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Cohort Study Of Pain Behaviors In The Elderly Residing In Skilled Nursing Care

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COHORT STUDY OF PAIN BEHAVIORS IN THE ELDERLY RESIDING IN SKILLED NURSING CARE

by

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ABSTRACT

An integral concern across care settings is the prompt intervention for patients suffering with pain. Long-term care (LTC) settings present with unique challenges to assess and manage pain in resident populations. Pain assessment is especially challenging, because residents have varying degrees of cognition to communicate their pain, and clinician/staff knowledge of pain symptoms may be lacking. The purpose of this research was to improve the measurement of pain and outcomes of care for the elderly residing in skilled nursing care, especially those with cognitive-impairment. The specific aims of this study were to: 1) Determine the magnitude of the relationship between pain behaviors and a measurement model hypothesized for pain; 2) Test the construct validity of a pain measurement model; 3) Examine the concomitance of pain and cognition in a three-year longitudinal analysis. The research questions answered: 1) Is there a difference in the prevalence of pain in cognitively intact versus cognitively-impaired residents; 2) Can a theoretically derived model of pain aid in detecting pain across all cognitive levels; and 3) Do pain and cognitive status concomitantly correlate? The goal was to examine the covariance model of concomitance of pain and cognition to more accurately construct theoretical models of pain to then include additional resident care factors in future research.

Traditional self-reports of pain are often under-assessed and under-treated in the cognitively-impaired (CI) elderly resident. Having additional measures to detect pain beyond self-reports of pain intensity and frequency increases the likelihood of detecting pain in populations with complex symptom presentation. Data collected from skilled nursing facilities offer exceptional opportunities to study resident demographics, characteristics, symptoms, medication use, quality indicators, and care outcomes. The Minimum Data Set-Resident Assessment Instrument (MDS-RAI) 2.0, a nationally required resident assessment tool, must be

completed on every resident in a Medicare LTC facility within 14 days of admission, quarterly, annually and with significant changes in resident status. Because the MDS is widely used and recognized in LTC settings, core items from MDS [i.e., pain frequency (J2a) and pain intensity (J2b)] along with additional MDS items hypothesized to signify pain were analyzed in the pilot measurement model. Ten core items from MDS were used: 1) Inappropriate behavior frequency (E4da); 2) Repetitive physical movements; 3) Repetitive verbalizations (E1c); 4) Sad facial expressions (E1l); 5) Crying (E1m); 6) Change in mood (E3); 7) Negative statements (E1a); 8) Pain frequency (J2a); 9) Pain intensity (J2b); and 10) Cumulative pain sites scores. All indicators of pain were significant at the $p<.01$ level.

A longitudinal cohort design was used to answer if a concomitance exists between pain and cognition. Data were collected from MDS annual assessments from 2001, 2002 and 2003 for residents across the United States. The sample consisted of 56,494 residents age 65 years and older with an average age of 83 ±8.2 years. Descriptive statistics, ANOVA and a covariance model were used to evaluate cognition and pain at the three time intervals.

ANOVA indicated a significant effect ($p<.01$) for pain and cognition with protected t-tests indicating scores decreased significantly over time with resident measures of pain and cognition. Results from this study suggest that: 1) Using only pain intensity and frequency, pain prevalence was found in 30% of the pilot population, while 47.7% of cognitively intact residents had documented pain and only 18.2% of the severely CI had documented pain, supporting previous research that pain is potentially under-reported in the CI; 2) Parsimonious measurements models of pain should include dimensions beyond self-reports of pain (i.e., cognitive, affective, behavioral and inferred pain indicators); 3) Model fit was improved by using specific MDS items in the pain construct; 4) Longitudinal analysis revealed relative stability for

pain and cognition measures over time (e.g., larger stability or consistency was found in cognitive measures than the measures of pain over the three-year period); 5) Crossed-legged effects between pain and cognition were not consistent; 6) A concomitant relationship was not found between pain and cognition. The relationship was significant ($p<.01$), but associations were weak ($r=0.03$ to 0. 08). Pain or cognition should not be used as a predictor of the other in theoretical models for similar populations.

The MDS is a reliable instrument to follow resident attributes, quality of care, and patient outcomes over time. The development of more accurate assessments of pain may improve resident care outcomes. Ineffectively intervening on the pain cycle is posited to cause secondary unmet needs that affect the resident's quality of life. Findings support the importance of improving clinical outcomes in the management of pain in the elderly residing in long-term care. Deficits in the treatment of pain highlight the impetus to support health policy change that includes pain treatment as a top health priority and a quality indicator for federally funded programs supporting eldercare.

