IMPLEMENTATION OF AN EVIDENCE-BASED PAIN ASSESSMENT PROTOCOL IN A NURSING HOME SETTING

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ABSTRACT

Jingwen Hua: Implementation of an Evidence-Based Pain Assessment Protocol in a Nursing Home Setting
(Under the direction of Anna Beeber)

Pain is under-recognized and under-treated among nursing-home residents. The lack of standardized protocols for the assessment of pain among this population makes the issue difficult to address. This Doctorate of Nursing Practice project took place on the skilled- and assisted-nursing floors of a continuing care retirement community, aiming to develop an evidence-based pain assessment protocol and educate nursing staff regarding its use. 44% of nurses participated in the face-to-face training program while an additional 13% completed the training online. Chart review and direct observation of shift change was completed at baseline and after implementation to assess the impact of the protocol and training on pain-related documentation and communication. Findings showed that nurses' knowledge and attitude survey scores, the frequency of pain documentation in the electronic medical record, and the comprehensiveness of pain communication at shift report did not improve post-implementation. However, qualitative improvements were noted in the comprehensiveness of pain documentation post-implementation. Electronic charting limitations, resident cognitive deficits, staff turnover, and difficulty of change were cited by nurses as major barriers. Opportunities for future program improvements are discussed.

To my mentor and friend, thank you.

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LIST OF ABBREVIATIONS

ADL	Activities of daily living
AGS	American Geriatrics Society
AHEC	Area Health Education Center
ASPMN	American Society for Pain Management Nursing
BSN	Bachelor of Science in Nursing
CCRC	Continuing Care Retirement Community
CMS	Centers for Medicare and Medicaid Services
CNA	Certified nursing assistant
CWRC	Carol Woods Retirement Community
DHHS	Department of Health and Human Services
DNP	Doctor of Nursing Practice
EMR	Electronic medical record
FFA	Force-field analysis
IASP	International Association for the Study of Pain
IHI	Institute for Healthcare Improvement
IRB	Institutional Review Board
KASRP	Knowledge and Attitude Survey Regarding Pain
LPN	Licensed practical nurse
MMSE	Mini-Mental State Exam
MSN	Master of Science in Nursing
NKASRP-C	Nurses' Knowledge and Attitude Survey Regarding Pain – Chinese version
NRS	Numerical Rating Scale

NSAID	Non-steroidal anti-inflammatory drug
PAINAD	Pain Assessment in Advanced Dementia
PDSA	Plan-Do-Study-Act
PhD	Doctor of Philosophy
RN	Registered nurse
QI	Quality improvement
SON	School of Nursing
UNC	University of North Carolina

CHAPTER 1: INTRODUCTION

Pain is not a normal part of aging; however, chronic pain is a common phenomenon among older adults. Adults over the age of 60 are twice as likely as those under 60 to have pain (Cavalieri, 2005), and pain is especially prevalent in nursing homes, where an estimated 74% to 83% of residents have pain (Könner et al., 2015; Tse, Vong, & Ho, 2012; Zanocchi et al., 2008). According to the American Geriatrics Society (AGS), common causes of chronic pain in the elderly include musculoskeletal disorders, chronic disease, and malignancies (American Geriatrics Society, 2009). Poorly controlled pain in older adults can lead to a variety of negative outcomes, including but not limited to depression, anxiety, social isolation, sleep disturbance, cognitive changes, functional loss, and increased healthcare cost and utilization (AGS, 2009; Cavalieri, 2005; Denkinger, Lukas, Nikolaus, Peter, & Franke, 2014; Herr & Garand, 2001; Zanocchi et al., 2008). In addition, older adults tend to have pain at multiple sites, which further increases debilitation and suffering (Malec & Shega, 2015).

Despite the negative outcomes associated with poor pain management and the high prevalence of pain among the older adults, pain remains under-recognized and under-treated in this population (Planton & Edlund, 2010). Older adults experience complex and atypical manifestations of pain, and tend to have multiple comorbidities that can complicate assessment and treatment. Older adults are also more likely to be affected by cognitive impairment: among Americans 71 years or older, the prevalence of cognitive impairment without dementia is estimated at 22.2%, while the prevalence of dementia is estimated at 13.9% (Plassman et al.,

2008; Plassman et al., 2007). Cognitive impairment can affect one's ability to use existing pain scales to report pain to providers, and those with severe impairment are significantly hindered in their ability to understand and complete self-report pain scales (AGS, 2009; Hadjistavropoulos, 2005). Some studies suggest that even when pain is actively reported by nursing home residents, as many as half who desire pain medication may not receive it (Cadogan et al., 2006).

On a systems level, there exists a lack of evidence regarding the safety and efficacy of pharmacological options for older adults; even though older adults account for a large proportion of the disease burden in America, they are underrepresented in clinical trials (Herrera et al., 2010; Topinková, Baeyens, Michel, & Lang, 2012). Some studies exclude participants on the basis of age alone, while others have exclusion criteria that disproportionately affect older adults; communication difficulties, mobility and transportation issues, and financial constraints can also impact the participation of this population (Herrera et al., 2010; Topinková et al., 2012). Additionally, many institutions lack standardized protocols for the management of pain (Rastogi & Meek, 2013). Provider-related barriers include lack of training on pain assessment and diagnosis, as well as treatment options and side effects; provider fears and biases, particularly regarding addiction, dependence, and drug toxicity also hinder effective pain management in older adults (Rastogi & Meek, 2013).

In the nursing home setting, the factors that can complicate pain management in the older adult population are magnified. The most recent report from the Centers for Medicare and Medicaid Services (CMS) estimates that more than 60% of nursing home residents in the United States had moderate or severe cognitive impairment, which is much higher than the overall rates discussed previously (2015). Similarly, almost half of nursing home residents have a diagnosis of depression, compared to only 5% of the community-dwelling elderly population (Fiske,

Wetherell, & Gatz, 2009; Harris-Kojetin et al., 2016). Concurrent pain and depression can make management of both extremely difficult (Cocksedge, Shankar, & Simon, 2016).

The issue of chronic pain in older adults residing in nursing homes will likely become more pressing in the coming years. As more Americans from the baby boomer generation reach retirement age, the United States Census Bureau (2014) estimates that the number of Americans aged 65 or older will increase from ~48 million, or 15% of the total population, in the year 2015 to ~88 million, or 22% of the total population in 2050. Additionally, older adults have more comorbidities than ever before; in 1987, approximately 30% of Medicare beneficiaries had five or more comorbidities, compared to 50% in 2002 (Thorpe & Howard, 2006). As briefly discussed above, comorbidities can both cause and complicate the assessment and management of pain in this population.

Project Purpose

The purpose of this Doctor of Nursing Practice (DNP) project was to develop and implement an evidence-based pain assessment protocol to standardize and improve the assessment of pain in residents of the nursing home component of a continuing care retirement community (CCRC). The project included three key objectives. First, development of a pain assessment protocol, which systematically guides staff through the pain assessment process. Second, education and training for staff regarding use of the protocol. Third, use of standardized pain assessment tools by staff.

This pain assessment protocol served as the first step in improving the pain management practices for older adults living in the CCRC. The outcomes of this project included: participation in training on how to use the pain assessment protocol, documented use of a standardized pain assessment tool, improvements in staff knowledge and attitudes about pain

assessment, and improvements in the rate of pain assessments documented. By initiating the use of a standardized pain assessment tool, the DNP student hoped to assist the CCRC with achieving their overall goal of better pain management for their residents.

This quality improvement (QI) project was impactful in two main ways. First, the assessment protocol developed for this this project could potentially be applied to other nursing homes, which would help disseminate evidence-based practice in these settings. Second, this DNP project was part of a larger partnership between the University of North Carolina School of Nursing (UNC-SON) and CWRC; this will be discussed in in greater detail in Chapter 4. The QI process strengthened the partnership between these two organizations and also laid the groundwork for future QI projects performed by UNC-SON students.

CHAPTER 2: REVIEW OF THE LITERATURE

This review of literature seeks to summarize the current published research that is relevant to this DNP project. Overall, there is a lack of high-quality research studies of chronic pain management in nursing homes, and many studies measure improvements in processes, such as nurse attitudes or charting, rather than improvements in resident outcomes, such as pain scores or adverse events (Herman, Johnson, Ritchie, & Parmelee, 2009). It is also important to note that many of the articles referenced in this review of literature discuss research conducted internationally. Differences in cultural attitudes likely exist and potentially lower the applicability of those findings to nursing homes in the United States. However, the literature presented here represents the best available evidence and is thus still informative for the purposes of this DNP project.

Definition of Terms

The International Association of Gerontology and Geriatrics and American Medical Directors Association foundation defined a nursing home as a "facility with a domestic-styled environment that provides 24-hour functional support and care for persons who require assistance with [activities of daily living (ADLs)] and who often have complex health needs and increased vulnerability" (Sanford et al., 2015). Older adults are generally defined in research as individuals who are 65 years of age and older. The International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (1994, p. 210). The

definition of chronic pain, however, is not clear-cut and must be flexible depending on the etiology of pain. A generally accepted definition for chronic pain is pain that persists past the time of normal healing. For research purposes, pain that persists past 6 months is generally considered chronic pain (IASP, 1994). Pain assessment refers to the process in which a staff member evaluates and attempts to quantify the quality, intensity, and effect of the resident's pain. Pain treatment refers to the use of pharmacologic and non-pharmacologic therapies by staff with the intention of reducing a resident's pain. Pain management refers to the overall manner in which the institution addresses the issue of pain, and includes both assessment and treatment.

Overview of the Problem

Poorly managed chronic pain is a common and serious problem for older adults in nursing homes. Estimates for the prevalence of chronic pain in nursing home residents are as high as 83%, and as many as 40-68% of residents who report pain and desire analgesics receive none at all, suggesting that a large proportion of nursing homes residents may be suffering needlessly (Cadogan et al., 2006; Zanocchi et al., 2008; Zwakhalen, Koopmans, Geels, Berger, & Hamers, 2009). Higher pain intensity is associated with greater limitations in ADLs, recreational and social activities, and mobility (Takai, Yamamoto-Mitani, Okamoto, Koyama, & Honda, 2010). Thus, addressing the issue of chronic pain management is a top priority to improve the quality of care and quality of life for older adults residing in nursing homes.

Furthermore, pain management by nursing homes is required by the Department of Health and Human Services and CMS as part of the F309 Quality of Care standards (DHHS & CMS, 2009). F309 requires documentation of a resident's plan of care, including pain assessments and reassessments (DHHS & CMS, 2009). Nursing homes are evaluated for: 1)

comprehensive assessment, 2) updated plans of care, and 3) evaluation of effectiveness of interventions, and revising of ineffective interventions as appropriate (DHHS & CMS, 2009).

Current Recommendations and Gaps in the Evidence

Gaps remain between actual and best practice in the management of persistent pain in older adults. First, there is no consensus on one standardized scale for use in the assessment chronic pain in nursing home residents. Second, there are no clear guidelines on how to treat pain in this population.

Lack of consensus on assessment tool.

Although a few professional organizations and expert panels, such as the American Geriatrics Society (2002, 2009) and the American Society for Pain Management Nursing (ASPMN) (Herr, Coyne, McCaffery, Manworren, & Merkel, 2011) have published pain assessment recommendations for the older adult population, there is no single standardized tool that is recommended for use in the assessment of chronic pain in nursing homes residents. The current evidence-based recommendations regarding self-report and behavior-based scales will be discussed below.

Self-report scales.

Self-report pain assessments involve asking the nursing home resident directly about their pain (Cohen-Mansfield & Lipson, 2008). The AGS 2009 guidelines and the ASPMN 2011 position statement both state that resident self-report, even in residents with mild to moderate cognitive deficit, should be the initial method for assessment of a resident's pain experience (AGS, 2009; Herr et al., 2011). A self-report pain assessment should include an assessment of the intensity of the pain, as well as its effect on the resident's functional status (AGS, 2002). Resident self-report pain scales are fairly easy to administer in cognitively intact residents. A

variety of self-report pain scales are available for use; a few examples include the Numeric Rating Scale (NRS), the Verbal Descriptor Scale (VDS), or the Functional Pain Scale (FPS) (Cohen-Mansfield & Lipson, 2008). Neither the AGS nor the ASPMN recommends a specific self-report tool for broad use (AGS, 2009; Herr et al., 2011).

