Familiar music as an enhancer of self-consciousness in residents with Alzheimer’s disease. <i>BioMed Research International</i>, 2013, 1-11. http://dx.doi.org/10.1155/2013/752965</p>	<p>Level II</p>	<p>Residents included in the experimental group showed more improvement in self-consciousness than residents in the control group.</p>	<p>When using music therapy with residents with AD, familiar music is most effective in treating agitation symptoms and improving self-consciousness.</p>	<p>Provides evidence to support the use of familiar music therapy in residents with AD to improve agitation symptoms and increase self-consciousness. Useful as one nonpharmacological intervention to recommend to staff. Limitations: Only addresses music therapy as an intervention.</p>
<p>Banzi, R., Camaioni, P., Tettamanti, M., Bertele, V., & Lucca, U. (2016). Older residents are still under-represented in clinical trials of Alzheimer's disease. <i>Alzheimer's Research & Therapy</i>, 8(1), 32-41. doi: 10.1186/s13195-016-0201-2</p>	<p>Level V</p>	<p>Included 165 clinical trials testing almost 100 different compounds, which enrolled or planned to enroll about 74,300 participants. Seventy-nine of these trials, accounting for about 26,800 participants,</p>	<p>Residents enrolled in clinical trials on Alzheimer’s disease are far from being representative of actual distribution of the residents in the general population. Clinical research should not be</p>	<p>Useful in the limitations of the literature section.</p>

		reported the age of the participants. The weighted mean age was 73.6 years (standard deviation, 8.2). People younger than 80 years were highly represented in clinical trials (78 %), despite the fact that those aged 80 and older form the majority (72 %) of residents with Alzheimer's disease. Only 8 % of clinical trial participants were 85 years or older.	designed and conducted overlooking the fact that the majority of individuals with Alzheimer's disease are likely to be 80 or older.	
Bomasang-Layno, E., & Amin, R. (2016). The utility of bedside clinical guidelines for rational psychotropic use among residents in dementia care units. <i>American Journal of Geriatric Psychiatry, Supplement 1, 24(3)</i> , S120-S121.	Level VII	Provides basic guideline for prescribing antipsychotic medications to residents with dementia.	Nonpharmacological interventions must be exhausted before any antipsychotic medications are prescribed to any residents with dementia.	Useful as a reference for drafting educational materials. Will not specifically apply this guideline as it directly addresses prescribers and I do not have provider stakeholders at my facility. Limitations: Specific to prescribers.
Bowblis, J. R., Lucas, J. A., & Brunt, C. S. (2015). The effects of antipsychotic quality reporting on antipsychotic and psychoactive medication use. <i>Health Services Research, 50(4)</i> , 1069-1087. doi: 10.1111/1475-6773.12281	Level VI	Percentage of residents using antipsychotics, hypnotics, or any psychoactive medication was found to decline after public reporting.	Decreases in usage are likely not long lasting and substitute prescribing is a danger related to increased scrutiny of certain medications.	Provides evidence to support the causes and dangers of substitute prescribing secondary to increased government scrutiny of antipsychotic use. Limitations: Does not directly address nonpharmacological intervention usage.
Braden, B. A., & Gaspar, P. M. (2015). Implementation of a baby doll therapy protocol for people with dementia: Innovative practice.	Level VI	Study shows some improvement in resident agitation with doll therapy.	Baby doll therapy has been shown to greatly improve agitation, especially combative and	Provides evidence to support baby doll therapy as a type of therapy to include in suggestions, especially in the case of female residents who are highly agitated and combative.

<p><i>Dementia</i>, 14(5), 696-706. doi: 10.1177/1471301214561532</p>			<p>violent behaviors. It has been shown to give residents a feeling of usefulness, especially female residents.</p>	<p>Limitations: Only addresses baby doll therapy and the level of evidence is not incredibly strong.</p>
<p>Burgio, L. D., Allen-Burge, R., Roth, D. L., Bourgeois, M. S., Dijkstra, K., Gerstle, J.,...Bankester, L. (2001). Come talk with me: Improving communication between nursing assistants and nursing home residents during care routines. <i>The Gerontologist</i>, 41(4), 449-460.</p>	<p>Level II</p>	<p>Results were compared with those for participants on non-treatment control units. Trained CNAs talked more, used positive statements more frequently, and tended to increase the number of specific instructions given to residents. Changes in staff behavior did not result in an increase in total time giving care to residents. Maintenance of CNA behavior change was found 2 months after research staff exited the facility.</p>	<p>Nursing staff can be trained to improve and maintain communication skills during care without increasing the amount of time delivering care. The methodological advantages of including measures to assess treatment implementation are discussed.</p>	<p>Supports educating staff on better ways to deal and interact with residents. Improved communication with residents was not shown to increase the amount of time spent delivering care.</p> <p>Limitations: 2001 study.</p>
<p>Butts, J. B., & Rich, K. L. (2015). <i>Philosophies and theories for advanced nursing practice</i>. Burlington, MA: Jones & Bartlett Learning.</p>	<p>Textbook</p>	<p>P. 422-431 Neuman Systems Model</p>	<p>Outlines information about the Neuman Systems Model.</p>	<p>Useful information for the theoretical framework of the project.</p>
<p>Canevelli, M., Valletta, M., Trebbastoni, A., Sarli, G., D'Antonio, F., Tariciotti, L.,...Bruno, G. (2016). Sundowning</p>	<p>Level VII</p>	<p>Nonpharmacological approaches should be considered first-</p>	<p>Recommends nonpharmacological interventions to</p>	<p>Provides detailed information about sundowning and its underlying pathophysiology that may be useful for education of staff. Promotes the use of</p>

<p>in dementia: Clinical relevance, pathophysiological determinants, and therapeutic approaches. <i>Frontiers in Medicine</i>, 3(73), 1-7. doi: 10.3389/fmed.2016.00073</p>		<p>line therapy for sundowning. In particular, environmental modifications have been reported to be potentially beneficial to reduce sundown-related behaviors. Light therapy doesn't have robust evidence, but decreasing noise, discouraging napping, and encouraging daytime activities have been shown to be effective. Melatonin is recommended for residents who sundown, but studies show mixed results regarding its efficacy. There is no evidence to support the use of antipsychotics, benzodiazepines, and other hypnotics – linked with a common paradoxical increase in behavior disturbances.</p>	<p>reduce episodes of sundowning. More studies regarding nonpharmacological and pharmacological treatments for sundowning are needed.</p>	<p>nonpharmacological techniques and specifically states that benzodiazepines and hypnotics are not useful in treating sundowning, instead causing paradoxical increases in behavioral disturbances.</p> <p>Limitations: Synthesis of literature. No study or new data involved.</p>
<p>Centers for Medicare & Medicaid Services. (2014). <i>Interim report on the CMS National Partnership to improve dementia care in nursing homes</i> (DHHS Ref No. 14-19-NH).</p>	<p>Level VII</p>	<p>Using antipsychotic medications in elderly SNF residents with dementia is dangerous and</p>	<p>Establishment of a National Partnership with SNFs to reduce the number of APs prescribed to older adults in nursing</p>	<p>Foundation of the CMS recommendations for decreased use of APs in older adult SNF residents with dementia. This report and subsequent regulations explains why residents at the project site are being taken off APs on admission and then being placed on a medication that is not monitored by the</p>

<p>Washington, DC: U.S. Government Printing Office.</p>		<p>decreased use is recommended.</p>	<p>facilities, especially those with dementia.</p>	<p>CMS. Important information for the background section of paper.</p>
<p>Chenoweth, L. (2015). Long-term care characteristics that influence the utility and effectiveness of nonpharmacological therapies for people with dementia. <i>Neurodegenerative Disease Management, 5</i>(2), 109-119. doi: 10.2217/NMT.14.55</p>	<p>Level VII</p>	<p>Antipsychotic use persists in many cases because of habit more than anything else. Staffing ratios and leadership support are factors that affect implementation of nonpharmacological interventions.</p>	<p>LTC staff will need to be convinced of the efficacy of nonpharmacological interventions and quality care models before wide acceptance will be evident.</p>	<p>Supports that LTC staff need more education regarding nonpharmacological interventions and their efficacy in the treatment of agitation in older adult dementia residents.</p> <p>Limitations: Australian study.</p>
<p>Cherniack, E. P., & Cherniack, A. R. (2014). The benefit of pets and animal-assisted therapy to the health of older individuals. <i>Current Gerontology and Geriatrics Research, 2014</i>, 1-9. http://dx.doi.org/10.1155/2014/623203</p>	<p>Level V</p>	<p>Preliminary studies have suggested the potential benefits of animals on the physical and psychological health in humans. Despite over four decades of research, these studies remain preliminary. They are compounded by methodologic problems including small sample size and lack of adequate controls and blinding. A review of animal research more than a decade ago outlined barriers that still need to be overcome, including access of animals to subjects</p>	<p>Thus far, studies on the effects of animals on both mental and physical health have reported modest benefits. Trials of animal-assisted therapy demonstrated improvements in behavioral symptom scores in small numbers of subjects of limited duration. Investigations on the influence of animals on physical health, particularly epidemiological studies, that imply that the presence of animals can reduce cardiovascular risk, are more robust methodologically, but prospective trials</p>	<p>Supports that the use of pet therapy with older adults – modest benefits, likely outweigh risks. The project site only has pet visits and the handler monitors the interactions to prevent any harm to the resident or pet.</p> <p>Limitations: More studies need to be completed.</p>