This dissertation is dedicated to my husband without whose love, support and patience, this dissertation would not have been possible. Thank you also to my parents for their limitless words of encouragement and believing that education beyond all else is so important.

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LIST OF ACRONYMS/ABBREVIATIONS

ACRONYM	Definition of Acronym
ADL	Activities of Daily Living
AGS	American Geriatrics Society
AHQA	American Health Quality Association
ASPMN	American Society for Pain Management Nursing
CI	Cognitively-impaired
CMS	Centers for Medicare and Medicaid
C-NDB	Consequences of Need-Driven, Dementia-Compromised Behavior
CPS	Cognitive Performance Scale
DRP	Drug-related Problem
HR-QOL	Health Related Quality of Life
IRB	Institutional Review Board
LTC	Long-Term Care
MDS-RAI	Minimum Data Set-Resident Assessment Instrument
MMSE	Mini-Mental State Examination (Folstein)
NDB	Need-Driven, Dementia-Compromised Behaviors
NHQI	Nursing Home Quality Initiative
NIH	National Institute of Health
NSAID	Nonsteriodal Anti-Inflammatory Drug
PS	Pain Scale
QI	Quality Improvement
QOL	Quality of Life
RAP	Resident Assessment Protocol
SNF	Skilled Nursing Facility
TJC	The Joint Commission; formally known as Joint Commission on Accreditations of Healthcare Organizations (JCAHO)

CHAPTER 1: INTRODUCTION

The management of pain is a primary healthcare concern across all age groups and social strata.[1] The goal of pain management is to lessen pain and relieve discomfort and suffering. Pain management in nursing home residents is a major concern to policy makers and those who care for the elderly, because despite efforts to improve care, pain continues to be under-assessed and under-treated. It is estimated that 49-83 % of 1.8 million nursing home residents suffer with chronic daily pain.[2-4] Cognitively-impaired individuals, who are confined to skilled nursing care, are at the highest risk for inadequate pain management. Research on assessment and treatment of pain for cognitively-impaired residents lacks consistent documentation and interventions.[5-14] Pain is not assessed consistently or well in the cognitively-impaired elderly, resulting in under-treatment. Assessing pain in the elderly with advanced stages of cognitive decline is difficult related to decreasing ability, or inability to communicate their pain verbally.

Action plans in fall 2008 from the Centers for Medicare and Medicaid (CMS) recognized a system-wide inability to provide for appropriate pain relief measures for the elderly. Revisions of the regulatory requirements for pain management were slated to change in the *Interpretive Guidance to Surveyors for Long Term Care Facilities* to correct for these deficits.[15] Essential in strategic planning was the alignment of measures to match federal surveys and certification priorities. Missing in care protocols was how to improve assessment and treatments with common quality indicators, when vital pain information is lacking from these surveys. The Minimum Data Set-Resident Assessment Instrument (MDS-RAI), used nationwide in Medicare funded facilities, contains items to extrapolate pain states, but does not document interventions taken to treat pain. A MDS-RAI instrument to measure pain in the cognitively-impaired resident does not exist to date.

Specific Aims

The purpose of this study was to improve the measurement of pain and outcomes of care for the elderly residing in skilled nursing care, especially those who are severely cognitively-impaired. Pain behaviors will be analyzed using data from the MDS-RAI. Three specific aims guided the study:

1) Determine the magnitude of the relationship between pain behaviors and a measurement model hypothesized for pain.

2) Test the construct validity of a pain measurement model.

3) Examine the concomitance of pain and cognition in a three-year longitudinal analysis.

The research questions answered:

1) Is there a difference in the prevalence of pain in cognitively intact versus cognitively-impaired residents?

2) Can a theoretically derived model of pain aid in detecting pain across all cognitive levels?

3) Do pain and cognitive status concomitantly correlate?

This study obtained point-in-time resident data to develop a model assessing pain in the elderly. A large dataset stratified by subgroups was to answer the research questions and increase the generalizability of the findings beyond the smaller scale studies conducted to date on pain behaviors. The long-term benefit to health policy offers quantifiable methods to measure pain for this population, serving as a foundation to implement changes in care management, and enable assessments that provide relevant data to determine treatment regimens for this vulnerable population.

Significance

Care environments should strive to promote holistic, resident-centered care to ensure quality of life.[16] Negative behaviors in the care environment that can be correctly identified may improve health outcomes and reduce complications to enable cost-savings from using appropriate interventions, and help reduce caregiver burden and burnout.[17] Understanding the patterns and associations of pain behaviors improves the ability to more accurately anticipate care needs and improve the resident's quality of life. Pain is an abstract, intangible concept, experienced by an individual. Multiple signs or indicators may be an expression of that pain. Categorizing indicators of the latent construct, pain, would add significant value to assessing pain more accurately.