Behavior-based scales.

Behavior-based scales use an observer to assesses the nursing home resident for the presence of certain pain behaviors and are particularly useful for individuals who have cognitive impairments (Cohen-Mansfield & Lipson, 2008). There exist a number of behavior-based pain assessment scales intended to quantify resident behavioral responses to pain. The 2002 AGS guidelines recommend that the behavioral assessment of geriatric pain cover the following domains: 1) facial expressions, such as frowning or grimacing, 2) verbalizations and vocalizations, such as sighing or grunting, 3) body movements, such as guarding or fidgeting, 4) changes in interpersonal interactions, such as aggression, resistance to care, or decreased levels of interaction, 5) changes in activity patterns or routines, such as refusal of meals, or increased wandering, and 6) mental status changes, such as confusion, irritability, or crying (AGS, 2002). As previously stated, there is a lack of consensus from professional organizations and expert panels regarding the specific behavioral assessment tool that best serves this population. Several studies evaluating pain assessment tools for older adults with cognitive impairments have concluded that there was insufficient evidence to recommend any one tool over others in clinical practice; while a number of them are promising, none have sufficiently strong reliability and validity to be broadly recommended (Bjoro & Herr, 2008; Closs et al., 2016; Lichtner et al., 2014).

Lack of clear guidelines for pharmacological treatment.

In addition to the lack of consensus on a pain assessment scale, there is also a general lack of consensus on the pharmacological agents that should be used to treat pain in nursing home residents. Most recommendations include acetaminophen as a first-line agent for older adults with pain, citing the relative lack of absolute contraindications and the relative safety of the medication in doses that do not exceed 3-4 grams per day (Abdulla et al., 2013; AGS, 2009; Herr et al., 2011; Makris, Abrams, Gurland, & Reid, 2014). However, beyond acetaminophen, there appear to be no firm recommendations for other types of medications, so it is unclear what clinicians should do if acetaminophen therapy is not effective.

In regards to analgesic modalities such as non-steroidal anti-inflammatory drugs (NSAIDs) and opioid pain medications, professional organizations are quite hesitant to advocate for their use in the older population, and instead focus largely on the risks and possible side effects (Abdulla et al., 2013; AGS, 2009; Makris et al., 2014). However, there is research suggesting that the risks for adverse events related to non-acetaminophen analgesic use in older adults may not be so significant. In a large cross-section study of over 20,000 elderly nursing home residents with persistent non-malignant pain across 10 U.S. nursing homes, researchers found that the use of NSAIDs in nursing home residents with severe pain was not significantly associated with gastrointestinal bleed, congestive heart failure, peripheral edema, or renal failure (Won et al., 2004). Additionally, residents who used opioids were not significantly more likely to have constipation, falls, unsteady gait, or delirium compared to residents receiving no analgesics (Won et al., 2004). Despite this evidence, pharmacological interventions are still underused. Nursing home staff may be overly fearful of the adverse effects for non-acetaminophen analgesics, leading to the under-treatment of pain in nursing home residents.

One of the specialties in which there are clear guidelines for pain management is oncology. The National Comprehensive Cancer Network (NCCN) has an extensive guidelines on the management of adult cancer pain, including recommendations on pain scales, agents of choice, dose adjustments for older adults, and regimen titration (2018). The NCCN states that pain management is an essential part of oncology care, and acknowledge that older adults are at risk for under-treatment of pain (NCCN, 2018). The prevalence of oncological diagnoses in American nursing homes is estimated between 4-26%, and is likely to increase in the coming years (Drageset, 2012, 2014; Rodin, 2008). Thus, including oncologic diagnoses and its associated pain are important to improving pain management in nursing homes.

Barriers and Facilitators to Pain Management

Aside from the challenges presented by the lack of standardized management protocols and assessment tools, other barriers hinder the effective management of chronic pain in nursing home residents. First, the knowledge and attitudes of nursing home staff regarding pain influences whether they conduct pain assessments on residents (Ben Natan, Ataneli, Admenko, & Har Noy, 2013). Second, it is more difficult to assess pain in nursing home residents with cognitive impairment, and there is a high prevalence of cognitive impairment in the nursing home setting (Ersek, 2012). Third, nursing home staff may not be documenting on resident pain with enough frequency or comprehensiveness, which may hinder pain management efforts by the healthcare team (Jablonski & Ersek, 2009).

Barrier: staff knowledge and attitudes about pain.

Nurses' knowledge and attitudes have been found to influence their day-to-day practice, affecting the staff's intentions and behaviors. For example, in an Israeli study, nurses who were less knowledgeable about pain had lower intention to perform pain assessments and lower rates

of actual performance of pain assessments (Ben Natan et al., 2013). The study also found that nurses with a negative attitude towards older adults had significantly lower intention to perform pain assessments, as well as and lower actual performance of pain assessments (Ben Natan et al., 2013). The education levels of nursing staff appear to be connected to the knowledge and attitudes of staff regarding pain: in a study of 178 nursing students and faculty in Texas, researchers found a direct correlation between the level of nursing education and the percentage of correct scores that respondents provided on the Knowledge and Attitude Survey Regarding Pain (KASRP); with nurses who received lower levels of nursing education scoring worse (Duke, Haas, Yarbrough, & Northam, 2013). This research suggests that the education, knowledge, and attitudes of nursing home staff regarding pain may be a point of intervention to improve pain management.

Facilitator: staff education.

As discussed above, the experiences, attitudes, and education of nurses and other nursing home staff influences their performance of pain assessments (Ben Natan et al., 2013). Several studies have shown that staff education can be effective at changing staff knowledge and beliefs regarding pain. In a small pilot study in a nursing home in Arizona, 24 staff members, including certified nursing assistants (CNAs), RNs, licensed practical nurses (LPNs), social workers, and dietary workers, attended educational sessions that were part of an intensive on-site training on pain management; the didactic modules included education on comprehensive pain assessment and both pharmacological and non-pharmacological pain interventions, as well education on resident-centered care, behavior management, and interpersonal connection (Long, 2013). In a pre-and-post test design, the researchers measured the knowledge and attitudes of the staff before and after the training using the Pain Questionnaire for CNAs and the Pain Questionnaire for

Professional Staff; the main results of the study found that the participating staff demonstrated a significant improvement in knowledge of and attitudes towards pain management after completing the trainings (Long, 2013). In a randomized controlled study involving 147 staff in 10 nursing homes in Hong Kong, staff in the intervention group participated in an "integrated pain management program," in which they received one hour of on-site pain education per week for 8 weeks; content for education included the mechanisms and impact of pain in older adults, pain assessment and treatment, as well as stretching and strength techniques intended for staff self-care (Tse et al., 2012). Staff in the control group did not participate and provided usual care (Tse et al., 2012). Staff completed the Nurses' Knowledge and Attitude Survey Regarding Pain – Chinese version (NKASRP-C) before and after the intervention, and the study found an improvement in NKASRP-C score in the intervention group (Tse et al., 2012).

Staff education about pain and pain management in older adults may also be effective at changing staff behaviors. In a quality-improvement (QI) initiative at a Texas long term care community, 68 staff attended a 2-hour educational workshop on pain management that focused on the recognition, assessment, and treatment of pain in older residents (Reid, O'Neil, Dancy, Berry, & Stowell, 2015). A six-question survey, including two Likert-scale questions asking staff to rate their own confidence and four multiple-choice questions testing knowledge, was administered pre- and post-intervention; researchers also completed chart reviews pre-intervention and at 3 and 8 months post intervention to measure changes in behavior. The findings showed that the workshop significantly increased both knowledge and confidence, and chart review demonstrated significant improvements in documentation of comprehensive pain assessments and use of targeted pain assessment tools in residents with cognitive impairments. Unfortunately, this study did not report data on the pain scores of residents, so it is not known

whether these educational activities translated to better pain control for residents; additionally, researchers did not report on the sustainability of these changes. However, this QI project is promising because the researchers were able to improve confidence, knowledge, and documentation behaviors with a relatively short education intervention.

Barrier: resident cognitive impairment.

Cognitive impairment may be a barrier to pain management for multiple reasons. First, it is difficult to assess pain in residents with cognitive impairment (Herr et al., 2011). Second, even when residents with cognitive impairments do report pain, they are less likely to be treated (Monroe et al., 2014).

Pain assessment in residents with cognitive impairment.

The hierarchy of pain assessment techniques recommended by the American Society for Pain Management Nursing (ASPMN) for residents who are unable to self-report pain include:1) resident self-report - efforts should be made to obtain self-report of pain from all patients if at all possible, as any positive response provided by the resident may be useful (Bjoro & Herr, 2008);2) clinician assessment – clinicians should search for potential causes of pain, meaning that comorbid conditions or procedures known to cause pain should trigger an intervention even if resident behaviors do not seem to indicate pain (Herr et al., 2011); 3) resident behaviors using a behavior-based pain scale (Herr et al., 2011); 4) proxy reporting by family or staff; and 5) analgesic trial. For the analgesic trial, providers commonly begin with scheduled acetaminophen; clinicians can assume that any reduction in resident behaviors after treatment for pain is related to pain control (Bjoro & Herr, 2008; Herr et al., 2011).

There is a lack of a clear consensus on the specific pain tools that should be used to assess pain in nursing home residents with dementia, in part because there is a lack of research

on this topic (Ersek, 2012). Even though there is a dearth of quality literature involving this resident population, some experts advise caution when studying pain in this population, since the lack of a reliable and valid pain scale means the data collected may not be meaningful (Ersek, 2012). Other studies specifically exclude residents with cognitive impairments from participation, likely as a way to simplify their design and avoid the challenge of assessing pain in nursing home residents with cognitive impairments (Tse, Tang, Wan, & Vong, 2014; Tse et al., 2012). Studies that do address pain nursing home residents with dementia use a variety of different pain assessment tools, such as the Numeric Rating Scale (NRS) (Malara et al., 2016), informant report (Ersek et al., 2016), the Mobilization, Observation, Behavior, Intensity, Dementia (MOBID-2) tool (Sandvik et al., 2014), and the Doloplus-2 tool (Monacelli, Vasile Nurse, Odetti, & Traverso, 2013), to name a few. The variation in assessment tools makes these studies difficult to compare.

Nursing home residents with cognitive impairments may have difficulty responding to a self-report scale. Cognitive tests, such as the Mini-Mental State Exam (MMSE), may be helpful in determining whether to use self-report pain assessment. The MMSE is scored out of 30 points; scores of 20-25, 10-19, and 0-9 may be indicative of mild, moderate, and severe cognitive impairment, respectively (Vertesi et al., 2001). Evidence suggests that residents with MMSE Scores of 18 or higher (moderate to mild dementia) are typically capable of accurate self-report, while those with MMSE score of 13 or lower (severe dementia) are unlikely to provide useful self-report (Hadjistavropoulos, 2005). Residents with more severe cognitive impairments may still be able to provide some self-report information; Weiner et al.'s study of nursing home residents found that some residents who were unable to provide a pain score on a 0-10 Numerical

Rating Scale (NRS) were able to self-report pain during a structured pain interview performed by the provider (Weiner, Peterson, & Keefe, 1999).

Pain treatment in residents with cognitive impairment.

Monroe et al.'s study of residents in a nursing home in the southern United States found that communicative residents with diagnoses of mild-to-moderate dementia were capable of reporting their pain symptoms and intensity, confirming the utility of patient self-report in this population (2014). Residents with and without diagnoses of dementia had similar underlying chronic conditions and reported similar pain symptoms (Monroe et al., 2014). However, the residents with diagnoses of dementia reported greater pain severity than their counterparts without dementia, but were significantly less likely to have an order for an opioid medication (Monroe et al., 2014). This study demonstrates that the barrier to pain management in residents with cognitive impairment goes beyond their ability to communicate pain. Staff may assume residents with dementia diagnoses are unable to report pain and therefore fail to assess for pain; conversely, staff may assume that verbally communicative patients will voluntarily report pain and therefore fail to assess for pain (Monroe et al., 2014).