		in institutional settings, fear of zoonotic diseases, lack of standardized survey instruments, and recruitment of animal handlers. There have yet to be any blinded animal investigations.	demonstrating clinical benefit still need to be performed.	
Christofoletti, G., Oliani, M. M., Bucken-Gobbi, L. T., Gobbi, S., Beinotti, F., & Stella, F. (2011). Physical activity attenuates neuropsychiatric disturbances and caregiver burden in residents with dementia. <i>Clinics</i> , 66(4), 613-618. doi: 10.1590/S1807-59322011000400015	Level VI	Residents with Alzheimer's or vascular dementia who engaged in physical activity had fewer neuropsychiatric symptoms than those who did not. When compared to the control group, the caregivers of residents with vascular dementia who engaged in physical activity had a reduced burden.	The regular practice of physical activity seems to contribute to a reduction in neuropsychiatric symptoms in dementia residents and to attenuate the burden of the caregivers of those residents.	The project site has a restorative therapy program for dementia residents. This will be useful as a type of nonpharmacological intervention to suggest to staff and include on the checklist. Limitations: 2011 study.
Cohen, L. W., Zimmerman, S., Reed, D., Sloane, P. D., Beeber, A. S., Washington, T.,...Gwyther, L. P. (2014). Dementia in relation to family caregiver involvement and burden in long-term care. <i>Journal of Applied Gerontology</i> , 33(5), 522-540. Doi: 10.1177/0733464813505701	Level IV	Adjusted analyses found that although the amount of family visitation did not significantly vary by resident cognitive status (15 versus 20 visits/month to persons with and without dementia, respectively), the nature of the visit did. Families of	Findings show that in a large sample of long-term care families and residents, family involvement in RC/AL and NH settings does not differ as a function of resident-dementia status, but the nature of the involvement does.	Supports family barrier information in background section. This is especially useful since the study was conducted in North Carolina. Limitations: NC study, may not generalizable to the nation as a whole.

		<p>cognitively intact residents spent more time in activities related to social and community engagement, such as taking residents on trips and calling and writing letters ($p < .001$), while families of more impaired residents spent more time on care-related activities, including tasks related to nutrition ($p < .027$), mobility ($p = .001$), and discussing care with staff ($p = .007$), the latter of which was associated with greater burden ($p < .001$). Staff identified similar patterns but perceived less family involvement.</p>	<p>Families of cognitively intact residents spend more time in activities related to social and community engagement, while those of residents with dementia instead spend more time on activities to support resident care. Because families are more sensitive to—and in some cases burdened by—involvement in some types of activities, any interventions to increase family involvement in the long-term care setting should consider these findings as part of implementation efforts.</p>	
<p>Cohen-Mansfield, J., Thein, K., Marx, M. S., Dakheel-Ali, M., & Freedman, L. (2012). Efficacy of nonpharmacologic interventions for agitation in advanced dementia: A randomized, placebo-controlled trial. <i>Journal of Clinical Psychiatry</i>, 73(9), 1255-1261. doi: 10.4088/JCP.12m07918</p>	<p>Level II</p>	<p>Relative to a control group, TREA interventions for unmet needs produced statistically significant declines in total ($P < .001$), physical nonaggressive ($P < .001$), and verbal</p>	<p>This is the first large randomized controlled trial to demonstrate the efficacy of TREA and one of only a few such trials of nonpharmacologic interventions for agitation in persons with dementia. The</p>	<p>Project will translate this research into practice with education about and promotion of the use of nonpharmacological interventions in older adults with dementia.</p> <p>Limitations: Study is 5 years old.</p>

		agitation (P=.004) and significant increases in pleasure (P<.001) and interest (P<.05).	translation of these findings into practice is sorely needed and would require structural changes dedicating staff time to observing each agitated resident, determining unmet needs, obtaining appropriate intervention materials, conducting the individualized nonpharmacologic interventions, and evaluating results.	
Cohen-Mansfield, J. (2013). Nonpharmacologic treatment of behavioral disorders in dementia. <i>Current Treatment Options in Neurology</i> , 15, 765-785. doi: 10.1007/s11940-013-0257-2	Level VII	Gives details regarding nonpharmacological interventions vs pharmacological interventions.	Nonpharmacological interventions are first-line therapy even though the results may be short-lived. Medications represent more risk than benefit because of medication interactions and SEs.	Very supportive of overall project goals. Useful information for developing education for huddles and checklist. Limitations: Expert opinion, not a study.
Cohen-Mansfield, J., Thein, K., Marx, M. S., & Dakheel-Ali, M. (2012). What are the barriers to performing nonpharmacological interventions for behavioral symptoms in the nursing home? <i>Journal of American Medical Directors Association</i> , 13(4), 400-405. doi: 10.1016/j.jamda.2011/07/006	Level VI	Barriers were observed for the categories of resident barriers (specifically, unwillingness to participate; resident attributes, such as unresponsive), barriers related to resident	Knowledge of barriers provides a tool by which to tailor interventions so as to anticipate or circumvent barriers, thereby maximizing intervention delivery.	Discusses barriers to implementing nonpharmacological interventions. These barriers will be addressed with the staff in the beginning of the project to try to help alleviate some of their concerns about the project creating additional work. Limitations: Needs longitudinal research.

		<p>unavailability (resident asleep or eating), and external barriers (staff-related barriers, family-related barriers, environmental barriers, and system process variables). Interventions pertaining to food/drink and to 1-on-1 socializing were found to have the fewest barriers, whereas higher numbers of barriers occurred with puzzles/board games and arts and crafts activities. Moreover, when successful interventions were presented to participants after the feasibility period, fewer barriers were noted, presumably because barrier identification had been used to better tailor interventions to each participant and to the environment.</p>		
<p>Daly, J. M., Bay, C. P., Levy, B. T., & Carnahan, R. M. (2015). Caring for people with dementia and challenging behaviors in nursing</p>	<p>Level VI</p>	<p>72% of surveyed DONs reported being unsatisfied or neutral about their</p>	<p>DONs clearly reported lack of knowledge regarding managing</p>	<p>Provides evidence to support that there is likely a knowledge deficit in staff caring for dementia residents who exhibit challenging behaviors.</p>

<p>homes: A needs assessment geriatric nursing. <i>Geriatric Nursing</i>, 36(2015), 182-191. http://dx.doi.org/10.1016/j.gerinurse.2015.01.001</p>		<p>training regarding managing challenging behaviors.</p>	<p>challenging behaviors. DONs report disliking classes and in-services, instead preferring online education, pocket guides, and laminated cards.</p>	<p>Supports using quick huddles and pocket materials for education purposes. Limitations: State specific study. Small study size. Limited response to surveys.</p>
<p>Delavande, A., Hurd, M. D., Martorell, P. & Langa, K. M. (2013). Dementia and out-of-pocket spending on health care services. <i>Alzheimer's & Dementia</i>, 9(1), 19-29. http://dx.doi.org/10.1016/j.jalz.2011.11.003</p>	<p>Level V</p>	<p>After controlling for demographics and comorbidities, those with dementia had more than three times the yearly OOP spending compared with those with normal cognition (\$8216 for those with dementia vs. \$2570 for those with normal cognition. Higher OOP spending for those with dementia was mainly driven by greater expenditures on nursing home care.</p>	<p>Dementia is associated with high levels of OOP spending but not with the use of dental care or foregoing rescription medications, suggesting that excess OOP spending among those with dementia does not “crowd out” spending on these other health care services.</p>	<p>Supports the high financial toll of dementia on the resident and the overall healthcare system. Limitations: Financial article, doesn't address care.</p>
<p>De Oliverira, A. M., Radanovic, M., De Mello, P. C. H., Buchain, P. C., Vizzotto, A. D. B., Celestino, D. L.,...Forlenza, O. V. (2015). Nonpharmacological interventions to reduce behavioral and psychological symptoms of dementia: A systematic review. <i>BioMed Research International</i>, 2015, 1-9. http://dx.doi.org/10.1155/2015/218980</p>	<p>Level V</p>	<p>50% of studies indicated that nonpharmacological interventions were effective in managing agitation in residents with dementia. Medications to treat agitation typically have poor outcomes</p>	<p>Studies focusing on alternative approaches have disclosed that different nonpharmacological interventions are able to provide positive results in reducing symptoms of BPSD. Most studies have</p>	<p>Supports project focus and desired outcomes. Useful for literature review section to support the need to make sure that nonpharmacological interventions are the first choice for treatment of disruptive behaviors in residents with dementia. Limitations: Is not specific to LTC facilities.</p>

		and undesired side effects.	demonstrated that these interventions have important and significant efficacy improving BPSD such as agitation, psychotic symptoms, and apathy. Undesired side effects of pharmacological treatments, as antipsychotics and benzodiazepines, have promoted a search for alternative treatments for BPSD. Therefore, nonpharmacological interventions programs should be considered as first-option interventions to treat BPSD.	
Desai, A. K., Schwartz, L., & Grossberg, G. T. (2012). Behavioral disturbance in dementia. <i>Current Psychiatry Reports, 14</i> , 298-309. doi: 10/1007/s11920-012-0288-5	Level VII	Describes various behaviors in detail.	Nonpharmacological interventions are first-line therapy for behavior management.	Majority of residents with dementia will experience some form of behavior disturbances in their disease course. Nonpharmacological interventions are recommended for initial treatment of behavioral disturbances because they are harmless and relatively inexpensive. Limitations: Not a study.
De Vries, K. (2013). Communicating with older people with dementia. <i>Nursing Older People, 25</i> (4), 30-37.	Level VII	Professional development article on communicating with older people with dementia.	Communication difficulties can contribute to a lot of issues between staff and residents with dementia.	Useful for drafting education for huddles with staff. Limitations: New Zealand article.
Donnell, P., & Kirk, P. (2015). How to use the PDSA model for effective	Level VII	Review of proper methods for	Simplifies the concept of PDSA	This article simplifies how to use the PDSA model.