Pain that is promptly identified and treated at an early onset may stop the pain cycle and lessen the event of disruptive behaviors. If pain behaviors are intervened upon at an earlier stage, suffering could be lessened and secondary co-morbid complications might not occur. Decreasing pain and its associated behaviors could lessen disruptions to staff or other residents, increasing unit/facility safety and improving group dynamics. Pain needs met with timely interventions may decrease resident wandering or other physically aggressive behaviors, improve resident safety and reduce the incident of falls.[18] Cost savings would occur by the use of more efficacious interventions based on the resident's needs, not just the needs of the staff to reduce unit disruptions.[19, 20] Behaviors managed with appropriate interventions might prevent transfer of a resident to a higher level of care to regain unit order.[21] Staff can be empowered to correctly interpret pain behaviors, which may reduce burnout from routinely dealing with combative residents.[19]

Lacking are research findings based on large-scale data to gain general perspectives across resident types to link pain behaviors. Research evaluating pain behaviors answers valuable questions to form links between symptoms, behaviors, and resident quality of life to study why gaps in care exist and to then discover patterns in secondary needs (e.g., depression, weight loss, decreased activity, functional declines, or immuno-compromised states).[22]

Background

Theoretical Framework

The theoretical framework defines and describes the presenting problem, and models the processes producing the presenting problem behaviors related to assessment of pain in cognitively-impaired elders. Using a theoretically-derived framework allows researchers to incorporate background and proximal factors to explain pain behaviors.

This study integrated the Consequences of Need-Driven Behaviors as the theoretical framework. Need-driven, dementia-compromised behaviors (NDB) are the behaviors a resident displays to communicate underlying needs. Algase and colleagues [23] developed the first model of needs-driven behaviors (Figure 1.1). The expression of NDBs is specific to the individual and dependent upon background and proximal factors. Background factors include neurological, cognitive, psychosocial and general health causes. The proximal factors vary greatly and are dependent upon environmental and personal causes, like unit staffing, or pain with movement. Proximal factors are the most likely to cause NDBs. Using the NDB as the foundational framework for this research enables one to draw a link between cognitively-impaired residents (background factor) and proximal factors, like pain, to understand why NDBs occur. This process allows the clinician to isolate actions with the highest probability of triggering the

behaviors.[23] From this knowledge, the most efficacious, targeted interventions for the need-driven, dementia-compromised behaviors can be made.[17]

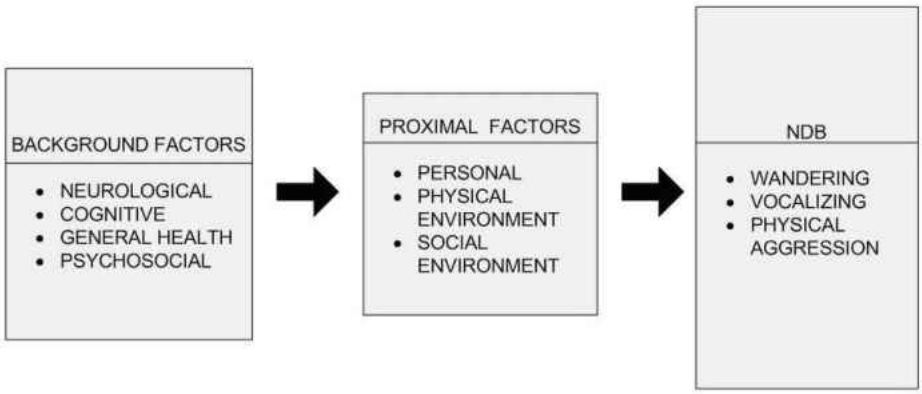

Figure 1.1. Reprinted with Permission, Algase et.al.[23] Factors Affecting NDB

The Consequences of Need-Driven, Dementia-Compromised Behavior (C-NDB) extend the original NDB adding secondary needs that arise from primary needs not being met.[24] The darkened circles of Figure 1.2 include Algase's model with the additional concepts added by the extension of C-NDB. Kovach expands the model to include outcomes or consequences of NDBs. The resident expressing the needs behaviors (i.e. primary NDB) after a period have additional needs stemming from the original needs not being met. The unmet needs affect resolution of the primary NDB through additional care, personal, and contextual factors. Care factors describe how the NDB influences the caregiver's ability to anticipate resident needs and can cause caregiver burnout. Personal factors describe resident characteristics like affect (facial expressions), and the physical and functional status of the individual. Contextual factors clarify how environmental stressors caused by unit disruptions might increase resident transfers to higher levels of care in order to restore calm to care units.