Barrier: documentation and communication.

Documentation is an important part of good pain management practices for several reasons. First, documentation of pain assessments, interventions, and reassessments are important to the staff communications regarding a resident's pain plan of care; additionally, documentation is a useful tool for organizations to monitor the quality of pain management programs (Wells, Pasero, & McCaffery, 2008). Furthermore, pain management by nursing homes is required by the Department of Health and Human Services (DHHS) and CMS as part of the F309 Quality of Care standards, by requiring documentation of a resident's plan of care, and

pain assessments and reassessments. Nursing homes are evaluated for: 1) comprehensive assessment, 2) updated plans of care, and 3) evaluation of effectiveness of interventions, and revising of ineffective interventions as appropriate (DHHS & CMS, 2009).

Research suggests that documentation of pain in nursing homes may be lacking. In a retrospective chart audit of elderly nursing home residents in Washington State, Jablonski & Ersek (2009) found that within the 30-day period of chart auditing, approximately 85% of resident charts had some evidence of pain assessment documented. However, only 32% of charts contained a weekly pain assessment, and reassessment of pain after administration of pain medication was charted only 20-40% of the time (Jablonski & Ersek, 2009). The findings from this research suggests that the current pain documentation practices in nursing homes have room for improvement in order to serve as an effective communication tool and to meet CMS F309 standards.

Facilitator: standardization of assessment.

In order to combat the problem of chronic pain management in nursing homes, one point of intervention is to provide standardized pain assessments. In a qualitative study of nursing staff at two nursing homes in Ontario, Canada, researchers conducted focus groups and interviews with nursing home staff after the implementation of a pain protocol and found that the implementation of the pain protocol increased awareness of pain management issues and helped staff make pain management a daily priority (Kaasalainen et al., 2012).

In a cluster randomized controlled trial of 195 Taiwanese nursing home residents Chen and Lin (2016) implemented a 4-step protocol with that facilitate the pain detection, assessment, treatment, and reassessment of residents by RNs. When the protocol was paired with pain education for RNs, there was an increase in the non-pharmacological pain interventions, in

referrals for pain management, and a decrease in residents' expressions of pain (Chen & Lin, 2016). The results of this study suggest that education paired with standardization of care and empowerment of nurses can lead to positive changes in both nursing behavior and resident outcomes (Chen & Lin, 2016). This study will serve as a model for this QI project.

Assessment scales with the strongest evidence.

As discussed previously, there is no consensus on the self-report scale or the behavior-based scale that should be used for older adults in the nursing home setting. There are two scales that may have slightly more support from the literature: the NRS and the Pain Assessment in Advanced Dementia (PAINAD) (Hadjistavropoulos et al., 2007).

Several different studies compared self-report scales, and found that the NRS has a higher responsiveness, compliance, ease of use, and applicability as compared to other self-report scales, such as the Visual Analogue Scale (VAS) and the Verbal Rating Scale (VRS) (Chien, Bagraith, Khan, Deen, & Strong, 2013; Hjermstad et al., 2011; Williamson & Hoggart, 2005). The ten-point NRS scale is presented in Appendix A. Studies comparing behavior-based scales often recommend that continuous improvements be made to further improve their validity and utility; the PAINAD, presented in appendix B, is frequently recognized as the more promising of the behavior-based tools (Hadjistavropoulos, Hunter, & Dever Fitzgerald, 2009; Herr, Bursch, Ersek, Miller, & Swafford, 2010; Qi, Diane, & Kay, 2012; Zwakhalen, Hamers, Abu-Saad, & Berger, 2006)

Summary

Chronic pain is a common phenomenon among older adults and is especially prevalent in nursing homes. Pain remains under-recognized and under-treated in this population, and major gaps exist between actual practice and best practice in terms of pain management for older adults

in nursing home settings. Contributing to this practice gap are the knowledge needs and attitudes of nursing home staff. Nurses in particular are important as they perform the bulk of the pain assessments and medication administration. Lastly, while there is no clear consensus on the pain assessment tools that should be used for residents with cognitive impairments, some tools, such as the NRS and PAINAD show promise. This review of the literature supports the implementation of an evidence-based pain assessment protocol in the nursing home setting.

CHAPTER 3: CONCEPTUAL AND THEORETICAL FRAMEWORK

Two frameworks guided the implementation of this DNP project. The first is the Plan-Do-Study-Act (PDSA) cycle, and the second is Kurt Lewin's Theory of Change. This chapter will describe the basic tenants of each framework as well as how they were applied to this DNP project.

PDSA Cycle

The PDSA cycle framework is frequently used to guide the implementation of QI projects, particularly in the field of healthcare. It is part of the Model for Improvement, which is the toolset recommended by the Institute for Healthcare Improvement (IHI) to help healthcare organizations organize and expedite the QI process (IHI, n.d.). The PDSA cycle uses smaller-scale incremental changes and frequent evaluation of outcomes; the QI team is meant to learn from each cycle and progressively refine the change over time in order to achieve success (Langley, Nolan, Nolan, Norman, & Provost, 2009).

This quality improvement project followed the PDSA cycle frame and can be thought of as the first PDSA cycle in the quality improvement partnership between the UNC-SON and the CWRC. In the "Plan" phase, the UNC-SON team met with CWRC QI team and completed the stakeholder analysis to identify the problem. The DNP student spoke with nursing staff, observed current practice, familiarized herself with the culture of the organization, and collected pre-intervention data from the electronic medical system. During the "Do" phase, the DNP student and the Master of Science in Nursing (MSN) student partnered with the CWRC QI team to

develop and deliver staff education and training on the pain assessment protocol, and provided on-site support and reinforcement of the practice change. During the "Study" phase, the DNP student interviewed nursing staff regarding the new protocol and collected information from the electronic medical system to assess for practice change. The data collected from this cycle will guide future interventions and inform the second PDSA cycle.

Lewin's Theory of Change

Another theoretical framework that will be used to guide this DNP project is Kurt Lewin's Theory of Change. Kurt Lewin (1890-1947) was a German-American social psychologist who is well known for his contributions in the field of group dynamics as well as the development of the force-field analysis (FFA) (Encyclopædia Britannica, 2008; Shirey, 2013). According to Lewin, change is a dynamic process with two types of forces exerted upon the process: driving forces, which propel the organization toward change, and restraining forces, which push against and resist the change (Bishop, 2015). Performing an FFA helps organizations understand why certain desired changes are not occurring, as well as identify the forces that could be strengthened or minimized in order to promote the change (Shirey, 2013).

The FFA forms the basis for Lewin's three-step model for change, which consists of unfreezing, moving or transitioning, and refreezing (Shirey, 2013). The first stage is unfreezing, in which old, established behaviors are destabilized to create an environment in which new behaviors could take hold (Shirey, 2013). Unfreezing in the healthcare field may involve organizational leaders who recognize the need for change, a survey or analysis may be conducted to identify gaps between current and ideal practice, and an intervention may be selected that best suits the organization (Shirey, 2013). Though this process can be difficult and produce anxiety for participants, the existing equilibrium must be challenged in order for change to be successful

(McGarry, Cashin, & Fowler, 2012). Change does not actually occur until the moving or transitioning stage, when individuals within the organization adopt the new behavior (Bishop, 2015). This stage requires careful planning and active engagement with the individuals involved so that participants remain focused on the improved outcomes which will result from the change (Shirey, 2013). The last stage is the refreezing stage, in which the new behavior becomes integrated into the organizational norms, culture, policies, and practices; the success of the refreezing stage is essential to the sustainability of the practice change (Shirey, 2013).

The unfreezing stage of this change process occurred in multiple ways. First, CWRC QI team identified the problem of interest and engaged a project team to address the issue. Second, Jasmine Levy, an MSN student at UNC-SON, completed fieldwork involving a patient with uncontrolled pain and engaged with staff to further the unfreezing process. Lastly, stakeholder interviews and analysis was completed in order to assess the driving and restraining forces at play in this organization; the findings of the stakeholder analysis will be discussed in greater detail in the next chapter. CWRC team identified the implementation of a standardized pain assessment protocol as the appropriate intervention. The moving stage of the change process involved the implementation of the DNP project. The DNP student partnered with CWRC leaders in order to provide the teaching and resources necessary to promote the change; this will be discussed at length in the next chapter. In the refreezing stage of the change process, the DNP student evaluated the new process and strategized with the CWRC team to promote the integration of the protocol into the CWRC culture.

CHAPTER 4: DNP PROJECT PLAN

This DNP project was part of a larger research project titled "Intra-professional Development of Nurse Leaders: Working Together Toward Quality Improvement in Long-term Care," which was funded by the North Carolina Area Health Education Centers (AHEC) Innovation Grant. The project sought to accomplish two goals: 1) form a partnership between UNC-SON and CWRC to improve quality of care in the nursing home setting, and 2) streamline advising in nursing education by promote intra-professional teamwork among nursing students at all levels of education. This chapter describes the structure of the UNC-SON and the CWRC teams, and discusses the findings of the stakeholder analysis. Additionally, this chapter describes the design and methods of the DNP project to implement an evidence-based pain assessment protocol in the Health Center of CWRC.

Team Structure

The UNC-SON project team was comprised of two faculty advisors and UNC-SON nursing students of various levels, including Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN), DNP, and Doctor of Philosophy (PhD). UNC-SON nursing students were each responsible for different parts of this AHEC project; these roles are illustrated in Appendix C. The CWRC QI team was comprised of the Director of Well-Being, the Lead Nursing Engagement Coach (equivalent to a Director of Nursing), two Nursing Engagement Coaches (equivalent to nurse managers), and two nurse practitioners. The UNC-SON project team collaborated actively with the CWRC QI team; the two teams met face-to-face once a

month to provide project updates and discuss next steps to ensure that the project was framed appropriately for the CWRC setting.

Prior Work: Stakeholder Analysis

The stakeholder analysis was completed in May 2017 by G. Clayton Freeman as part of her Honors BSN coursework. In the stakeholder analysis phase of this QI project, members of the UNC-SON team worked with the CWRC QI team to identify and interview key stakeholders at CWRC regarding the issue of chronic pain management. The UNC-SON team met with interviewees in person at CWRC to discuss existing barriers and facilitators, as well as the feasibility of various potential interventions. A total of 13 stakeholder participated in the interview process; stakeholders included providers, nursing staff, therapists, and CWRC leadership. The stakeholder interview was adapted from Jacobsen and O'Conner's Population Needs Assessment (2006). The stakeholder interview aimed to gather the following key information: 1) the stakeholder's perception on the roles of residents, family, and staff in the pain management process, 2) the ways in which CWRC performs well in pain management and the ways in which they could improve, 3) the stakeholder's perception on the validity of pharmacologic vs. non-pharmacologic treatment options, and 4) the stakeholder's perception of the viability of various possible interventions to improve pain management. The stakeholder interviews, as well as the preliminary meetings between the UNC-SON team and the CWRC, are consistent with Lewin's unfreezing phase, where the organization readies itself for a change. The UNC-SON team took field notes of all interviews, which were analyzed by Freeman. In order to extract pertinent themes, Freeman looked for both common and unique responses that would represent both the majority opinion as well as some unique perspectives on the issue of pain management. Three major themes were identified in this process: communication, barriers and

facilitators, and opportunities for improvement. These themes will be described in the following sections.

Communication.

Most of the stakeholders interviewed during the stakeholder analysis phase of the project discussed communication as an important factor in pain management. Stakeholders agreed that there was generally good interdisciplinary communication and teamwork at CWRC. However, stakeholders identified that interdisciplinary communication regarding pain can become problematic particularly when different disciplines use different pain assessment tools or have differing views on the efficacy of various pain interventions. Staff stakeholders also identified that intra-disciplinary handoffs are not always comprehensive, suggesting that key information regarding pain management may be lost between shifts (Freeman, 2017).

Overall, stakeholders stated that the healthcare team communicated well with residents and families. However, a number of stakeholders voiced that the residents from the "stoic generation" often try to bear through the pain rather than communication their needs with staff. Additionally, stakeholders identified that when families detect or have concerns about chronic pain in a resident, they may not always know to whom they should report this information; this confusion is a barrier to clear communication between family and staff (Freeman, 2017).