change management. <i>Education for Primary Care</i> , 26, 279-281.		implementing the PDSA model.	into more understandable terms.	Limitation: Not detailed, will have to use additional resources about the PDSA model before implementing project.
Edvardsson, D., Sandman, P. O., & Borell, L. (2014). Implementing national guidelines for person-centered care of people with dementia in residential aged care: Effects on perceived person-centeredness, staff strain, and stress of conscience. <i>International Psychogeriatrics</i> , 26(7), 1171-1179. doi: 10.1017/S1041610214000258	Level VI	The intervention resulted in significantly higher scores on person-centeredness of care at follow-up, and the facility was rated as being significantly more hospitable at follow-up. A significant reduction of staff stress of conscience was also found on follow-up.	Increasing staff understanding of person-centered care increases the likelihood that staff will practice person-centered care. Utilizing person-centered care also improves staff satisfaction with the care they provide.	Supports the foundation of person-centered care for the project; supports educating staff on the importance of person-centered care and the likelihood of improved staff and resident satisfaction. Limitations: Swedish study.
Fitzsimmons, S., Barba, B., & Stump, M. (2014). Sensory and nurturing nonpharmacological interventions for behavioral and psychological symptoms of dementia. <i>Journal of Gerontological Nursing</i> , 40(11), 9-15. doi: 10.3928/00989134-20140923-01	Level VII	Listed nonpharmacological interventions and descriptions.	Continued research regarding nonpharmacological interventions is needed and residents benefit from a focus on well-being and limiting unnecessary medication administrations.	Lists various types of nonpharmacological interventions shown to be effective in older adults. Useful for developing staff education regarding interventions as well as listing recommended interventions on the documentation checklist. Limitations: Simply descriptive article with no attached research completed.
Fung, J. K., Tsang, H. W., & Chung, R. C. (2012). A systematic review of the use of aromatherapy in treatment of behavioral problems in dementia. <i>Geriatrics & Gerontology International</i> , 12, 372-382. doi: 10.1111/j.1447-0594-2012-00849.x	Level I	The RCT showed that aromatherapy had positive effects on reduction of BPSD, improvement in cognitive functions, increasing quality of life, enhancing independence of activities of daily living and so on. However, adverse effects were noted in	It is recommended that aromatherapy shows the potential to be applied as a therapeutic and safe complementary and alternative therapy for the management of BPSD on more evidence collected from better designed RCT.	Recommends aromatherapy as a nonpharmacological intervention for disruptive behaviors in residents with dementia. Limitations: Several limitations, more studies needed.

		some studies. Limitations on methodology are discussed and suggestions on directions of further studies are made.		
Gallagher, D., & Herrmann, N. (2015). Agitation and aggression in Alzheimer’s disease: An update on pharmacological and psychosocial approaches to care. <i>Neurodegenerative Disease Management, 5</i> (1), 77-83. doi: 10.2217/NMT.14.46	Level V	Literature review revealed evidence to support nonpharmacological interventions, but states that those interventions would likely have to be used in combination with medications.	Evidence to support psychosocial and pharmacological interventions for agitation and aggression in AD. Need more rigorous studies of nonpharmacological interventions.	Evidence to support nonpharmacological intervention. However, article points out limitations of evidence generalizability because of the lack of large scale RCT’s of psychosocial interventions.
Harrison, J. & Frampton, S. (2017). Resident-centered care in 10 U.S. nursing homes: Residents’ perspectives. <i>Journal of Nursing Scholarship, 49</i> (1), 6-14. doi: 10.1111/jnu.12247	Level VI	Qualitative findings from 20 focus groups with residents in 10 nursing homes suggest that RCC has meaning in ways that are consistent with intentions at the national and state levels to advance culture change in nursing homes, including efforts to create a more homelike environment, increase resident decision making and direction of his or her lifestyle, and put residents first.	Residents attribute increased choice in wake and bed times, being heard by organizational leaders, and consistent staff assignment as positive changes since RCC began. However, according to residents, aspects of institutional life in nursing homes, inconsistent with RCC, remain. Residents identified three areas of improvement that would make nursing homes more resident centered. The three areas are response time, access to	Supports a foundation of person-centered care for the project. One intervention for the checklist will be offering choices. The issues voiced by residents in the article, will be discussed during huddles. Limitations: Does not specifically address dementia, disruptive behaviors, or nonpharmacological interventions. However, the person-centered focus of the article is supportive of the project as a whole.

			nature, and transparency about illness and death in the community.	
Health Resources and Services Administration. (2011). <i>Testing for change</i> . Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://blackboard.ecu.edu/bbcswebdav/pid-8862553-dt-content-rid-42560861_1/courses/NURS8269601201730/NURS8269601201680_ImportedContent_20160726011727/PSDA%20Test%20of%20Change.pdf	Level VII	Describes in detail the PSDA model and testing for change.	Testing for change should be done on a small scale with continual re-evaluation of the plan.	Detailed information on how to use the PSDA model for the project.
Huybrechts, K. F., Schneeweiss, S., Gerhard, T., Olfson, M., Avorn, J., Levin, R., Lucas, J., & Crystal, S. (2012). Comparative safety of antipsychotic medications in nursing home residents. <i>Journal of the American Geriatrics Society</i> , 60, 420-429. doi: 10.1111/j.1532-5415.2011.03853.x	Level IV	Stats indicate slight increase in risks for certain diseases and adverse outcomes in older adults.	Antipsychotics should be used with extreme caution in older adults.	Supports why antipsychotics are discontinued on admission to the facility. Limitations: No discussion of nonpharmacological interventions.
Iaboni, A., Bronskill, S. E., Reynolds, K. B., Wang, X., Rochon, P. A., Herrmann, N., & Flint, A. J. (2016). Changing pattern of sedative use in older adults: A population-based cohort study. <i>Drugs & Aging</i> , 33, 523-533. doi: 10.1007/s40266-016-0380-3	Level IV	The dispensing of trazodone and quetiapine increased over time, and this coincided with a decrease in benzodiazepine dispensing. This pattern was particularly apparent in the oldest cohort and in those with dementia. Benzodiazepines, trazodone, and quetiapine were associated with high	While benzodiazepine prescribing is declining among older adults in Ontario over time, there is a corresponding shift towards low-dose, off-label prescribing of trazodone and quetiapine and psychotropic polypharmacy. These prescribing trends highlight	The project site is using sedative substitution to avoid antipsychotic use. They are using Trazodone, phenobarbital, and benzodiazepines to treat disruptive behaviors. There is no evidence that this practice is safe or effective. Substituting one Beers list drug for another is not going to improve resident outcomes. Limitations: Doesn't specifically discuss many of the drugs used at the project site and states that more studies are needed. Canadian study.

		rates of psychotropic polypharmacy. Overall trends were similar in long-term care and the community.	sedative substitution and reinforce the need to confirm the efficacy and safety of this practice.	
Institute for Healthcare Improvement. (2016). PDSA worksheet. Cambridge, MA. Retrieved from http://www.ihf.org/education/IHIOpenSchool/resources/Assets/PDSAWorksheet_Instructions.pdf	Worksheet	Instructions and worksheet for PSDA cycle.	Usable PDSA cycle worksheet.	IHI gives permission for the usage of the worksheet on the document, requires that the IHI logo be present on the worksheet. Limitations: PDF Document, not easily modifiable.
Janzen, S., Zecevic, A. A., Klobeck, M., & Orange, J. B. (2013). Managing agitation using nonpharmacological interventions for seniors with dementia. <i>American Journal of Alzheimer's Disease & Other Dementias</i> , 28(5), 524-532. doi: 10.1177/1533317513494444	Level VI	Staff report agitation as being very disruptive to workflow, report that scheduled education about nonpharmacological interventions is often too generic and repetitive, and antipsychotic/sedating medications are still used too often.	Staff report belief that NPI are effective in reducing agitation and that proper utilization of NPIs are useful for reducing PRN behavior medication usage.	Fully supports project scope and goals. Very useful information about staff perceptions and how to improve NPI implementation. Limitations: Qualitative study with limited generalizability.
Johnston, B. & Narayanasamy, M. (2016). Exploring psychosocial interventions for people with dementia that enhance personhood and relate to legacy: An integrative review. <i>BMC Geriatrics</i> , 16(77), 1-25. doi: 10.1186/s12877-016-0250-1	Level V	Geriatric care programs should have a focus on personhood.	Personhood and acknowledging the person behind the resident improves agitation in residents with dementia.	Provides excellent synthesis of articles regarding reminiscence, legacy, and life story work. Useful when describing how best to use life story work and reminiscence to provide person centered care. Limitations: Only addresses life story style interventions.
Kales, H. C., Gitlin, L. N., Lyketsos, C. G. (2015). Assessment and management of behavioral and psychological symptoms of dementia. <i>British Medical Journal</i> , 2015(350), 369-385. doi: 10.1136/bmj.h369	Level V	Behavioral symptoms are among the most complex, stressful, and costly aspects of care, and they lead to a myriad of	Non-pharmacologic approaches should be used first-line, although several exceptions are discussed. Non-pharmacologic	Provides several useful tables as well as details various nonpharmacological interventions as first-line treatment for behavioral symptoms. Limitations: Doesn't specifically address LTC facilities. Doesn't provide robust evidence for nonpharmacological interventions.