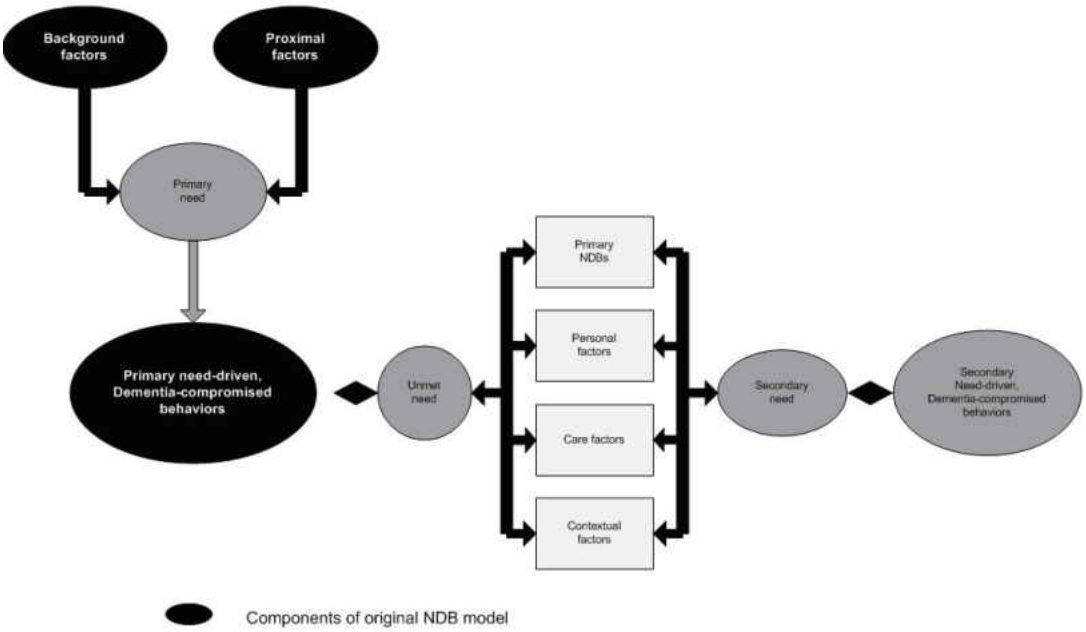

Figure 1.2. Reprinted with Permission, Kovach et. al.[24] Model of C-NDB

Of primary interest in the C-NDB model are cascading effects. Cascading effects are not shown in Kovach's model, but are an integral aspect of explaining the connection between proximal/background factors, primary needs, primary need-driven behaviors, outcomes of unmet needs, secondary needs, and the arising secondary need-driven behaviors. Cascading effects are a result of proceeding stages of unmet needs (Table 1.1).

Table 1.1. Example of Cascading Effects

Proximal or background factors	Primary Need	Primary NDB	Outcomes of unmet needs	Secondary need	Secondary NDB
Pain	Analgesic	Yelling, stated pain, bracing affected area, hitting	1. Fall with fractured hip 2. Loss of mobility	1. Analgesic 2. Increased need for assistance with ADLs 3. Pressure ulcer	1. Loss of appetite, weight loss 2. Irritability
Constipation	1. Increased activity 2. Fluids 3. Laxative 4. High fiber diet	Agitation, wandering, restlessness	1. Increased unit disruption 2. Social isolation 3. Abdominal bloating and discomfort	1. Increased socialization 2. Medication for anxiety and bloating	Increased wandering and aggression

The primary problem is the caregiver's inability to comprehend needs and the inability of the person to make his/her needs known (Figure 1.3). Need driven behaviors are distracters to the real problem of underlying pain. Because a standardized behavioral tool to assess pain does not exist, the uniformity of skill to detect pain is quite difficult for clinicians and ancillary support staff. The complexity of cascading behaviors, as an overlay of behavioral symptoms, is a difficult problem to solve. The observer who is able to understand resident behaviors as sign of needs that are not being met, could lessen interpreting these behaviors simply as an aggravating, disruptive resident.