Barriers and Facilitators to Pain Management.

Stakeholders identified cognitive impairment as a major barrier in both the assessment and treatment of chronic pain in residents, citing that it is difficult to know when these residents are having pain and whether the interventions they have implemented are effective. Stakeholders also suggested that the perceptions of residents, family, and staff regarding pain treatment options, particularly the use of opioid medications, was sometimes a significant barrier; for

example, fear of side effects, fear of addiction, and lack of education on the potential benefits can prevent residents from receiving this type of therapy (Freeman, 2017).

Stakeholders also identified problems related to the electronic medical record (EMR) system. CWRC used two separate EMRs and different healthcare team members have differing access to the two programs: "EMR A" was the program used by Health Center nursing staff for daily charting, while "EMR B" was used by providers in the clinic. Additionally, nursing staff in the assisted living units do not chart on any EMR, meaning that when a patient transfers into the Health Center, staff must refer to paper charting if they wish to review past documentation. There are also several issues within EMR A. First, there is no consistent location for pain documentation; second, no pain assessment scales are built into the system; lastly, the program does not provide prompts for pain reassessment. At the time of the stakeholder analysis, CWRC was considering changing to a different charting system (Freeman, 2017).

Potential Opportunities for Improvement.

As discussed above, stakeholders verbalized that staff, residents, and families may all have different biases that prevent effective pain assessment and management; they also believed that education for residents and staff might help to change these misconceptions. Stakeholders were open to personally attending education sessions, and believed that their own disciplines could benefit from additional education and training. Additionally, stakeholders strongly believed that the implementation of a standardized pain assessment protocol, as well as standardized standing pain orders, would help the CWRC with chronic pain management (Freeman, 2017).

Methods

This DNP project is a QI that follows the PSDA cycle model for improvement. Refer to Appendix D for the timeline for this QI project.

Setting and Resources.

This QI project was implemented on floors 2 and 3 of the CWRC Health Center. CWRC is a CCRC located in Chapel Hill, North Carolina. CWRC provides independent living, assisted living, assisted nursing, and skilled nursing services for its residents. Additionally, there is an on-site clinic where residents may receive primary care and urgent care services. All skilled nursing residents reside on floor 3, and the majority of assisted nursing residents reside on floor 2. Some assisted nursing residents also live in Buildings 6 and 7, which house a combination of assisted living and assisted nursing residents. The pain assessment protocol used in this project may be revised and disseminated to the other components of the CCRC; the dissemination to assisted and independent living would be outside the scope of this DNP project.

Potential Participants

This QI project targeted CWRC RNs and LPNs who provide care to residents on floors 2 and 3 of the CWRC Health Center. The QI project was delivered as part of the spring and fall Nursing Skills Fairs. The Nursing Skills Fair is a semi-annual competency renewal event; all nurses and Resident Life Specialists (the equivalent of CNAs) who provide resident care on floors 2 and 3 of the CWRC Health Center are asked to attend. At the time of the May 2017 Nursing Skills Fair, there were 32 full-time, part-time, and per-diem nurses in this role at CWRC; there were 30 such nurses at the time of the October 2017 Nursing Skills Fair. All residents on floors 2 and 3 were also indirectly involved in the study, as documentation data was

collected via chart review. However, no identifying data was collected, and no information was gathered directly from residents.

Ethical Considerations

This project was reviewed by the University of North Carolina Institutional Review Board (UNC IRB), IRB #17-0684, and was deemed to not require IRB approval, as it was not research. The assessment protocol used in this quality improvement project was based on current best evidence and recommendations. As such, the risks associated with this QI project were low. Residents retained their autonomy and received their usual care. As with any clinical practice, the residents were able to refuse the pain assessment if they wished to. The possible benefits of this study were improvements in pain assessments for residents. In regards to the KASRP and the interviews that the skilled nursing staff were asked to complete, there were no known risks, and participation was voluntary.

Pre-Implementation.

Pre-implementation observation.

During the pre-implementation period, in consultation with the CWRC QI team, the DNP and MSN students observed the nursing staff on Floors 2 and 3 to familiarize themselves with the current practices at CWRC regarding pain assessments. These observations were documented as field notes. In particular, the students noted the following: 1) which staff roles were responsible for performing pain assessments, 2) which staff roles were responsible for providing pain interventions, and 3) how pain information was communicated between roles and between shifts. The DNP student also gathered details regarding the staffing practices on these two floors. No staff or resident identifying information was recorded in these notes.

Pre-implementation chart review.

During the pre-implementation period, the DNP student performed a retrospective chart review of all residents on Floors 2 and 3 in order to assess the baseline charting. The DNP student abstracted information from the chart that was a minimum of two weeks before project implementation. For residents requiring nursing charting once per shift, the DNP student collected charting data for 6 different shifts: first shift (0700-1500) on Monday and Friday, second shift (1500-2300) on Tuesday and Saturday, and third shift (2300-0700) on Wednesday and Sunday. For residents requiring nursing charting once per week, the DNP student collected weekly data from 5 weeks of charting. Several sets of data were gathered: 1) whether a pain assessment was completed for the resident, and if so 2) the pain scale used, and 3) the pain score documented for the resident. The DNP student also assessed 4) what, if any, pain interventions were performed, and 5) any change in the pain score of the resident after intervention. Finally, the DNP student assessed 6) whether a cancer diagnosis is present. As discussed in the review of literature, straightforward guidelines exist for the management of adult cancer pain; if a number of residents had cancer diagnoses, improving their pain management could be a potential future intervention. No resident identifiers were collected during this phase of the project.

Pre-implementation development of materials.

During the pre-implementation period, in consultation with the CWRC QI team, the DNP student developed a pain assessment protocol based on current evidence-based recommendations as well as CWRC's site-specific needs. The pain assessment protocol contains four components: 1) a brief rationale for use, 2) a self-report pain assessment scale, 3) a behavior-based pain assessment scale, and 4) a process map detailing how the protocol should be used. The CWRC QI team chose the NRS and the PAINAD as the pain assessment scales for ease of use, brevity,

and consistency. The process map was created based on recommendations from the AGS and ASPMN, and includes charting instructions that were specific to the CWRC electronic charting system. The CWRC QI team approved the pain assessment protocol before dissemination. Appendix E presents all four components of the pain protocol.

The CWRC QI team also worked with the DNP student to adapt the knowledge survey, the KASRP to be more appropriate for the nursing home setting. The 2014 KASRP contains 39 items and was developed by City of Light for use as a "pre- and post- test evaluation measure for educational programs" for nurses and other health professionals (Ferrell & McCaffery, 2014). The assessment can be scored to determine the percentage of correct answers, with a higher percentage of correct answers indicating knowledge and attitudes that are more congruent with current evidence and best practice (Ferrell & McCaffery, 2014). In order to make the KASRP more applicable to CWRC nurses, the CWRC QI team eliminated four questions that were related to pediatrics and IV push pain medications. The two case studies were also edited to better represent the typical CWRC resident by focusing on chronic pain rather than post-surgical acute pain.

In terms of educational materials, the DNP and MSN students worked with the CWRC QI team to create a presentation designed to introduce RNs and LPNs to the new pain assessment tools and protocol, as well as a handout that could be laminated and distributed in the Health Center. The DNP student also created a check-off tool for use during the CW nursing skills fair to ensure that nursing staff received the pain assessment training. The CWRC QI team approved all educational materials before dissemination to staff.

Pre-implementation memorandum to physicians and nurse practitioners.

Additionally, the DNP student communicated the goals and plan of the quality improvement project with the physicians and nurse practitioners at CWRC via internal memorandum. The memorandum presented the proposed pain assessment protocol and the embedded pain assessment scales; it also detailed how to contact the UNC-SON team for concerns and suggestions regarding the process. The goal of the pre-implementation memo was to increase provider buy-in and to include them in the quality improvement process. Aside from the two nurse practitioners on the CWRC QI team, the DNP student did not receive any additional feedback from CWRC providers regarding the QI project or the protocol.

Implementation.

The project implementation represents the moving or transitioning phase of Lewin's Theory of Change; during this phase, participants need encouragement and support in order to change their personal practices to align with the goals of the practice change. During the implementation period, the DNP student completed nursing staff education on the pain assessment protocol and the standardized assessment scales embedded within. Education for the nursing staff occurred in two major modalities: 1) during the May 2017 Nursing Skills fair, and 2) electronically using the Relias online education system.

All CWRC nurses were asked to attend a Nursing Skills Fair on May 24th, 2017, to receive training on several areas. The UNC-SON team led a station on pain management. Nurses participating in the skills fair were first asked to complete a printed version of the CWRC KASRP. After completion of the CWRC KASRP, nurses attended a 20-minute presentation by the DNP student. The presentation explained the importance of pain management in this resident population, how to correctly use the NRS and the PAINAD, how to apply the new pain

assessment protocol, and how to document pain assessment in the electronic medical system. Appendix F provides the presentation slides used for the education. The DNP student then checked off the nurses as having completed the Pain Management Station.

In order to deliver the education to nurses who had been unable to attend the skills fair, the DNP student created electronic versions of the CWRC KASRP and the educational materials. The printed version of the CWRC KASRP was converted to a Qualtrics survey, and the DNP student recorded a narrated PowerPoint file of the Skills Fair educational presentation. These materials were uploaded to the Relias online education system, which is used by CWRC to deliver a variety of electronic educational modules. The Relias module was assigned to nurses who did not attend the May 2017 Skills Fair. The Relias module opened on August 28th, 2017; nurses were asked to complete the module by September 11th, 2017.

Post-Implementation.

During the post-implementation period, the UNC-SON team repeated the observation of shift change report on the 2nd and 3rd floors of the Health Center and took field notes on how the nurses communicated pain information. The DNP student also performed a chart review of all residents on Floors 2 and 3. Similar to the pre-implementation chart review, the DNP student reviewed 6 shifts of charting for residents requiring nursing documentation every shift, and 5 weeks of charting for residents requiring nursing charting every week. The DNP student gathered the same sets of documentation data as what was gathered during the pre-implementation period.

Finally, UNC-SON team interviewed nurses during the October Nursing Skills Fair and during shift report observations to assess the barriers and facilitators faced by the staff in the training and use of the pain assessment protocol. Nurses who were able to complete the training were asked about the training modality, the ease of use of the new protocol, and feedback on

how to improve. Nurses who were not able to complete the training were asked about barriers preventing them from receiving the education, as well as ways to facilitate their learning with future modules. After nurses completed the face-to-face interview, those who had completed the pain training and the KASRP pre-test were asked to complete the KASRP again in order to assess whether the education and project implementation had any impact on their knowledge and attitudes.

Data Collection Instruments

Chart reviews were used to review documentation of pain – information was recorded using Microsoft Excel. No special data collection instruments or tools were needed; no identifying data was collected on any residents. The CWRC KASRP was administered as a paper survey at the May Skills Fair and an electronic Qualtrics survey after the May Skills Fair. The CWRC KASRP was scored by counting the number of correct answers and dividing by the total number of questions that the nurse attempted to answer. In an effort to link nurses' responses on the KASRP pre- and post-implementation while maintaining nurses' anonymity, nurses where asked to provide the last two digits of their mobile phone number and their favorite color at the beginning of the survey as a unique identifier; no other identifying information was collected from nurses. Field notes were taken during change of shift observations and face-to-face interviews; nurses were not recorded.

Data Analysis

The chart review data and survey data was analyzed using descriptive statistics to assess for changes in the rate of pain assessment. Descriptive statistics were also used to report on the number of residents with an oncological history. Additionally, documentation data and shift report observations data were analyzed for qualitative improvements in documentation and

communication of pain. In particular, the DNP student looked for elements such as the reporting the pain tool used, the location of pain, the pain intervention, and the effectiveness of the intervention.

CHAPTER 5: RESULTS

Participation

During the implementation period, 18 of the 32 eligible full-time, part-time, and per-diem assisted-nursing and skilled-nursing nurses completed the CWRC KASRP and the pain protocol training: 14 nurses completed it at the May Skills Fair while four nurses completed the CWRC KASRP and the pain protocol training online via Relias. Fourteen nurses did not complete the training.