		<p>poor resident health outcomes, healthcare problems, and income loss for family care givers. The causes include neurobiologically related disease factors; unmet needs; care giver factors; environmental triggers; and interactions of individual, care giver, and environmental factors. The complexity of these symptoms means that there is no “one size - fits all solution,” and approaches tailored to the resident and the care giver are needed.</p>	<p>approaches with the strongest evidence base involve family care giver interventions. Regarding pharmacologic treatments, antipsychotics have the strongest evidence base, although the risk to benefit ratio is a concern.</p>	
<p>Lapeyre-Mestre, M. (2016). A review of adverse outcomes associated with psychoactive drug use in nursing home residents with dementia. <i>Drugs & Aging, 33</i>, 865-888. doi: 10.1007/s40266-016-0414-x</p>	<p>Level V</p>	<p>Literature review of articles related to psychoactive medication use in older adults with dementia.</p>	<p>All psychoactive medications increase the risk of mortality, especially within the first 30 days of the initial prescription.</p>	<p>Supports the danger of using psychoactive medications in older adults with dementia. Limitations: Doesn’t specifically address some of the medications used at the project site.</p>
<p>Lavoie-Vaughan, N. (2014). A critical analysis and adaptation of a clinical practice guideline for the management of behavioral problems in residents with dementia in long-term care. <i>Nursing Clinics of North America, 49</i>(2014), 105-113.</p>	<p>Level I</p>	<p>Literature review to develop clinical practice guideline that includes multiple nonpharmacological interventions for behavior</p>	<p>The clinical practice guideline needs to include best practice interventions and more studies on nonpharmacological interventions need to be done in the future</p>	<p>Evidence to support the utilization of nonpharmacological interventions prior to administering any behavior medications. Support for educating staff regarding best practice.</p>

http://dx.doi.org/10.1016/j.cnur.2013.11.006		management in LTC residents with dementia.	to provide more robust evidence.	
Lavoie-Vaughan, N. (Received Feb 27 2017). Tables for CPG [Word Document].	Word document			Document received from Dr. Lavoie-Vaughan regarding information utilized for her CPG DNP Project. Using this information with permission to assist in drafting the documentation checklist.
Mansfield, J. C., Dakheel-Ali, M., Marx, M. S., Thein, K., & Regier, N. G. (2015). Which unmet needs contribute to behavior problems in persons with advanced dementia? <i>Psychiatry Research</i> , 228(2015), 59-64. http://dx.doi.org/10.1016/j.psychres.2015.03.043	Level IV	Study reveals an average of 3 unmet needs per resident. A high prevalence of unmet needs relating to social contact and meaningful activities was found. Determining unmet needs in this population is difficult.	Interdisciplinary team involvement is supported because different disciplines pay attention to different resident needs as they relate to the individual's specific role.	Supports the need for staff education regarding unmet needs and how those needs can negatively affect residents' behavior. Supports the usage of nonpharmacological techniques to make sure that a resident's needs are met. Data regarding 3 unmet needs for every resident is striking and will be very useful in educating staff. Limitations: Small sample size.
Maslow, A. H. (1987). <i>Motivation and personality</i> (3 rd ed.). London, UK: Longman Publishing Group.	Level VII		Basic needs must be met before people can pursue higher levels of happiness.	Useful for drafting basic needs section of checklist and a useful reference for certain sections of the paper. Limitations: Developed several years ago.
McCullers-Varner, M. (2012). Managing communication and behavioral changes in dementia. <i>The Alabama Nurse</i> , 39(1), 5-7.	Level VII	Details various interventions to try for behavior issues.	Treat residents how you would want to be treated.	Provides a useful list of suggested interventions for behavior management. Limitations: Opinion, not a study.
Millan-Calenti, J. C., Lorenzo-Lopez, L., Alonso-Bua, B., De Labra, C., Gonzalez-Abraldes, I., & Maseda, A. (2016). Optimal nonpharmacological management of agitation in Alzheimer's disease: Challenges and solutions. <i>Clinical Interventions in Aging</i> , 11, 175-184. http://dx.doi.org/10.2147/CIA.569484	Level V	Evidence to support more agitation in residents with AD than with other forms of dementia. Music therapy is considered an optimal intervention. Most others still need much more research before they can be considered "optimal."	This review found that music therapy is an effective nonpharmacological intervention for reducing agitation in institutionalized AD residents, particularly when the interventions applies individualized and interactive music.	Supports the use of Music Therapy in residents with agitation. Music therapy is more effective when it is individualized. Limitations: Doesn't support any other nonpharmacological intervention. Suggests music therapy is usually effective only with certified staff performing the therapy.

			Bright light therapy has little and potentially no clinically significant effects on agitation. Therapeutic touch is effective for reducing physical nonaggressive behaviors but does not reduce aggressive behaviors effectively. <i>Melissa</i> aromatherapy and BMT do not appear to be superior to pharmacological therapies or placebo. Much more research is needed.	
Mollot, R. J., & Butler, D. (2012). <i>Federal requirements & regulatory provisions relevant to dementia care & the use of antipsychotic drugs</i> . New York, NY: Long Term Care Community Coalition. Retrieved from http://theconsumervoice.org/uploads/files/issues/lccc-antipsychotic-drugs-oversight-ftags-2.pdf	Level VII	Details federal requirements and regulatory provisions relevant to dementia care and the use of antipsychotic drugs.	Decreasing the use of antipsychotic drugs in dementia care is required by federal regulations.	Useful for background information about why residents in the facility are having antipsychotics discontinued on admission.
Moyle, W., Murfield, J. E., O'Dwyer, S., & Van Wyk, S. (2012). The effect of massage on agitated behaviours in older people with dementia: A literature review. <i>Journal of Clinical Nursing</i> , 22, 601-610. doi: 10.1111/j.1365-2702.2012.04234.x	Level V	Thirteen studies met the inclusion criteria and were assessed on the VRT. One study was considered of adequate methodological quality to be included in the review. This	There is a severe paucity of research that considers the effects of massage on managing agitated behaviors in older people with dementia. While conclusions cannot be drawn from the one study included	Supports the limited use of massage as a behavior intervention based on the results of one study reviewed with provider understanding that this intervention has very little evidence to support its use. Limitations: Only one study considered to have adequate methodological quality. Much more research is needed.

		prospective study found that massage significantly reduced levels of agitation in 52 cognitively impaired residents in two long-term care facilities.	in this review, it did provide evidence to support the use of massage as a non-pharmacological approach to managing agitation in older people with dementia. More research, of better methodological quality, is needed.	
Nordgren, L., & Engstrom, G. (2012). Effects of animal-assisted therapy on behavioral and/or psychological symptoms in dementia: A case report. <i>American Journal of Alzheimer's Disease & Other Dementias</i> , 27(8), 625-632. doi: 10.1177/1533317512464117	Level VI	Some improvements in cognitive state were noted in subject.	Physical, psychological, and/or social training with certified therapy dog teams can have effects on behavioral and psychological symptoms in people living with dementia. Further research is needed.	Supports the use of animal therapy in older adults with dementia. Limitations: One person study. Further research is needed.
Office of Disease Prevention and Health Promotion. (2016). <i>Healthy people 2020: Dementias, including Alzheimer's disease</i> . Washington, DC: U.S. Department of Health and Human Services. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/dementias-including-alzheimers-disease	Level VII	Dementia is one of the costliest disease groups to treat and the management of dementia takes a large portion of Medicare resources every year.	Goal of Healthy People 2020 is to reduce the costs of dementia care to the healthcare system	Supports project because nonpharmacological interventions are relatively inexpensive when compared to medications. Can be used in background information to support the need for the project. Limitations: Doesn't specifically address disruptive behaviors or nonpharmacological interventions.
Porsteinsson, A. P., & Antonsdottir, I. M. (2017). An update on the advancements in the treatment of agitation in Alzheimer's disease. <i>Expert Opinion on Pharmacotherapy</i> , 18(6), 611-	Level V	Disruptive behaviors associated with dementia are the most upsetting and costly aspect of dementia care. Nonpharmacological	Nonpharmacological interventions should be attempted first, but effective medication utilization should be	Supports project because it discusses the effectiveness of staff education as well as explores various medication options that can be utilized to treat behavior symptoms associated with dementia. Limitations: Doesn't explore NPIs in great detail because the article is more focused on medications.

<p>620. doi: 10.1080/14656566.2017.1307340</p>		<p>interventions and medications are treatment options.</p>	<p>implemented if NPIs are ineffective.</p>	
<p>Prusaczyk, B., Cherney, S. M., Carpenter, C. R., & DuBois, J. M. (2017). Informed consent to research with cognitively impaired adults: Transdisciplinary challenges and opportunities. <i>Clinical Gerontologist</i>, 40(1), 63-73. doi: 10.1080/07317115.2016.1201714</p>	<p>Level VII</p>	<p>Due to issues related to informed research consent, older adults with cognitive impairments are often excluded from high-quality studies that are not directly related to cognitive impairment, which has led to a dearth of evidence for this population. The challenges to including cognitively impaired older adults in research and the implications of their exclusion are a transdisciplinary issue. The ethical challenges and logistical barriers to conducting research with cognitively impaired older adults are addressed from the perspectives of three different fields—social work, emergency medicine, and orthopaedic surgery.</p>	<p>Given the increasing aging population and the lack of evidence on cognitively impaired older adults, it is critical that researchers, funders, and institutional review boards not be dissuaded from including this population in research studies.</p>	<p>Useful in the limitations of the literature section of paper.</p>

<p>Randall, E. W., & Clissett, P. C. (2016). What are the relative merits of interventions used to reduce the occurrences of disruptive vocalisation in persons with dementia? A systematic review. <i>International Journal of Older People Nursing</i>, 11, 4-17. doi: 10.1111/opn.12083</p>	<p>Level V</p>	<p>Three interventions were found to be supported by statistically significant research: a staff training program, a behavioral management technique using cue cards, and hand massage.</p>	<p>The overall conclusion is that the evidence base is insufficient to make recommendations for practice. However, the studies gave some indication of how research and practice might develop in this area. In particular, five elements were identified that appear to promote the best resident outcomes. These include making sure that interventions are person-centered, individualized, adaptable, with the use of multiple approaches, carried out by staff trained in the identification of disruptive vocalization and ways to avoid triggering these behaviors.</p>	<p>Underscores the importance of person-centered interventions that attempt to address whatever is triggering the resident's behavior.</p> <p>Limitations: Insufficient evidence to make recommendations.</p>
<p>Resnick, B., Kolanowski, A., Haitzma, K. V., Boltz, M., Galik, E., Bonner, A.,...Mulhall, P. M. (2016). Pilot testing of the EIT-4-BPSD intervention. <i>American Journal of Alzheimer's Disease and Other</i></p>	<p>Level VI</p>	<p>Although stakeholders were all very supportive in using behavioral approaches for BPSD, the majority of the stake-holder</p>	<p>Study provides some evidence of the feasibility of EIT-4-BPSD and preliminary efficacy of the approach in terms of decreasing</p>	<p>Supports the use of education and regular interaction with staff to promote the use of nonpharmacological interventions. Attempted to indirectly decrease PRN medication administrations. Useful, since project has similar elements.</p>

<p><i>Dementias</i>, 31(7), 570-579. doi: 10.1177/1533317516662337</p>		<p>team was not actively involved in day-to-day care of residents. Education is helpful for staff, but it is important to spend additional time with staff and find champions to help promote behavioral interventions over pharmacological interventions.</p>	<p>BPSD through the use of behavioral approaches.</p>	<p>Limitations: Limited by sample size and the lack of a control group, the lack of objective assessments of staff behavior, and measurement challenges when evaluating residents with moderate to severe dementia.</p>
<p>Rothberg, M. B., Herzig, S. J., Pekow, P. S., Avrunin, J., Lagu, T., & Lindenauer, P. K. (2013). Association between sedating medications and delirium in older inpatients. <i>Journal of the American Geriatrics Society</i>, 61, 923-930. doi: 10.1111/jgs.12253</p>	<p>Level IV</p>	<p>Study assessed inpatient elderly individuals given medications on the Beers list that had delirium symptoms while in the hospital.</p>	<p>Association was found between several sedative medications and delirium in hospitalized residents.</p>	<p>Supports that there are dangerous side effects associated with using sedating medications in elderly residents.</p> <p>Limitations: Inpatient study that doesn't directly address residents with dementia.</p>
<p>Seitz, D. P., Gill, S. S., Herrmann, N., Brisbin, S., Rapoport, M. J., Rines, J.,...Conn, D. K. (2013). Pharmacological treatments for neuropsychiatric symptoms of dementia in long-term care: A systematic review. <i>International Psychogeriatrics</i>, 25(2), 185-203. doi: 10.1017/S1041610212001627</p>	<p>Level V</p>	<p>Statistically significant improvements in NPS were noted in some studies evaluating risperidone, olanzapine, and single studies of aripiprazole, carbamazepine, estrogen, cyproterone, propranolol, and prazosin. Study quality was difficult to rate in many cases due to incomplete reporting of details. Some studies</p>	<p>Concluded that there is limited evidence to support the use of some atypical antipsychotics and other medications for NPS in LTC populations. However, the generally modest efficacy and risks of adverse events highlight the need for the development of safe and effective pharmacological and nonpharmacological interventions for this population.</p>	<p>While some efficacy for medications was found, conclusion highlights that risks usually outweigh the benefits and that more studies need to be completed on nonpharmacological interventions to treat NPS.</p> <p>Limitations: Focuses solely on medications and does not address nonpharmacological interventions directly, other than to say that more research needs to be done on developing effective nonpharmacological measures in this population.</p>

		reported higher rates of trial withdrawals, adverse events, and mortality associated with medications.		
dtler, A., & Nunez, D. (2015). Nonpharmacological therapy for the management of neuropsychiatric symptoms of Alzheimer's disease: Linking evidence to practice. <i>Worldviews on Evidence-Based Nursing, 12</i> (2), 108-115. doi: 10.1111/wvn.12086	Level V	Nonpharmacological therapy is safe and effective.	A multicomponent caregiver education program focused on evidence-based nonpharmacological strategies for addressing agitation in persons with Alzheimer's disease has the potential to decrease agitation, improve resident outcomes, and increase caregiver satisfaction.	Nonpharmacological interventions are safe and effective. Supports the need for increased care-giver education. Limitations: Some studies did not have statistically significant outcomes when compared to controls, but they all demonstrated a positive trend toward decreasing agitation without any adverse side effects.
Terrery, C. L., & Nicoteri, J. L. (2016). The 2015 American geriatric society beers criteria: Implications for nurse practitioners. <i>The Journal for Nurse Practitioners, 12</i> (3), 192-200. http://dx.doi.org/10.1016/j.nurpra.2015.11.027	Level VII	Details various drugs with changes in recommendations based on the 2015 updates to the Beers criteria.	Antipsychotics and benzodiazepines are both listed as drugs to avoid in older adults with dementia (strong recommendation).	Supports the need for nonpharmacological interventions because medications put residents at increased risks for negative side effects and continued cognitive decline.
United States Government Accountability Office. (2015). <i>Report to Congressional Requesters: Antipsychotic drug use</i> (GAO Ref No. 15-211). Washington, DC: U.S. Government Printing Office.	Level VII	GAO report on antipsychotic use in the elderly. AP's are frequently prescribed to older adults with dementia.	HHS National Alzheimer's Plan needs to be expanded to Assisted Living facilities and to individuals living at home.	Describes the frequency of antipsychotic use in older adults with dementia. Details how many residents arrive to the SNF already on APs that often get continued without evidence for their need. States that the HHS plan needs to be expanded to ALFs and older adults who are still living at home.
Van Der Cammen, T., Rajkumar, C., Onder, G., Sterke, C. S., & Petrovic, M. (2014). Drug cessation in complex older adults: Time for action. <i>Age and Ageing, 43</i> , 20-25. doi: 10.1093/ageing/aft166	Level V	Withdrawal of psychotropic medications reduced fall rate; a prescribing modification	Little research has focused on drug cessation. Available studies showed a beneficial impact of	Supports discontinuing as many medications as possible and using nonpharmacological interventions to improve agitation. Limitations: Not US specific or focused specifically on LTC facilities.

		<p>program for primary care physicians reduced fall risk. Withdrawal of psychotropic medications and a systematic reduction of polypharmacy resulted in an improvement of cognition. Very little rigorous research has been conducted on reducing inappropriate medication prescriptions in residents approaching the end of their life.</p>	<p>cessation of psychotropic drugs on falls and cognitive status. More research in this field is needed. The issue of systematic drug withdrawal in end-of-life cases is controversial, but is increasingly relevant in the face of rising numbers of older people of this clinical status.</p>	
<p>Voyer, P., McCusker, J., Cole, M. G., Monette, J, Champoux, N., Ciampi, A., Belzile, E. & Richard, H. (2015). Behavioral and psychological symptoms of dementia. <i>Journal of Gerontological Nursing</i>, 41(1), 22-37</p>	<p>Level VI</p>	<p>Data indicated that the use of PRN antipsychotic agents is not associated with decreasing BPSD in any way that indicates an informed use of this medication.</p>	<p>The duration and frequency of every behavioral and psychological symptom of dementia (BPSD) fluctuates significantly over time. A BPSD lasts 2 months and 9 days on average. Precipitated measures should be avoided, as these symptoms usually subside without medical treatment.</p>	<p>“Some BPSD are associated with PRN antipsychotic use. The BPSD significantly linked to PRN antipsychotic administration were not the ones effectively alleviated by antipsychotic agents, but rather were those that were viewed as the most disruptive. Results suggest that specific training on the appropriate use of PRN antipsychotic agents is warranted.”</p> <p>**Useful information because use of medication to control annoying behaviors has been observed at the project site**</p>
<p>Wimo, A., Guerchet, M., Ali. G. C., Wu, Y. T., Prina, A. M., Winblad, B.,...Prince, M. (2017). The worldwide costs of dementia 2015</p>	<p>Level V</p>	<p>Worldwide costs of dementia have increased by 35%</p>	<p>Worldwide costs of dementia are enormous and still</p>	<p>Supports the use of nonpharmacological interventions over costlier medications to treat behavioral symptoms of dementia.</p>

<p>and comparisons with 2010. <i>Alzheimer's & Dementia</i>, 13(2017), 1-7. http://dx.doi.org/10.1016/j.jalz.2016.07.150</p>		<p>since 2010, a total of \$818 billion in 2015.</p>	<p>inequitably distributed.</p>	<p>Limitations: More specific data about the causes of the increased costs from 2010 to 2015 need to be collected.</p>
<p>Zuidema, S. U., Johansson, A., Selbaek, G., Murray, M., Burns, A., Ballard, C., & Koopmans, R. T. (2015). A consensus guideline for antipsychotic drug use for dementia in care homes: Bridging the gap between scientific evidence and clinical practice. <i>International Psychogeriatrics</i>, 27(11), 1849-1859. doi: 10/1017/S1041610215000745</p>	<p>Level VI</p>	<p>p. 1854 Article clearly recommends that nonpharmacological interventions be used prior to any antipsychotic medications being given. Even when APs are given, these interventions need to be used in conjunction with the APs.</p>	<p>Practice guideline bridges the gap between evidence and actual clinical practice.</p>	<p>Supports the use of nonpharmacological interventions prior to any psychoactive medications being given to residents with dementia.</p> <p>Limitations: Focus is on medication usage, so nonpharmacological interventions are only mentioned briefly as recommendations.</p>