During the post-implementation follow-up, 15 nurses completed face-to-face interviews with the UNC-SON team; five additional nurses were contacted via email to schedule phone interviews but none of these five completed interviews. A total of eight nurses completed the CWRC KASRP post-test; nurses who did not complete the training on the pain assessment protocol were not given the post-test.

KASRP Scores

In the CWRC KASRP pre-test, 15 nurses answered all 35 questions; one nurse answered 26 questions; and two nurses answered 19 questions. The average percentage of correct answers in the pre-test was 64.6%. In the CWRC KASRP post-test, all eight nurses answered all 35 questions, and the average percentage of correct answers was 65.2%. Staff knowledge and attitudes regarding pain, as measured by the CWRC KASRP, did not substantially improve post implementation. Table 1 summarizes the results of the CWRC KASRP.

Table 1. Summary of results of CWRC KASRP

	Pre	Post
Number of Surveys Completed	18	8
Average Percentage of Correct Answers	64.6%	65.2%

Documentation

Three elements of documentation were reviewed for this project: 1) history of or active oncological diagnoses, 2) rate of documentation of resident pain, and 3) quality of documentation of resident pain. Thirty-two resident charts were reviewed in the pre-implementation phase and 37 residents charts were reviewed in the post-implementation phase. A total of seventeen residents were present at the Heath Center during both the pre-implementation and post-implementation chart reviews, so a total of 52 unique resident charts were reviewed for this project. All 2nd floor residents required weekly charting, while the 3rd floor had a mix of residents requiring charting each week and each shift. Table 2 summarizes this data.

Table 2. Distribution of charts reviewed.

	Number of charts reviewed	
	Pre	Post
2rd floor, overall	15	22
3rd floor, overall	17	15
3rd floor, every shift charting	9	9
3rd floor, every week charting	8	6

Oncological Diagnoses

Of the 52 unique resident charts reviewed, 20 (38.5%) had a documented oncological history. No charts had documented active oncological diagnoses. The most common oncological history documented was skin malignancies (13), followed by breast cancers (4), hematological malignancies (2), prostate cancers (2), and colon cancers (2). Other cancers mentioned in the documentation include tonsillar cancer (1), connective tissue neoplasm (1), ovarian cancer (1)

and lung cancer (1). There was no documentation in these charts of residents having or reporting pain as a result of their cancer or cancer treatments.

Rate of Documentation of Resident Pain

For residents requiring documentation every shift, each resident-shift was counted as a charting opportunity; for residents requiring documentation every week, each resident-week was counted as a charting opportunity. If a resident transferred to or from the CWRC Health Center during the chart review period, their documentation was only evaluated for the length of their stay in the Health Center. A charting opportunity was counted as having pain documentation if a CWRC Health Center care nurse documented on resident pain in any part of chart for that resident during either that shift or that week. The percentage of charting opportunities with pain documented did not increase post-implementation. Table 3 summarizes the rates of pain documentation for the CWRC Health Center pre- and post-implementation.

Table 3. Rate of pain documentation.

	Percentage of charting opportunities with pain documentation	
	Pre	Post
2nd Floor, overall	28/75 (37%)	36/105 (34%)
3rd Floor, overall	44/94 (47%)	34/84 (40%)
3rd Floor, charting every shift	22/54 (41%)	19/54 (35%)
3rd Floor, charting every week	22/40 (55%)	15/30 (50%)

Quality of Documentation of Resident Pain

The pain documentation data was analyzed for comprehensiveness by counting the frequency of the presence of several elements in the free text areas of the EMR. These areas include the nursing notes and the medication effectiveness portions of the chart. The elements of interest were: the documentation of a pain score from 0-10, the pain location, the pain

intervention initiated, and the effectiveness of the intervention. Table 4 presents the frequency of these pain documentation elements that were found in the charting.

Table 4. Frequency of various pain documentation elements.

	2nd Floor, Overall		3rd Floor, Overall		3rd Floor, Shift		3rd Floor, Week	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
# Residents	15	22	17	15	9	9	8	6
# Charting opportunities	75	105	94	84	54	54	40	30
Scale /10 Charted	1	11	2	8	2	6	0	2
Pain Location	10	15	4	4	0	1	4	3
Intervention	11	9	4	8	0	5	4	3
Effectiveness	4	6	4	5	1	2	3	3

A few elements increased in frequency post-implementation. For example, a documented pain score on a scale from 0-10 was much more frequently found post-implementation on both floors of the CWRC. Documentation of pain location increased in frequency on the 2nd floor, while documentation of pain intervention increased in frequency on the 3rd floor. The small counts and non-independence of the data make it difficult to test whether these changes are statistically significant (G. Knafl, personal communication, December 12, 2017).

There were also four elements found in the post-implementation chart review that were absent in the pre-implementation documentation. First, the use of a 0-10 scale to document the absence of pain was found in six residents' charts on in the post-implementation documentation. Second, in one resident chart, the nurse reported a pain score from a 0-10 scale in the pain reassessment, rather than using only a descriptor. Third, documentation of one resident's baseline pain was found post-implementation. Lastly, nurses documented use of the PAINAD for three residents in the post-implementation period. Table 5 presents some examples of these elements from the chart review.

Table 5. Examples of pre- and post-implementation documentation

Documentation element	Examples from chart review	
	Pre	Post
No resident pain	"No complaints of pain"	"Denied pain (0/10) when asked"
Pain reassessment	"PRN lidocaine ointment applied x1 with good results noted"	"Medicated with PRN tramadol at 0840 prior to PT, with good results noted as per resident. Denied pain (0/10) when asked."
Assessment of baseline pain	None found	"Stated pain to back rated 4/10 which is baseline for her"
Use of PAINAD	None found	"Reporting pain in LLE at this time, pain score (PAINAD) – 4"

Quality of Shift Report

The UNC-SON team observed four shifts during the pre-implementation period, six shifts between the May and October Skills Fairs, and eight shifts during the post-implementation period. Shift report did not change post implementation of the pain assessment protocol. Generally speaking, nurses in both the pre-implementation and post-implementation tended to focus on residents' meal consumption, last bowel movement, physical and occupational therapies, medication changes, and visitors. Nurses were more likely to comment on the pain interventions available to a particular resident than to discuss their pain levels. Additionally, nurses rarely commented on the effectiveness of the interventions and therapies during shift change. Appendix G summarizes the 18 shift reports that were observed.

Nurse Interviews

Of the 15 nurses who participated in face-to-face interviews with the UNC-SON team during the post-implementation period, 11 were full time employees, two were part-time, and two were per-diem. Three of the 15 interviewees did not serve as care nurses in their primary roles, but might be asked to staff the floors if needed. Ten of the interviewees had completed the pain protocol training before their interview. Appendix H presents a summary of nursing staff interviews.

Of the 10 nurses who were trained on the protocol, the majority (7) was trained in person at the May Skills Fair while the rest (3) completed their training on Relias. Of those who were trained, most found the training helpful and thought that the new process was going well. Staff identified difficulties with resident comprehension or communication as a barrier to pain assessment. Nurses also found it helpful to have both the NRS and PAINAD as options in the protocols, though a number voiced their unfamiliarity with the PAINAD due to infrequency of use. Of the five nurses who had not received training, three reported that they had never been assigned to the training, two were new hires, and one nurse had technical difficulties with accessing Relias in general. The nurses also made suggestions of areas of improvement, such as having continued support from the UNC-SON team, additional training or refreshers, creating cheat sheets or pocket cards, and involving RLSs in the pain process. Additionally, nurses made a number of comments regarding the difficulty of documenting and retrieving pain information in the current EMR.

CHAPTER 6: DISCUSSION

While there were no meaningful changes in the CWRC KASRP scores and the rate of documentation of resident pain, there were qualitative changes in quality of the post-implementation pain documentation. Additionally, nurses were mostly positive about the QI project in interviews and appreciated the support that the UNC-SON team provided. The presence of these qualitative changes is evidence that learning and change did occur among the nursing staff during the QI process. Interviews with nursing staff suggest that most nurses found the training to be helpful, and verbalized willingness to continue working with the protocol to improve pain assessment for their residents. This QI project demonstrates that it is possible to illicit qualitative changes in the documentation behaviors of nursing home nurses with pain education and a standardized pain assessment protocol. With the continued partnership between the UNC-SON and the CWRC, the hope is that vigilance regarding resident pain will continue to be integrated into the culture of the CWRC.

In investigating the prevalence of oncological diagnoses in residents at the CWRC Health Center, the chart review found the proportion of residents at the CWRC Health Center to be higher than that found in other studies: 38.5% at CWRC versus 4-26% in other nursing home populations (Drageset, 2012, 2014; Rodin, 2008). Since no residents were documented to have active cancer or to have pain related to their cancer diagnoses or treatments, this may not be a logical point of intervention in the future.

Implementation Challenges

Two major challenges may have reduced the impact of this QI project. First, staff turnover during the project implementation period had a significant impact on the workforce of CWRC. Of the 32 full-time, part-time, and per-diem nurses eligible for the May Skills Fair, seven nurses had left CWRC by October, and another nurse had transferred to the clinic setting; one of the nurses leaving the organization was the weekend nurse manager, who had also been part of the CWRC QI team. This turnover meant a loss of project champions as well as nurses who were trained in the new protocol. The departure of experienced nurses also created staffing shortages, which may have impacted nurses' desire to learn new information or participate in interviews with the UNC-SON team. CW had hired six new nurses by the October Skills Fair. The pain protocol training had not been implemented into new nurse orientation, meaning that newly hired nurses were not officially trained to use the protocol.

Second, the DNP student encountered barriers when trying to interface with the CWRC QI team during the summer. This is largely attributable to CWRC leaders taking vacation time and cross-covering others responsibilities during the summer. This made it difficult to communicate effectively with the CWRC QI team and set back the timeline for dissemination of the online education module via Relias, which led to a stepwise implementation over several months. This prolonged implementation may have negatively impacted the integration of the pain protocol into CWRC nursing culture. Interestingly, the UNC-SON team learned a lot about various administrative roles at CWRC, and also gained a better sense of the organization's workflow during the summer months. This organizational knowledge will surely prove useful in the implementation of future PDSA cycles under the CWRC and UNC-SON partnership.

Limitations

Several limitations of this QI project must be acknowledged. First, the implementation period of this project was limited to the Health Center, where the all of the skilled nursing residents and some of the assisted nursing residents live. Even though assisted nursing residents also live in Buildings 6 and 7, these sites were not able to be included due to the fact that paper documentation was still used there at the time of this project. This meant that not all assisted nursing residents were captured in the project, and not all nurses caring for assisted nursing residents were equally exposed to support by and resources from the UNC-SON team. Second, not enough attention was paid to third-shift nurses to ensure that they were included in the project. Because of timing and availability, third-shift nurses did not participate in the original needs assessment interviews, and the DNP student did not attend any 11pm shift change reports between second- and third-shift nurses. These factors ultimately reduced the impact of the QI project on third-shift nurses and their practices. Lastly, because the UNC-SON team performed the interviews with the nurses at the end of the QI project and the interview process was anonymous, nurses may have felt uncomfortable or impolite making negative comments regarding the project to the UNC-SON team. This meant that the information gathered during the interview process might not have been a comprehensive representation of nurses' thoughts regarding the protocol.

Applicability of Theoretical Framework

The two frameworks used to guide this QI project were Lewin's Theory of Change and the PDSA cycle from the IHI's Model for Improvement (IHI, n.d.; Shirey, 2013). Each were useful in their own way but also had their shortcomings, which were partially mitigated by the other framework. For example, the PDSA cycle is very useful for QI initiatives, as the iterative

nature of the PDSA cycle allows the organization to build upon small improvements in order to achieve a greater goal (IHI, n.d.). However, the PDSA cycle does not account for the difficulty of changing institutional culture, individual beliefs, or ingrained behaviors. Lewin's Theory of Change specifically addresses the phases of change that an organization must undergo in order to have a successful change in culture and behavior (Shirey, 2013). However, since each step in the process must occur before the next, the theory does not provide a way to correct a change process that has been unsuccessful. Overall, the two frameworks combined contributed greatly to the construction of the project.