Appendix D

DNP Project Timeline

Date	Task	Complete/Incomplete
January 2016-2017	Explore project topic	complete
January-July 2017	Review the literature for topic of interest	complete
Jan-March 2017	Define project topic	complete
Jan-March 2017	Explore and define theoretical framework to guide project	complete
Jan-March 2017	Establish project team	complete
Jan-April 2017	Establish how the project will be implemented	complete
Jan-April 2017	Submit biweekly reflective journal entries	complete
Feb 20-23 2017	Attend DNP Intensives	complete
March 2017	Complete and submit Project Proposal, Project Timeline, and submit committee members' CVs	complete
March 2017	Complete ECU CITI Training	complete
April 2017	Complete final paper for DNP 1	complete
April 2017	Submit DNP 1 Progression Form & Semester Time Log	complete
March-April 2017	Contact Dr. Lavoie-Vaughan for permission to use her information to draft a documentation checklist	complete
March-July 2017	Create documentation checklist	complete
March-July 2017	Develop descriptive list of NPIs to distribute to staff	complete
March-July 2017	Plan huddles for nursing staff and interdisciplinary staff	complete
March-July 2017	Submit documentation checklist and brief project description to the administration at project site for corporate approval	complete
May 12-15 2017	Attend DNP Intensives	complete
May-July 2017	Submit project for IRB waiver/approval at ECU, finalize corporate approval at project site	complete
May-July 2017	Draft project budget	complete
July 2017	Draft Discussion information for subsequent huddles and PDSA evaluation tool to use for evaluation during weekly huddles	complete
July 2017	Complete final paper for DNP 2	complete
July 2017	Submit DNP 2 Progression Form & Semester Time Log	complete
August 2017	Administer initial huddle to nursing staff at the project site about NPIs and the documentation checklist	complete
August 2017	Begin huddles with Interdisciplinary staff to educate on nonpharmacological interventions to	complete

	attempt prior to requesting PRN medications from nursing staff	
September 5-8 2017	Attend DNP Intensives	complete
Aug-Nov 2017	Promote checklist usage by the nursing staff and promote nonpharmacological interventions by all staff members	complete
Aug-Nov 2017	Weekly huddles and data collection to evaluate checklist usage	complete
December 2017	Complete final paper for DNP 3	complete
December 2017	Submit DNP 3 Semester Time Log	complete
January 2018	Evaluate checklist compliance and PDSA data using descriptive statistics	complete
February 19-22 2018	Attend DNP Intensives	complete
April 2018	Complete final paper for project	complete
April 2018	Present project outcomes to facility	complete
March 2018	Create poster presentation of DNP project	complete
April 5, 2018	Present Poster to ECU Colleagues	complete
April 2018	Upload final paper into ScholarShip repository	complete
March 2018	Close appropriate IRB approvals	complete
April 2018	Disseminate project information	planning
April 2018	Submit Final Semester Time Log	complete
April 2018	Consider submission of manuscript to appropriate peer review journal	planning

Appendix E - Organizational Support Letter



June 21, 2017

East Carolina University College of Nursing
Doctor of Nursing Practice
Health Science Building
2205 W. 5th St.
Greenville, NC 27889

To Whom It May Concern:

We at The Laurels of Hendersonville have reviewed Jamie Rouse's DNP Project entitled "Nonpharmacological Interventions for Behavior Management in Dementia." Mrs. Rouse has organizational support and full corporate approval to conduct her project within our institution. We understand that for Mrs. Rouse to achieve completion of the DNP Program, dissemination of the project will be required by the University which will include a public presentation related to the project and a manuscript submission will be encouraged.

Our organization has deemed this project as a quality improvement initiative and it DOES NOT require institutional IRB review.

Sincerely,

Victoria Hope,
Administrator

Appendix F



NONPHARMACOLOGICAL CHECKLIST

Directions: This checklist must be completed prior to **any PRN behavior medication administrations to any patient with a dementia diagnosis**. Use the first section to describe the patient's behavior. In Section 2, check all the needs that have been assessed using the checkboxes in the far left column. In Section 3, check the two required nonpharmacological interventions that have been attempted with the patient. Then, list the discipline (i.e. - RN, LPN, CNA, OT, PT, ST, etc.) of the person who reported the completed assessments and interventions in the far right column. Finally, sign the bottom of the sheet with your name, your credentials, the date, and the time that the checklist was completed. No data but your credentials will be collected for the project.

1. DESCRIPTION OF THE PATIENT'S BEHAVIOR

- Symptoms of anxiety or depression - apathy, obvious nervousness, crying, decrease interest in eating or drinking
- Agitation - fidgeting, yelling, screaming, pulling at clothes, repetitive vocalizations, copying other residents
- Aggression - physical or verbal assault, hitting, scratching, throwing things, hair pulling, inappropriate sexual behavior
- Hallucinations or Delusions - seeing or hearing things that aren't there, believing things that aren't true
- Wandering, Exit Seeking
- Sundowning - worsening of behavior symptoms in the evening or at night
- Resisting/Refusing Care
- Other (Write in a description of the behavior):

2. BASIC NEEDS ASSESSMENT - PLEASE VERIFY WHAT NEEDS HAVE BEEN ASSESSED

- | | | | |
|--|-----|---|-----|
| <input type="checkbox"/> Hunger/Thirst | By: | <input type="checkbox"/> Peripheral Edema | By: |
| <input type="checkbox"/> Need to void/Need to have a BM | By: | <input type="checkbox"/> Pain | By: |
| <input type="checkbox"/> Constipation | By: | <input type="checkbox"/> Comfort | By: |
| <input type="checkbox"/> Urinary Retention/UTI symptoms | By: | <input type="checkbox"/> Glasses | By: |
| <input type="checkbox"/> Shortness of breath | By: | <input type="checkbox"/> Hearing Aids | By: |
| <input type="checkbox"/> Changes in breath sounds/Pneumonia symptoms | By: | <input type="checkbox"/> Safety | By: |
| <input type="checkbox"/> Other: | By: | <input type="checkbox"/> Other: | By: |

3. ATTEMPTED NONPHARMACOLOGICAL INTERVENTIONS

- | | | | |
|--|-----|---|-----|
| <input type="checkbox"/> Calming Presence | By: | <input type="checkbox"/> Music Therapy | By: |
| <input type="checkbox"/> Distraction | By: | <input type="checkbox"/> Pet Therapy | By: |
| <input type="checkbox"/> Comfort Food | By: | <input type="checkbox"/> Physical Activity | By: |
| <input type="checkbox"/> Change of Environment | By: | <input type="checkbox"/> Outdoor Activities | By: |
| <input type="checkbox"/> Storytelling/Life Story | By: | <input type="checkbox"/> Aromatherapy | By: |
| <input type="checkbox"/> Reminiscence | By: | <input type="checkbox"/> Therapeutic Touch | By: |
| <input type="checkbox"/> Group/Social Activities | By: | <input type="checkbox"/> Baby Doll Therapy | By: |
| <input type="checkbox"/> Other: | By: | <input type="checkbox"/> Other: | By: |
- No NPIs were attempted, patient's behavior was a danger to him/herself or staff - immediate sedation was needed

4. SIGNATURE

Date PRN Med Given: _____

Time PRN Med Given: _____

Signature

Credentials

References on reverse side of this document

Appendix G

CPG Tables from Dr. Lavoie-Vaughan

Table 1: Common Triggers for Behavioral Problems

- Request for toilet
- Request for food or drink
- Requests are being ignored
- Rejecting staff approach
- Excessive noise
- Recent change in environment
- Rejection of current surroundings
- Misperceiving staff intentions
- Over-stimulation
- Does not like being touch
- Stopped from leaving the building
- Temperature is too hot or too cold
- Staff provide inconsistent approaches
- A particular staff member is unacceptable due to race, gender, age, or skin color
- Copying other residents
- Clothes are ill-fitting or too tight
- Chair is too hard
- Pain
- Odors
- Environmental cues- change of shift, mealtimes
- Feels threatened

Table 3: Descriptive Words for Behavioral Problems

- Hitting
- Kicking
- Grabbing
- Pushing
- Scratching
- Biting
- Spitting
- Choking
- Striking
- Slapping

- Hair pulling
- Throwing objects
- Swearing
- Screaming
- Shouting
- Repetitive vocalizations
- Physical assault
- Verbal sexual advances
- Acts of self-harm
- Verbal assault

Table 5: Algorithm for Assessment of Behavioral Problems

Check Vitals:

- • Temperature, pulse, blood pressure, respiration, oxygen saturation

Physical Assessment:

- • Signs of constipation or urinary retention
- • Changes in breath sounds
- • Peripheral edema
- • Fluid status: orthostatic blood pressure, mucous membranes

Common Sources of Pain:

- • Bed sores, other skin lesions, eye pain from corneal abrasion
- • Joint pain, other musculoskeletal pain, foot pain (poorly fitting shoes)
- • Oral pain related to dentures/mouth ulceration

Sensory:

- • Hearing: check hearing aids, ear wax
- • Vision: check glasses

Urinalysis, or other urinary symptoms

Blood glucose, CBC with differential, electrolytes if appropriate

Drug side effects

Recent changes in environment

Appendix H

Permission Email from Dr. Lavoie-Vaughan

Nanette Lavoie-Vaughan <nursenan1@earthlink.net>
Sun 04/02, 07:19 PM

Jamie

No problem, I look forward to seeing the checklist.
Nanette

Rouse, Jamie Lee <rouseja10@students.ecu.edu>
Sun 04/02, 4:30 PM

Dr. Lavoie-Vaughan,

Hello! I hope this email finds you well!! I wanted to thank you again for your guidance in my project development process. Your tip about the NCBI was very helpful! I've made several revisions to my project proposal and have finally settled on a drafting a new nonpharmacological intervention checklist to implement at my project site.

I wanted to ask for your permission to use some of the information you provided to me in the "Tables for CPG" document as a guide in drafting my checklist. I'm planning to use Maslow's Hierarchy of Needs as well as recommendations from the Alzheimer's Association, but a lot of the inspiration for the checklist came from the information that you sent me. I wanted to be sure to that I secure your permission prior to creating the checklist and I'll be happy to email you a copy once I've completed the document. Please let me know if you need any additional information from me.

Thank you again for your help and the information you've provided to me!!!

Warm Regards,
Jamie Lee Rouse, BSN, RN
DNP Student/AGPCNP Concentration
East Carolina College of Nursing
rouseja10@students.ecu.edu
(252) 814-6572

Appendix I
PDSA Cycle Worksheet

QI Essentials Toolkit: PDSA Worksheet

Template: PDSA Worksheet

Objective:



1. **Plan:** Plan the test, including a plan for collecting data.

Questions and predictions:

- ---

- ---

Who, what, where, when:

Plan for collecting data:



2. **Do:** Run the test on a small scale.

Describe what happened. What data did you collect? What observations did you make?



3. **Study:** Analyze the results and compare them to your predictions.

Summarize and reflect on what you learned:



4. **Act:** Based on what you learned from the test, make a plan for your next step.

Determine what modifications you should make – adapt, adopt, or abandon:

Appendix J

Reminder Flyer for First Huddle at Project Site



Note: This flyer was updated with the information for each subsequent huddle and pinned to the notification board at the facility weekly.


Appendix K

IRB Waiver Letter

**EAST CAROLINA UNIVERSITY**

Office of Research Integrity and Compliance (ORIC)
 University & Medical Center Institutional Review Board (UMCIRB)
 Brody Medical Sciences Building, 4N-70 • 600 Moye Boulevard • Greenville, NC 27834
 Office 252-744-2914 • Fax 252-744-2284 • www.ecu.edu/irb

TO: Jamie Rouse, ECU College of Nursing, DNP Program

FROM: Office of Research Integrity & Compliance (ORIC) 

DATE: June 26, 2017

RE: Doctor of Nursing Practice (DNP) Scholarly Project

TITLE: Nonpharmacological Interventions for Behavioral Management in Dementia

This activity has undergone review on 6/26/2017 by the ORIC. A Doctor of Nursing Practice candidate is planning a quality improvement project at The Laurels of Hendersonville, a long term care facility located in Hendersonville N.C. The purpose of this project is to implement a standardized checklist to increase the utilization of nonpharmacological interventions (NPI) in the management of disruptive behaviors in residents with dementia. Ms. Rouse will ask for feedback on the checklist from staff on a weekly basis and will review checklists to determine use of NPI compared to use of behavior medication. The Laurels of Hendersonville administration has determined this project to be a quality improvement initiative that does not require IRB review and the ORIC agrees.

This activity is deemed outside of UMCIRB jurisdiction because it does not meet the current federal descriptions for human subject research. Therefore, this activity does not require UMCIRB approval. Contact the office if there are any changes to the activity that may require additional UMCIRB review or before conducting any human research activities.

Relevant Definitions for Human Subject Research:

- *Research* means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities
- *Human subject* means a living individual about whom an investigator (whether professional or student) conducting research obtains:
 - (1) Data through intervention or interaction with the individual, or
 - (2) Identifiable private information.

The UMCIRB applies 45 CFR 46, Subparts A-D, to all research reviewed by the UMCIRB regardless of the funding source. 21 CFR 50 and 21 CFR 56 are applied to all research studies under the Food and Drug Administration regulation. The UMCIRB follows applicable International Conference on Harmonisation Good Clinical Practice guidelines.

Appendix L

Excel Data Collection Tool

	B	C	D	E	F	G
1						
2	NPI Project Data Collection Tool					Jamie Lee Rouse, BSN, RN
3						
4	Total # of PRN meds given					
5	Total # of NPI Checklists completed					
6						
7	Date PRN Given	Time PRN Given	Nurse Credentials	NPI Checklist Completed?2	Was no NPI attempted checked?	Notes, to include other disciplines listed on NPI Checklist
8						
9						
10						
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25						

Appendix N

NPI Reference List



Nonpharmacological Intervention Reference

The following table gives brief descriptions/suggested interventions that correspond with Section Three of the Nonpharmacological Checklist. Please attempt at least two of these interventions with patients prior to requesting a PRN behavior medication.

NPI Intervention Name	Suggested Intervention Actions
Calming Presence	Use a soothing tone of voice, make eye contact, get on their level, use open body language, calming touch (if patient will tolerate touch), reassure, offer comfort
Distraction	Turn on the TV or radio, talk to the patient about something other than what is upsetting them
Comfort Food	Offer the patient favorite foods or beverages when possible, see if the family has brought any food/beverage items for patient
Change of Environment	Take patient to their room, take them out of their room, remove them from the source of their agitation, take them outside
Storytelling/Life Story	Ask the patient to tell you a story about themselves or their family; ask them about a life milestone – wedding, job, birth of grandchild, etc.
Reminiscence	Use what you know about the patient to make a connection, use family pictures or familiar objects to make a connection
Group/Social Activities	Music, singing, arts & crafts, bible study, bingo, eating in the dining room
Music Therapy	Individualized/familiar music, nature sounds, interactions with a certified music therapist
Pet Therapy	Visits from pet therapy animals on site, visits from patient's pet
Physical Activity	Restorative therapy, transferring the patient out of bed, pushing the patient around in their wheelchair, assisting the patient with a walk
Outdoor Activities	Take patient outside, visits with family outside, outdoor PT activities
Aromatherapy	Use of pleasant scents that the patient prefers such as lotions, perfumes, soaps; Lavender
Therapeutic Touch	Gentle massage of the hands or feet, only if the patient doesn't have an aversity to being touched
Baby Doll Therapy	More effective in female patients. A small group of baby dolls will be donated as part of the project; may give one to any patient that may benefit from a sense of utility provided by caregiving. Any questions about this type of intervention – please contact Jamie Rouse.

References on reverse side of this document

Appendix O

Nonpharmacological Intervention Project Guide for Staff



Nonpharmacological Intervention Project

*What is the NPI project? This is the graduation project of DNP Nurse Practitioner Student, Jamie Rouse. This project hopes to determine if requiring the documentation of nonpharmacological interventions (NPIs) will increase their use in residents with dementia. All staff that provide direct care to patients (Nurses, CNAs, and therapy staff) will be asked to participate. Staff will be asked to attempt two NPIs prior to the administration of any PRN behavior medications in patients with dementia. Nurses will be asked to complete a NPI checklist to determine what interventions were tried with the patient prior to the administration of a PRN behavior medication. This project will occur over a 12 week period starting on Friday, August 25th. **Your participation in this project is greatly appreciated!! Any questions or concerns on non-huddle days – contact Jamie Rouse at rouseja10@students.ecu.edu.***

1. How will I know what to do?

- a. There will be weekly floating huddles for nurses, CNAs, and therapy staff. Huddles will typically occur on Mondays or Fridays, but may occasionally occur on other days as well.
- b. These huddles will be short and painless, attempting to take up as little of your time as possible.
- c. The first huddles will be on Friday, August 25th and may take a little longer than future huddles. These first huddles will explain the project in detail, provide resources for staff use, and provide an opportunity for staff to ask questions.
- d. All huddles will offer staff an opportunity to provide feedback on the project tools and processes. Changes will be made as needed based on staff feedback.
- e. Please share the details of the project purpose, goals, and information gained during huddles with staff that are unable to attend.
- f. **Refreshments/snacks will be provided on huddle days ☺.**

2. What is my role?

- a. Nurses – as the individuals who administer medications, you will be asked to attempt NPIs when they have not been completed by another discipline. More importantly, you will be asked to complete the NPI checklist (the method for data collection) prior to administering a PRN behavior medication to any patient with dementia.
- b. CNAs – attempt to complete 2 NPIs with a patient prior to requesting a PRN behavior medication from the nurse for a patient with dementia. Report attempted NPIs to the nurse for the patient so that they can be documented on the checklist.
- c. Therapy staff - attempt to complete 2 NPIs with a patient prior to requesting a PRN behavior medication from the nurse for a patient with dementia. Report attempted NPIs to the nurse for the patient so that they can be documented on the checklist.

- 3. How will I know what patients need to have the NPI checklist completed?**
 - a. Each patient that is qualified for inclusion in the project will have an alert on their MAR reminding nurses to complete the checklist when appropriate.
 - b. The patient inclusion criteria are: any patient with any dementia diagnosis that is not at the facility for Rehab and does not have a history of a serious mental health disorder (i.e. – Bipolar, Schizophrenia, personality disorders, etc.)
 - c. CNAs/Therapy staff: if the patient is known to have a dementia diagnosis, always complete NPIs first. If you are unsure, ask the patient's nurse.
- 4. How will I know if a medication is considered a "PRN behavior medication"?**
 - a. Any PRN medication that is ordered for agitation, anxiety, or behavior management is considered a PRN behavior medication.
 - b. If you are choosing to give the PRN medication because of the patient's behavior.
- 5. What NPI resources will be available in addition to those already in use at the facility?**
 - a. There are numerous NPI options that are already available for staff to utilize at the facility and most of you use these interventions every day! The key to this project is getting these interventions documented and making sure that they are attempted prior to PRN behavior medications being administered.
 - b. You will be provided a detailed list of NPIs that can be utilized in patients with dementia. See the NPI Reference document provided.
 - c. A limited number of baby dolls will be purchased for use with residents at the facility; these baby dolls will be kept in the office of Mary Beth Coulman. Please make sure that your patient is a good candidate for baby doll therapy before requesting a doll from Ms. Coulman.
 - i. Baby doll therapy is typically appropriate in female dementia patients who exhibit a desire to provide care or who specifically discuss having a "baby".
 - ii. Once a baby doll has been issued to a patient, it belongs to that patient and should only be taken away if the presence of the doll seems to increase the patient's agitation.
 - d. With permission from administration, hypoallergenic Lavender lotion will also be provided. Large multi-use bottles of lotion will be kept at the nurse's station for use as an aromatherapy NPI by the staff. Please make sure that your patient doesn't have any known skin allergies prior to applying the lotion.

Appendix P

NPI Project Step-by-Step Guide for Nurses



NPI Project Step-by-Step Guide for Nurses

Where to start...