Outcomes of the Project

Beyond the main results of the QI project, the QI project data will be discussed: 1) compiling and disseminating focused reports to different groups at CWRC, and 2) informing the second PDSA cycle.

Focused Reports

After the post-implementation data collection and analysis period, the DNP student was able to compile focused reports for several different purposes at the CWRC: 1) EMR report, 2) dissemination of findings with nursing staff, 3) presentation to CWRC Leadership, and 4) presentation to the CWRC Health and Wellness Committee. The goal of these focused reports was to present the data and results of the QI project in context, support and encourage continued improvement efforts, and strengthen the partnership between CWRC and the UNC-SON.

CWRC is currently in the process of changing their Health Center EMR from EMR A to another service. To inform the startup of the new EMR, the DNP student compiled and made recommendations based on nurses' interview comments regarding EMR A, EMRs in general, and documentation; see Appendix I for the EMR report. The CWRC Director of Wellness was

able share the contents of this report in a meeting on January 29, 2018 that was focused on the adoption of a new EMR. The report was helpful in this context as it gave CWRC leaders insight to the concerns and priorities of the nursing staff; this knowledge will allow CWRC to tailor the new EMR to their staff's specific needs.

The UNC-SON team also shared the outcomes of the QI project with the CWRC Health Center nurses at shift change report on February 19 and 23, 2017. This gave the Health Center nurses opportunities to ask questions to the UNC-SON team and communicate concerns. The UNC-SON team will also be presenting to the Health and Wellness Committee, which is an organization of residents in independent living in the CWRC; the group is active in the CWRC and is a strong advocate for the wellbeing of all residents. Finally, the UNC-SON team will be presenting to the executive leadership of CWRC.

Informing Cycle 2 of PDSA

As discussed in Chapter 3, the Model for Improvement and the PDSA cycle were used to guide the project. This work will inform a second PDSA cycle 2 for the UNC-SON team. On December 12, 2017, the findings of PDSA cycle 1 were presented to the UNC-SON and the CWRC QI team. Certain components of the QI project, in particular the nurse interviews, provided insight into the concerns of the nursing staff. The results of PDSA cycle 1 were taken into consideration by the UNC-SON team and CWRC QI team to refine and narrow the focus of Johnson's QI project.

Sustainability

There are a few facilitators to the sustainability of this QI project. First, the pain protocol is consistent with and incorporates information from the current CWRC pain policies. This ensures that there are no discrepancies in the information presented to the nursing staff. Second,

since the online Relias presentation is based off a PowerPoint presentation with narration, the CWRC QI team could easily update and upload the presentation as needed to ensure that the content stays consistent with best practice recommendations, CWRC protocols, and the EMR documentation requirements. It can also be easily assigned to nurses and can be completed at the nurse's convenience. Lastly, and perhaps most importantly, a key component of this QI process has been building the partnership between the CWRC and UNC-SON. Both the UNC-SON team and the CWRC QI team are committed to furthering efforts to improve different aspects of pain management at CWRC, and will build upon the progress that has already been made. This QI process has increased the trust and knowledge that both partners have of each other, which will further facilitate future QI initiatives.

Opportunities for Future Work

Three opportunities for will be discussed in this section: 1) consideration of third shift nurses in QI process, 2) integration of training into orientation and competency renewal, and 3) building an EMR that streamlines pain documentation and auditing.

Participation of Third-Shift Nurses

One opportunity for future work is to increase the participation of the third-shift nurse in the QI process. As discussed in the limitations section, third-shift nurses were underrepresented in the stakeholder interviews, and the DNP student provided limited in-person support to third-shift nurses during implementation. During the post-implementation interviews, some third-shift nurses voiced the opinion that it was hard to retain information at the Skills Fairs after coming off an 8-hour shift, indicating that a different training modality may have been more effective for them. Future QI work at CWRC should make deliberate efforts to include the considerations of the third-shift nurses into the process.

Orientation and Competency Renewal

As discussed in data interpretation, the pain protocol training has not yet been integrated into the orientation process. Additionally, there is currently no process in place for renewing competency in those who are already trained. The UNC-SON team and CWRC QI team are in agreement that the pain training should be included in both orientation process and the competency renewal; one way this could be done is by assigning the Relias module to nurses during the orientation process and at regular time intervals. Adding pain protocol training to new nurse orientation and competency renewal will further promote the integration of this pain assessment protocol into the culture at CWRC.

Streamlined EMR

As discussed in the focused reports section, CWRC is in the process of switching to a new EMR. With the support of the UNC-SON team, CWRC can take the findings of this QI project to advocate for certain charting and auditing components to be included in their new EMR. This can help eliminate some of the barriers, particularly related to nursing documentation, that have made it difficult for nurses to chart in accordance with the current policies. Additionally, a streamline charting and auditing system will make it easier for CWRC to monitor the effectiveness of QI initiatives in the future; manual chart auditing processes such as the one undertaken for this DNP project are not feasible for CWRC's current staffing model.

Implications

Pain in the nursing home setting is a complex, multifactorial issue (Jones et al., 2004). Pain education is important to addressing the knowledge gap in this setting (Jones et al., 2004); such training could be a routine part of nurses' orientation and competency renewal process, with emphasis placed on correcting outdated pain beliefs and training on the correct use of appropriate

pain scales. Strong lines of communication should be maintained between nursing home leadership, nursing staff, healthcare providers (Abrahamson, DeCrane, Mueller, Davila, & Arling, 2015), and the QI team, so that the QI initiative displays consistent messaging that is in agreement with nursing home policies. The QI team should also be cognizant of staffing shortages and leadership changes related to turnover, and the QI strategy should be designed to adapt to such personnel changes (Jones et al., 2004). Finally, if possible, the QI initiative may be more successful it is able to target multiple groups simultaneously (Jones et al., 2004), including nursing assistants (Abrahamson et al., 2015), nurses, providers, residents, and families.

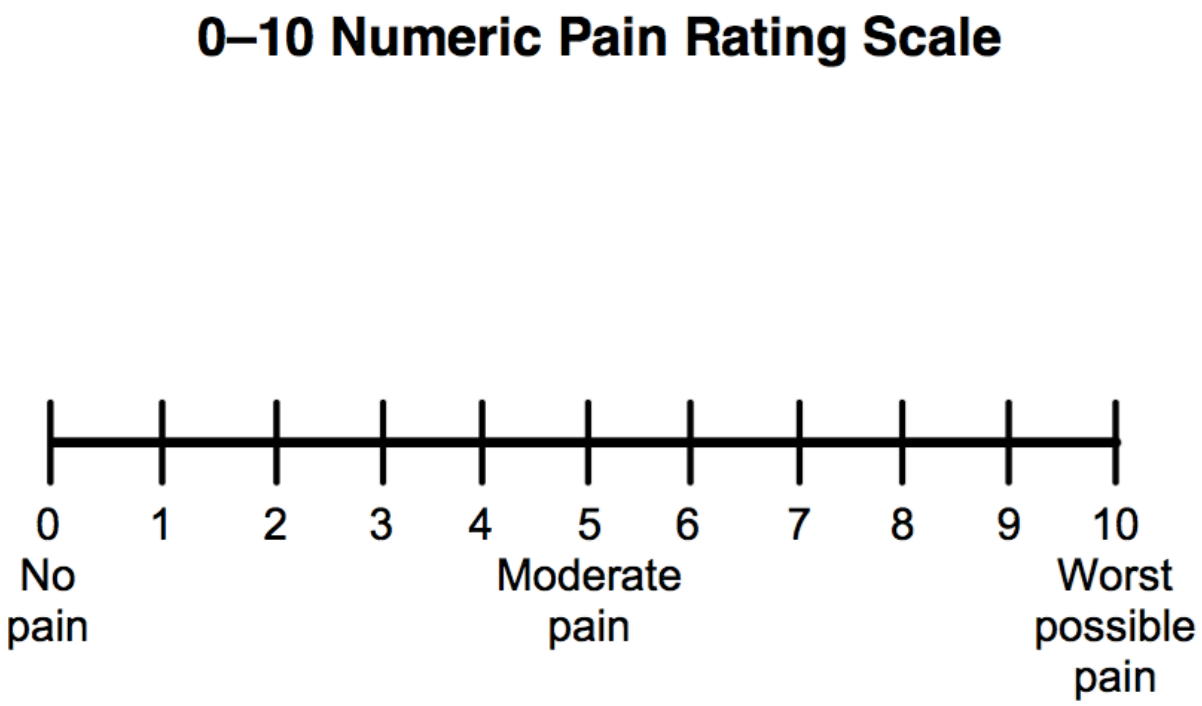
The DNP project also has important implications for the setup of the graduate education in the field of nursing. A QI project initiative by a DNP student is far more likely to have a sustainable impact if the school and the project site have a long-term relationship. The partnership not only benefits the students, in that they have the full support of the practice site, it also benefits the implementation site, in that they gain a dedicated QI leader for the duration of the project. More efforts should be made on the part of schools of nursing to secure site partnerships such as the one that the UNC-SON has with CWRC.

Role of the DNP

There is limited literature on impact of the DNP in the nursing home, though there are many opportunities for DNPs to make meaningful change in this setting. The DNP can contribute clinical expertise and experience in the care of the nursing home population (American Association of Colleges of Nursing, 2006) and improve the quality of care of residents in nursing homes as an advanced practice registered nurse (Philpot, Tolson, & Morley, 2011). The DNP can also provided expertise in organizational leadership, advocacy, and interprofessional collaboration (American Association of Colleges of Nursing, 2006). DNPs are

equipped with the competencies necessary to advocate for and promote change in the nursing home. Their impact to the healthcare system will become more visible in the coming years, as more DNPs enter the workforce.

APPENDIX A: NUMERIC PAIN RATING SCALE (NRS)

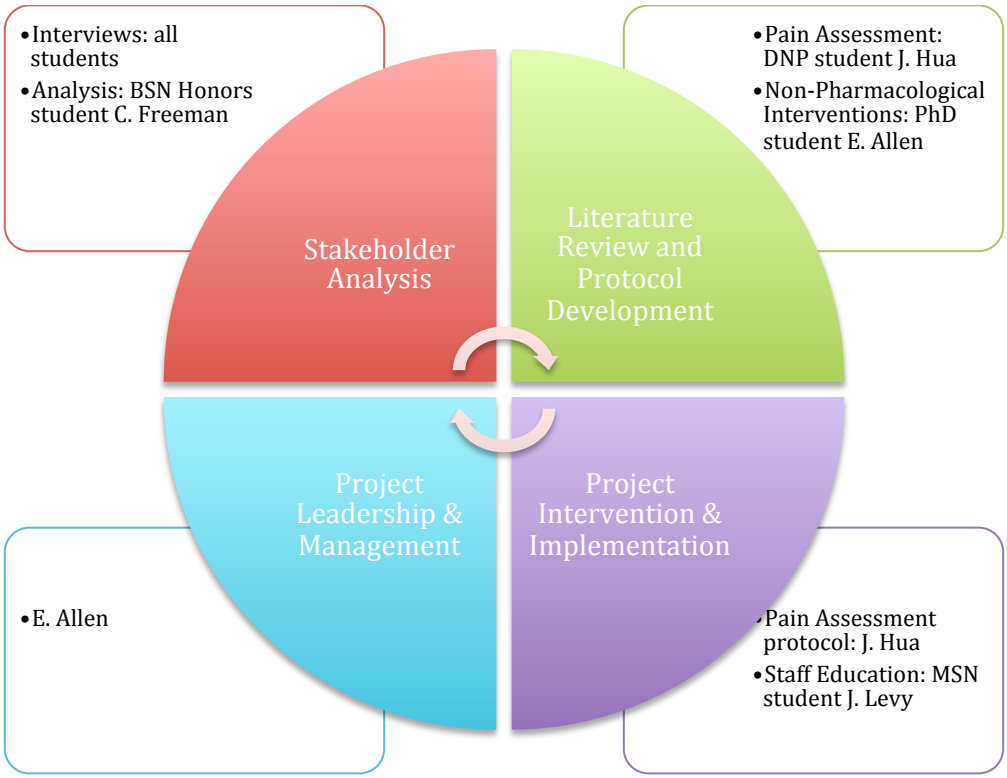


APPENDIX B: PAIN ASSESSMENT IN ADVANCED DEMENTIA (PAINAD) SCALE

	0	1	2	Score
Breathing Independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative vocalization	None	Occasional moan or groan. Low-level speech with a negative or disapproving quality.	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial expression	Smiling, or inexpressive	Sad. Frightened. Frown	Facial grimacing	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract or reassure.	
			TOTAL	

(Warden, Hurley, & Volicer, 2003)

APPENDIX C: STUDENT ROLES IN CWRC QUALITY IMPROVEMENT PROJECT



APPENDIX D: PROJECT TIMELINE

Item	**Members Required**	**Proposed Date**
Complete IRB	W. Hua A. Beeber	Exempted by IRB April 3rd, 2017
Oral Defense of DNP Project Proposal	W. Hua A. Beeber M. Zomorodi J. Wilson	Thursday, April 27th, 2017
Presentation of DNP Project Proposal at Carol Woods Meeting	W. Hua	Friday, April 28th, 2017
Pre-intervention observation and data collection	W. Hua	May 15th-23rd, 2017
CWRC May Nursing Skills Fair, Staff Education, Rollout of intervention	W. Hua J. Levy	May 24th, 2017
Distribution of electronic KASRP and training via Relias	W. Hua	August 28th, 2017
Post-intervention observation and data collection	W. Hua H. Shea E. Allen	October 9th-23rd, 2017
CWRC October Nursing Skills Fair, nurse interviews	W. Hua	October 17th, 2017
Data analysis, write-up of project	W. Hua	September – February 2017
Presentation of findings to CWRC QI Team	W. Hua	December 15, 2017
Presentation of findings to nursing staff	W. Hua E. Allen H. Johnson	February 19 & 23, 2017
Oral Defense of DNP Project	W. Hua A. Beeber	March 26, 2017

	M. Zomorodi J. Wilson	
Submit Final DNP Project	W. Hua A. Beeber	April, 2017

CAROL WOODS

IMPROVING CHRONIC PAIN MANAGEMENT

WHY: Research has shown that chronic pain in elderly populations is untreated or undertreated. Uncontrolled pain can lead to other health problems such as decreased mobility, depression, and sleep disturbances. Carol Woods wants to be a leader in chronic pain management for their residents and improve their quality of life.

BEST TOOLS: Carol Woods has selected two tools for assessing pain. The first tool is the Numeric Rating Scale (NRS), which is for cognitively intact residents. The second tool is the Pain in Advanced Dementia (PAINAD), which is for cognitively impaired residents. An algorithm was developed to assist in decisions related to managing chronic pain.

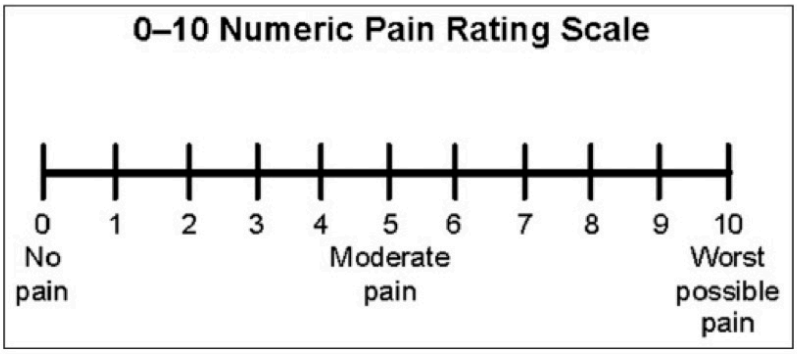
TARGET POPULATION: Residents living in Buildings 4, 6, and 7.

HOW CAN YOU HELP: Implement the Best Tools presented today in your daily practice to assist residents at Carol Woods manage their chronic pain.

Last edited: 5/19/17

Best Tool # 1: Numeric Rating Scale (NRS)

Verbally ask the resident: "On a scale of 0 to 10, with 0 being no pain and 10 being the worst possible pain you can imagine, how would you rate your pain right now?"



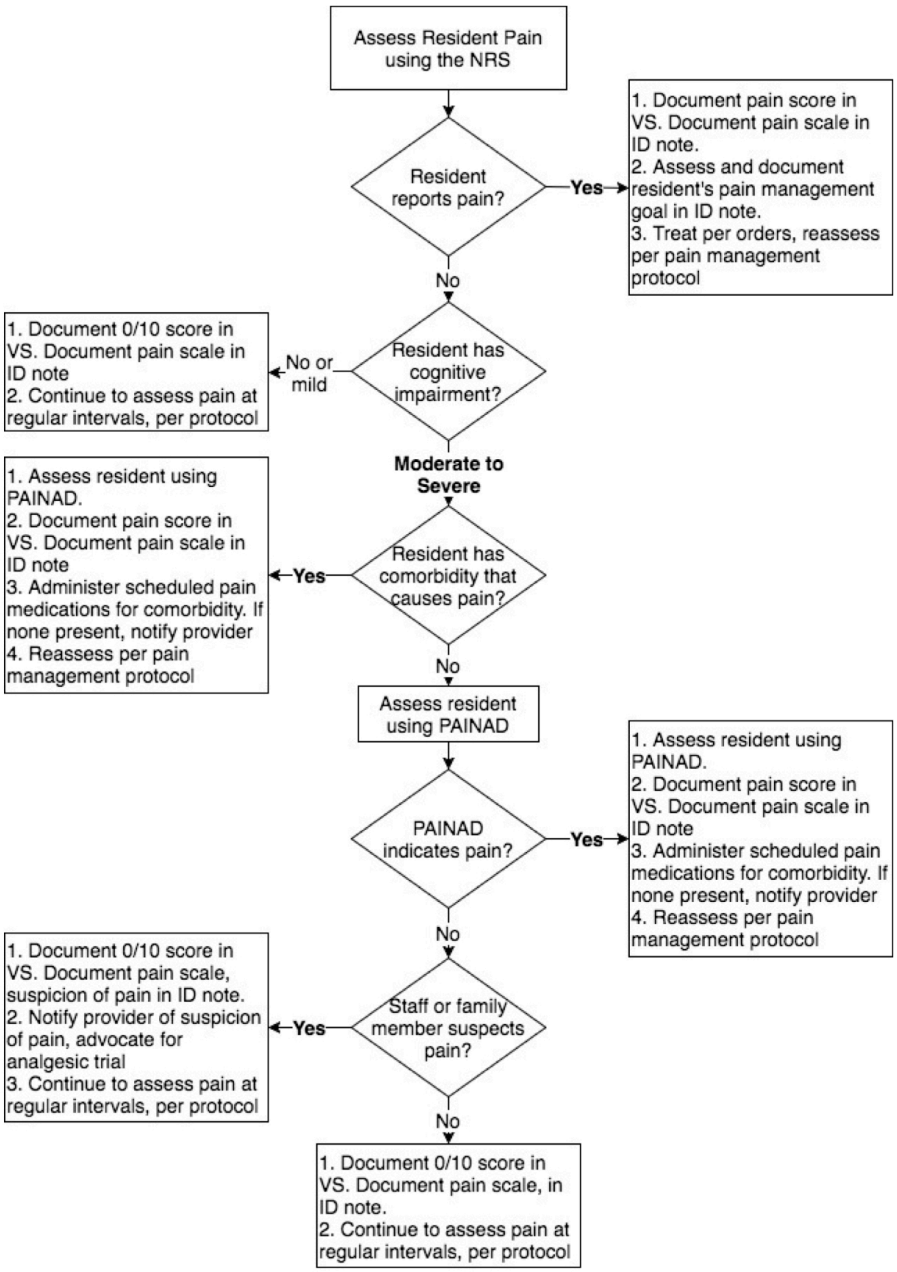
Best Tool # 2: PAINAD (Pain Assessment in Advanced Dementia)

Nurse observes the resident for the following 5 behaviors and rates them on a scale from 0 to 2. Add the scores together to obtain a total score, out of 10.

	0	1	2	Score
Breathing (Independent of vocalization)	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative Vocalization	None	Occasional moan or groan. Low level speech with a negative or disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial Expression	Smiling or inexpressive	Sad. Frightened. Frown.	Facial grimacing.	
Body Language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract, or reassure.	
			Total:	

Last edited: 5/19/17

Pain Assessment Algorithm:



Last edited: 5/19/17

APPENDIX F: EDUCATION PRESENTATION SLIDES

Chronic Pain

A Case Study

What you need to follow along

CAROL WOODS

IMPROVING CHRONIC PAIN MANAGEMENT

Why does pain management matter?

- Good pain management can decrease the amount of behavioral disturbances by residents
- Good pain management helps preserve residents' abilities to perform ADLs and social activities
- Some studies estimate that up to 83% of nursing home residents have pain, which means that many may be suffering needlessly
- Pain is part of the F309 Quality of Care standards by which CMS evaluates nursing homes

Algorithm

- This algorithm was developed as a guide to assist in assessing Carol Woods residents with chronic pain.
- It follows a hierarchy of pain assessment techniques:
  1. Resident self-report
  2. Clinician search for potential causes of pain
  3. Resident behaviors, including the use of a behavior-based pain scale
  4. Proxy reporting
  5. Analgesic trial

Case Study Resident

Margret Needamyer-

A 72 year old Caucasian Female recently moved to Building 4. She suffers degenerative joint disease (osteoarthritis). Her mobility has decreased but cognitively she is intact. When you arrive with her morning medications Mrs. Needamyer tells you she is in pain.

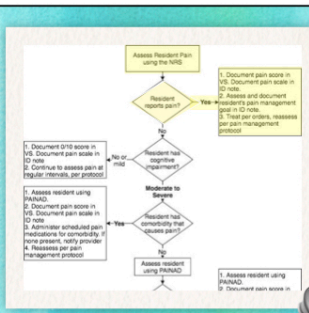
What is the next step?

How to use the algorithm:

Rectangles: actions for nurse

Diamonds: questions or decision points

Arrows: indicate how to progress



Numeric Rating Scale (NRS)

Verbally ask the resident: "On a scale of 0 to 10, with 0 being no pain and 10 being the worst possible pain you can imagine, how would you rate your pain right now?"

Use Best Tool #1 to Assess Resident Pain

- Always ask!
- Assess the resident's pain using the Numeric Pain Rating Scale
- Deliver the appropriate intervention
- Reassess per protocol
- Chart in Answers On Demand
- During report: handoff pain score (and scale used), location, intervention, and effectiveness.

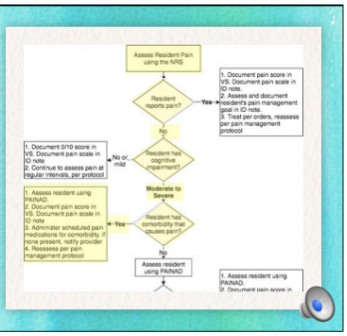
Seven Years Later

Mrs. Needamyer now has advanced dementia and is unable to clearly identify her pain using the Numeric Rating Pain Scale. You know that she has a chronic pain condition.

What is the next step?

How to use the algorithm:

Rectangles: actions for nurse
Diamonds: questions or decision points
Arrows: indicate how to progress



Pain in Advanced Dementia (PAINAD)

	0	1	2	Score
Breathing (Independent of vocalization)	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative Vocalization	None	Occasional moan or groan. Low level speech with a negative or disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial Expression	Smiling or inexpressive	Sad. Frightened. Frown.	Facial grimacing.	
Body Language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract, or reassure.	
			TOTAL (out of 10)	

Use Best Tool #2 to Assess Resident Pain

- Assess the resident's pain using the Pain in Advanced Dementia
- Deliver the appropriate intervention
- Reassess per protocol
- Document in Answers on Demand
- During report: handoff pain score (and scale used), location, intervention, and effectiveness.

AOD

Documentation

What should be documented?