Step One-Recognize that a patient is qualified for the NPI project: You have a patient who fits the project criteria that begins displaying disruptive behavior and you may need to administer a PRN behavior medication

- *Qualified patients include: Any patient with any dementia diagnosis that is not at the facility for Rehab and does not have a significant psych history (such as Bipolar or Schizophrenia)*
- *All qualified patients (approx. 40) will have an alert on their MAR as of Monday 8/28 to notify nurses that the patient is qualified for the NPI project*

Step Two-Verify the NPIs (Nonpharmacological Interventions) that have been completed with the patients or complete 2 NPIs

- *Ask any reporting staff such as CNAs or therapy staff what NPIs have been attempted with the patient*
- *If two NPIs have not been completed, instruct reporting staff to complete appropriate NPIs or actively complete NPIs with the patient*





Step Three-NPIs have been attempted without success, complete the checklist and administer the medication

- *Complete the NPI checklist with the date/time that the PRN Med was given to the patient, sign the checklist with your credentials (LPN or RN)*

Step Four-Place the completed NPI checklist in the patient's hard chart in the nursing section

Appendix Q

Template for Laminated Cards

 <p>Before you administer any PRN Behavior Medication, please complete the Nonpharmacological Checklist on patients with dementia. Thank you so much for your cooperation with this QI project!!</p>	 <p>Before you administer any PRN Behavior Medication, please complete the Nonpharmacological Checklist on patients with dementia. Thank you so much for your cooperation with this QI project!!</p>
 <p>Before you administer any PRN Behavior Medication, please complete the Nonpharmacological Checklist on patients with dementia. Thank you so much for your cooperation with this QI project!!</p>	 <p>Before you administer any PRN Behavior Medication, please complete the Nonpharmacological Checklist on patients with dementia. Thank you so much for your cooperation with this QI project!!</p>

Appendix R
Project Budget

DNP Project Budget Jamie Lee Rouse, BSN, RN

Estimated project budget	\$2,000.00	\$2,000.00
Total cost of the DNP Project	\$1,370.25	\$1,370.25
You're under budget by	\$629.75	

Item	Description	Cost	Qty	Amount	Notes
Mileage	From home to site	\$0.54	825	\$445.50	From Maggie Valley to Hendersonville for 15 days (55 miles one way)
Mileage	From site to home	\$0.54	825	\$445.50	From Hendersonville to Maggie Valley for 15 days (55 miles one way)
Materials	Printing/laminating services	\$50.94	1	\$50.94	Costs to print materials for project
Materials	Project Supplies	\$67.36	1	\$67.36	Costs to purchase baby dolls, lavender lotion, paper holders, etc. for project site
Gifts	Snacks for Huddles	\$223.95	1	\$223.95	Snacks to show appreciation to Laurels staff
Gifts	Gifts for Team Members	\$50.00	1	\$50.00	Gift for Committee Member to thank them for participation in project
Cell Phone	Cell phone usage	\$4.35	20	\$87.00	Amount of bill per day; approximately 20 total days
Total				\$1,370.25	

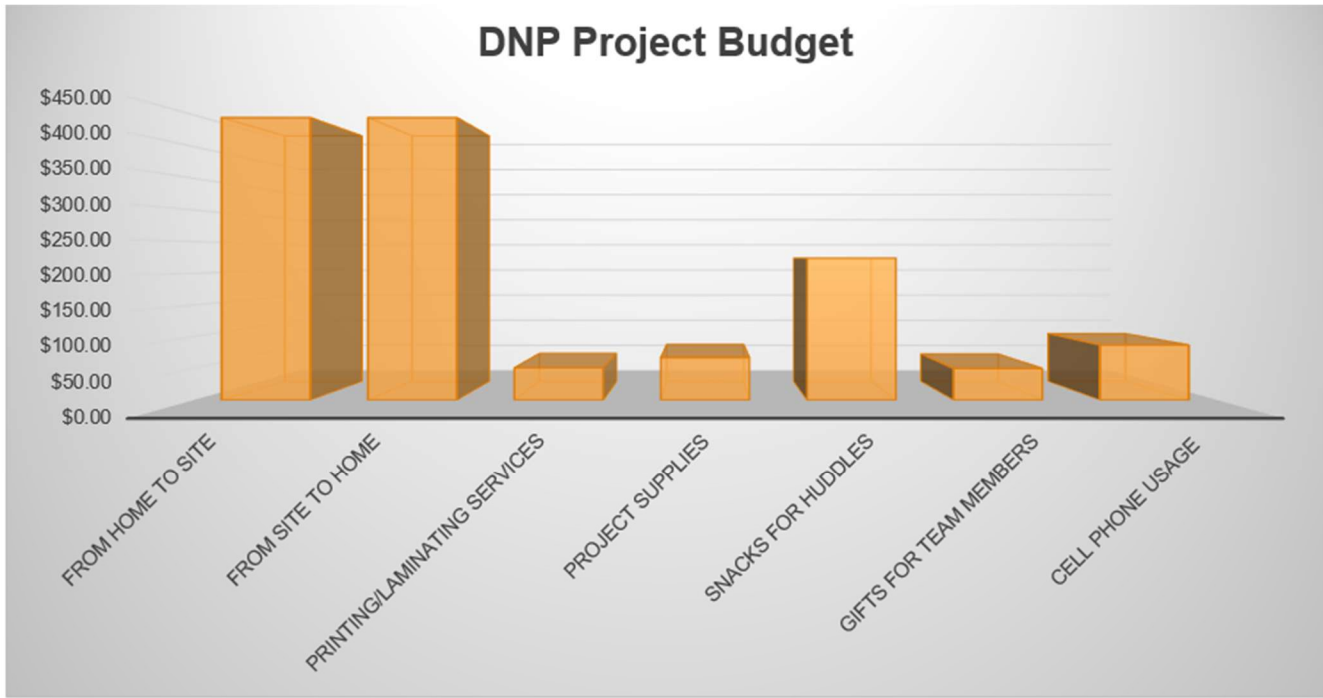


Table 1

Project Data – Percentage of NPIs Completed by Each Specialty

Staff Group	Percentage of NPIs Administered
Nursing staff	52 (55%)
CNAs	38 (40%)
Therapy staff	5 (5%)
Total	95 (100%)

Note: This table outlines the percentage of NPIs completed by each specialty as captured by documentation on the NPI Checklists.

Table 2

Project Data – Checklist Compliance Rate

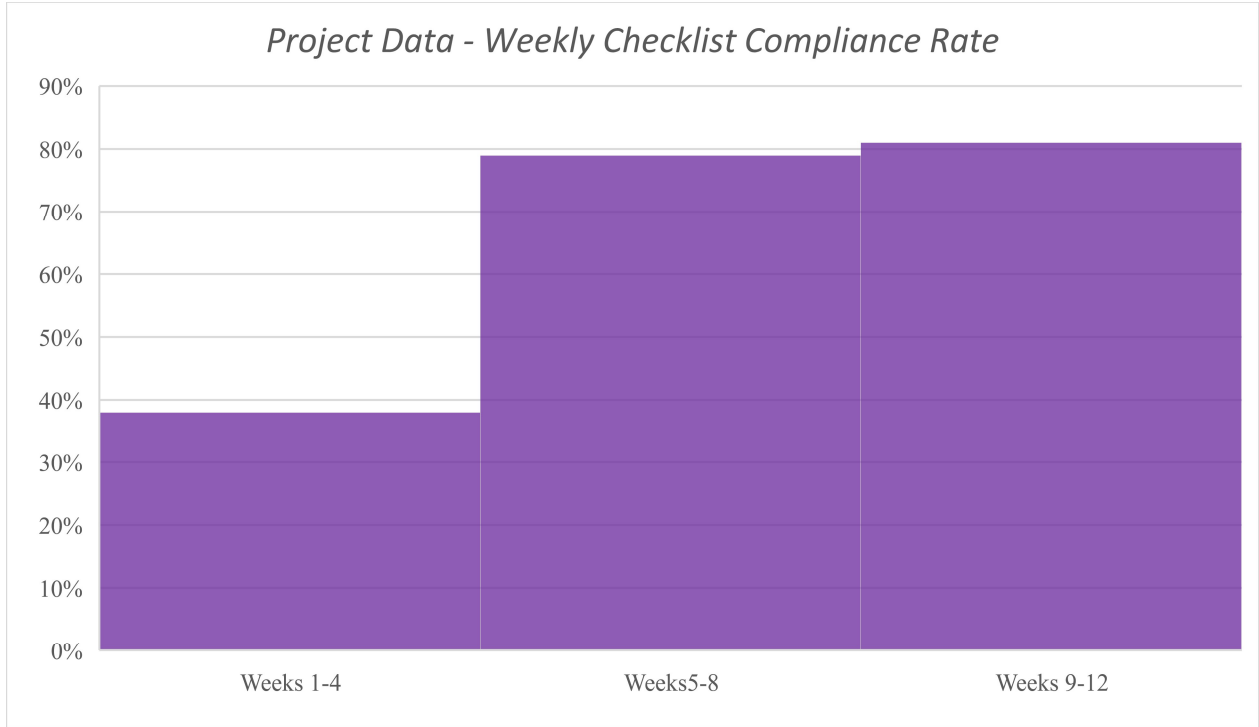
	Opportunities n (%)
Checklist completed	23 (70%)
Checklist not completed	10 (30%)
Total	33 (100%)

Table 3

Project Data – Checklist Compliance Rates by Nurses

	RN	LPN	Totals
Opportunities	2	31	33
Checklists completed	2	21	23
Percentage Totals	100%	68%	70%

Graph 1



Weekly Checklist Compliance Percentage		
	Opportunities – n	Completion – n (%)
Weeks 1-4	8	3 (38%)
Weeks 5-8	14	11 (79%)
Weeks 9-12	11	9 (81%)
Final Compliance Rate	33	23 (70%)