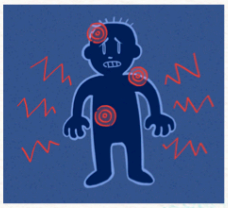
- Resident's pain number – under Vital Stats
- Pain scale used – under ID notes
- Intervention – under EMAR and ID notes
- Resident's pain goal (or inability to verbalize goal) – Under ID notes
- Pain reassessment - Under Vital Stats and PRN med effectiveness

How often should I assess and chart?

- Stable, controlled, chronic pain – at least 1x/week
- Acute or uncontrolled pain – at least 1x/shift
- Reassessment after PRN med – within the shift

Times to pay extra attention to pain

- Changes in a patient's medication regimen
- Returning to Carol Woods after a painful procedure or injury
- Resident displays a change from baseline (ex. More sleepy, more withdrawn, etc.)
- Scheduled therapy or activities



Meaningful Communication

- Unclear notes:
  - "No complaints"
  - "Resident slept"
  - "Pain is well-managed"
- Try instead:
  - "Resident reports 0/10 pain on NRS"
  - "RN observed 0/10 pain on PAINAD"
  - "Resident states pain management goal is 3/10. Reports pain at 2/10 after 5mg PRN oxycodone."
- During shift change, it is key to discuss pain in any resident:
  - To whom you have given a PRN pain medication
  - Whose pain regimen (pharmacological or non-pharmacological) have been altered
  - Who have just experienced painful procedures, skin tears, or falls
  - Who are different from baseline

Common Misconceptions

- "I charted everything in my note, so I don't need to chart it in VS or in PRN effectiveness"
- "My resident is quiet/smiling so she's comfortable"
- "She is already sleepy so I'll hold off on her pain medicines"
- "My resident knows to tell me if she has pain"
- "Opioid pain medications are unsafe for older adults"
- "I know my residents so well that I would know if they had pain"

APPENDIX G: SUMMARY OF SHIFT REPORT OBSERVATIONS

Date/Time (All dates in 2017)		Floor	Pre, Mid, or Post	# Residents for whom some discussion was had regarding pain					Other comments
				Overall	Severity	Location	Intervention	Effective-ness	
5/15	3pm	3rd	Pre	1	1 – 3/10 pain	0	1	0	
5/16	7am	3rd	Pre	2	0	0	2	1 – "that was good for her"	Also commented on a med change
5/19	3pm	3rd	Pre	4	0	0	4	1 – "every time you ask her she says it's severe"	Pain not discussed for a patient that "refused PT and was in bed all day"
5/22	3pm	2nd	Pre	1	0	1	1	0	Pain not discussed for patient kicking companion
6/22	3pm	3rd	Mid	5	2 – 6/10 pain, 9/10 pain	1	5	2 – "She had no pain" "When I left him he was calm"	Pain not discussed for patient with multiple wounds/DTIs "Maybe they can pre-medicate her so she can get her therapy"
7/28	3pm	3rd	Mid	5	2 – residents denied pain	0	2	0	Reported on interventions (ex. "pain patches on") without commenting generally on

									patient's pain
7/30	3pm	2nd	Mid	4	0	2	2	1 – “no new complaints and is doing ok”	Pain not discussed in patient with known chronic pain, another patient who complained “ouch, ouch, ouch” during dressing change and then refused dressing change,
8/4	3pm	2nd	Mid	2	0	1	2	1 – “the last one did not touch her pain”	Receiving RN asked questions regarding location of pain, medications, next dose due time
8/9	3pm	2nd	Mid	0	0	0	0	0	Pain not discussed on patient with fall during shift
8/12	3pm	2nd	Mid	6	4 – “denied pain”	0	3 (including 1 patient w/morphine for comfort care)	1 – “it was effective”	Expressed concern for patient who was not medicated for pain before ambulance transfer
10/9	3pm	3rd	Post	6	0	0	6	1 – “doing fine on the Tylenol"	

10/10	7am	3rd	Post	3	0	0	3	0	Many comments about patients needing pain medicine for sleep or anxiety rather than pain
10/10	3pm	2nd	Post	2	0	2	2	0	
10/11	3pm	3rd	Post	3	1 – “denied pain”	1	3	0	Pain not discussed for a patient reported to be very unhappy today
10/13	7am	3rd	Post	3	1 – “said the pain was a lot”	3	2	1 – “got to sleep after"	
10/13	7am	2nd	Post	3	0	0	2	1 – reassessed sleeping	
10/18	7am	2nd	Post	1	0	1	1	0	
10/20	3pm	2nd	Post	2	0	2	2	1 – “seemed to help”	Pain not discussed on patient that fell off toilet twice

Summary of Nurse Interviews:

15 CWRC nursing staff interviewed at October Skills Fair and October shift reports

1. Which shift do you most often work?

1st shift	4
2nd Shift	3
3rd Shift	3
Varies	2
Other Role	3

2. Where do you most often work?

2nd Floor	5
3rd Floor	3
Building 6	3
Varies	1
Other Role	3

3. Full-Time, Part-Time, or Per Diem?

Full-Time	11
Part-Time	2
Per Diem	2

4. Were you able to complete the training on the new pain assessment algorithm?

Yes	10
No	5

1. **If yes:**
   a. **Did you complete training at the May Skills Fair or online via Relias?**

Skills fair	7
Relias	3

   b. **What are your thoughts about how the training was delivered?**

Good • Clear • Helpful • Thorough	9
Okay	2

Too long/too many stations	3
Liked getting info online	1
Tiring to have skills fair after working	1

   c. **How do you feel the new pain process is going?**

Positive • Mostly pretty useful • Self-explanatory • Nurses are looking for different signs of pain • Nurses are using pain scales more consistently in admission notes and incident reports	7
Negative • Difficult to remember everything in the training • Trying to remember if we've been using it • Too much duplicate charting • Nurses don't chart VS so they don't chart pain there • Hard to remember to chart everything required	3 2

   d. **What barriers have you identified with the new process?**

Difficult to assess pain in this population • Some residents have trouble communicating • Some residents are always 10/10 • Resident's can't give pain score when they are sleepy • Some residents don't exhibit pain behaviors • Some residents use pain to mean something else, like loneliness	6 3 2 1 1 1
Hard to change old habits	2

Haven't worked with it enough to know	1
Materials/printouts not accessible	1
Staffing and turnover - only the necessities get done	1

e. Is there anything you would change about the process?

No • I need to just use it more/become more familiar • It's hard to come up with something that works for everyone • It works for me • It's to the point	8 3 1 1 1
Yes • Charting/documentation (see question 8)	2

f. Do you think two assessment scales (the PAINAD and the NRS are effective pain assessment tools in your residents? Why or why not?

Effective • Familiar with NRS and think it's useful • Works for me and my residents • Plain and specific • One for residents who understand and one for behaviors	6
Somewhat effective • Incongruence between patient verbalization and behavior • Works for some residents but not those with bad dementia	2
Not effective • Residents do not understand the NRS pain scale • Less familiar with PAINAD so don't use it as much	3 2 1

2. **If no:**
    a. **What barriers did you face that made it difficult to complete the training?**

Never assigned to Relias training	3
New employee	2
Don't know how to access Relias	1

    b. **What would have made it easier for you to complete the training?**

Tech support for accessing Relias	2
Not always possible to leave floor for skills fair	1
Online is easier to do	1
Have it assigned on Relias	1
None	1

3. How can we better support you throughout this process?

Refresher programs throughout the year	4
Be present to answer questions	3
Ongoing evaluation	1

4. What other resources or information would help you with the assessment of pain in your residents?

Cheat sheet/pocket card	4
I need to become more familiar with it	3
More education/Training	2
More time to investigate pain with residents	1
More support from SON	1
Getting information from people in the same situation or having the same difficulties	1

5. Do you have any additional thoughts or suggestions?

Access to different kinds of pain scales • Use Wong-Baker scale	2 1
Would be helpful to have something portable/Printout to refresh	2
Change charting options: • Charting system does not give enough options • Hard to review charting to get a picture of resident behavior • Change the charting options • Pain in VS section provides no useful information • Too many steps involved in navigating charting • Nurses do not chart consistently	2
Involve RLSs	1
Dedicate time to train new staff on this	1

APPENDIX I: EMR REPORT

Carol Woods Nursing Staff
Interview Comments Regarding EMR and Charting

Note: These comments are from field notes taken during interviews and thus are not direct quotes

1. **Relevant pain information is not centralized. Nurses have to chart pain in different locations**
    a. Nursing still writes notes, which is still charting, but it feels like we have to go to 10 different places to get the picture of a resident's behavior. I don't check the pain in VS very often; I usually just go into notes because it doesn't give me anything. I will go into the med effectiveness more often because you can get more information. It's just an extra step.
    b. If there were more consistency in the charting it would make my job easier. It would be helpful to see that.
    c. For me personally, the only issue I have with is there is so much duplicate charting. Like there is a spot in the eMAR and also in the vital stats, and then again with the reassessment in the pain area, and then there is a note, so it seems like there is a lot of charting so that's my problem that I have. I'll be very honest that sometimes I forget the vital stats section because I've done it somewhere else. Is it just a one-time thing under the vital stats? The nurses don't do vitals and the only time we reference that is if we're looking at vital signs. I'm just going to have to get into the habit of charting in different places. Do you want the med effectiveness charted in VS and med effectiveness?
    d. In a perfect world, if this was something that was built into a power chart (AOD, when you sign in as power chart and pick whatever your assignment is, it will show you your residents faces and then like a spreadsheet and it gives you alerts about what is due and coming up due, it could be built into something like that so you'd only have to type it in once it would be more easily accessible and also get us in the culture of doing it. Also, it would be part of Vital Stats and we could get more statistics and then we could pull more data and track someone's pain.

    Recommendation: Consolidated or at-a-glance information for nurses. Having pain charting available during PRN medication administration/scanning. Eliminating multiple possible places to chart pain information
2. **Nurses find the current pain charting options under vital stats to be limiting**
    a. Not happy about charting – only 2 options – pain scale or not measured, so this makes it very limited, we need more options. What change would make most impact is changing charting options. What kind of value is it giving you

if you're only getting "pain scale" and "not measured"? We need access to different kinds of pain scales.

b. I did have a resident who came for rehab and she said I just can't [score my pain from 0-10]. So I said are you having minimal amount of pain, or moderate, so I have basically going by the words under the scale, so I could write that in my note. Because if they can't talk about their pain at all I can used the PAINAD

Recommendation: Build in different types of pain scales into the EMR so nursing has access to them without having to document in a note

3. **Nurses have to find printouts or search applicable policies to recall information**
    a. I can't remember all of it. I think it would be helpful if we had something we could carry around. I'll have to look on the med cart to see if the laminated copy is there.
    b. If I just had the printout again, then I could look at it. You know you get into old habits with old stuff.
    c. I was looking for [a handout] the other day and I had to go online and print one. I knew about the pain scale and I looked it up and printed it out. So having access [to the materials] would be great.
    d. I think we should have access to [the materials] on the cart or the computers

    Recommendation: An EMR that can be integrated with policies would help centralize information
4. **There are no prompts to document medication effectiveness**
    a. It's going good. If you don't forget to go back and chart the effectiveness, I try to do it before I leave but sometimes it's easy to slip.
    b. I think they should change the way we document effectiveness

    Recommendation: An EMR that can prompt nurses to document a pain reassessment after pain intervention
5. **Involving RLS's and having them practice to their full scope of practice**
    a. [It would be helpful to] have the RLS's chart what they see – but [this is currently] inconsistently done and we might need to train them better – training for RLSs and nurses would be helpful. Consistency is generally a training issue.

    Recommendation: Streamline RLS documentation and enable RLS's to document behavioral manifestations of pain/discomfort, as training allows

Demographic Info

15 CW nursing staff members were interviewed at October Skills Fair and October shift reports

1. Which shift do you most often work?

1st shift	4
2nd Shift	3
3rd Shift	3
Varies	2
Other Role	3

2. Where do you most often work?

2nd Floor	5
3rd Floor	3
Building 6	3
Varies	1
Other Role	3

3. Full-Time, Part-Time, or Per Diem?

Full-Time	11
Part-Time	2
Per Diem	2

4. Were you able to complete the training on the new pain assessment algorithm?

Yes	10
No	5

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