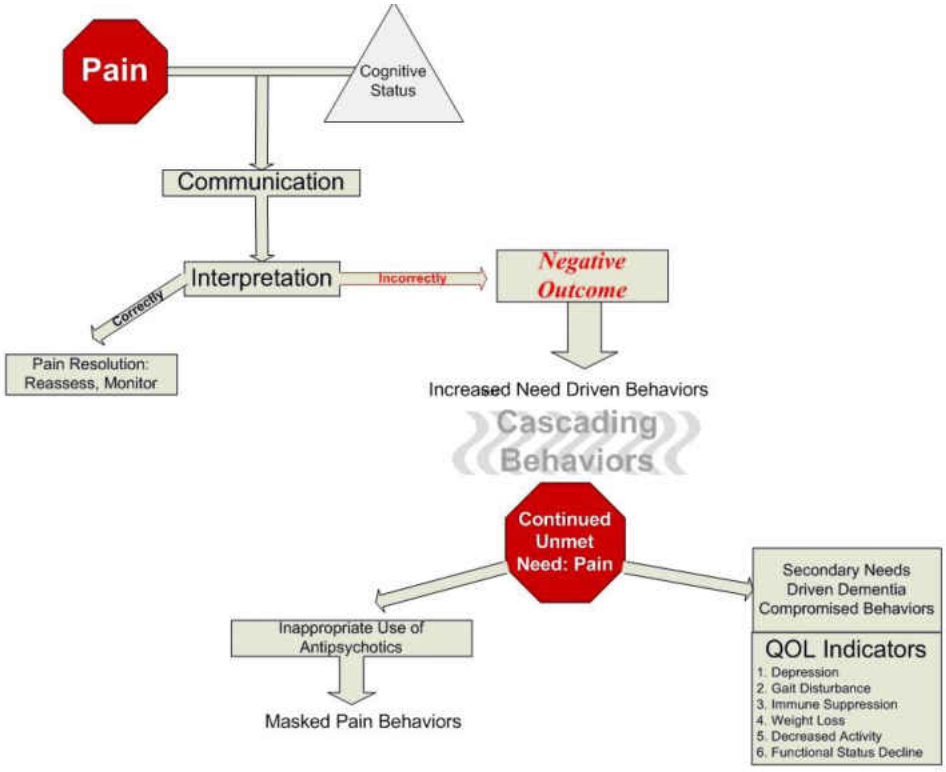

Figure 1.3. Theoretical Framework©, Allison Burfield

Residents labeled as difficult are often physically or chemically restrained to control unruly behaviors. The administration of antipsychotics or other psychotropic medications masks pain behaviors and further dulls the resident's ability to communicate their needs, which is potentially the last line of defense the resident could use to express pain. Treatment planning for residents requires multidisciplinary coordination and perseverance in finding underlying sources of discomfort.[19] Long-term neglect of pain from unmet needs without treatment results in the resident progression to acute states of delirium, hallucinations, delusions, and further declines in cognitive state.

Concepts of the Framework

The theoretical framework for this study integrated the NDB model and the C-NDB. In the figure 1.3, pain is depicted as a proximal factor, and cognitive status describes the resident's background state. A combination of pain and the resident's cognitive state influence the

intensity and method of communication. The staff interprets these factors, resulting in either resolution of the resident's pain, or incorrect interpretation of the pain behaviors. Incorrect interpretation causes negative outcomes in the resident's care and increased need driven behaviors with a cascade of behaviors/effects. The resident's pain remains unresolved, but pain behaviors escalate. To manage the perceived difficult behaviors and unit disruptions, residents are given antipsychotic medications, which further mask pain behaviors. Secondary needs-driven dementia compromised behaviors (consequences) arise, because of the long-term effects of underlying unresolved discomfort, decreasing the resident's quality of life.

Pain

Starting at pain as the primary need in the proposed model (Figure 1.3), this symptom describes a state of physical suffering or discomfort. Pain is a subjective experience, and it is difficult for others to infer the qualities of pain that are felt by an individual. The treatment of pain usually depends on one's ability to express the magnitude of discomfort verbally and to receive some type of intervention.[25] Facial reactions to pain become increasingly important to interpret as self-reporting abilities diminish with cognitive decline.[26] Pain causes disruptive behavioral outbursts in the severely cognitively-impaired.[27] Residents who are more cognitively intact use a progressive level of verbal cues to express pain.[27] Evidence shows that as the resident's cognitive status declines, more physical behaviors start to occur to express pain. The caregiver must not simply treat behaviors as disruptions to daily routines, but a deeper issue of unmet needs.[28] A better understanding of pain behaviors could assist in changing health provider attitudes and responses from annoyance with "disruptive behaviors" to resident-focused, symptom resolution.[29]

Traditional tools like self-reporting pain scales are not effective as the sole means to measure pain in individuals, who are unable to verbally communicate their pain, such as those with cognitive impairment. Tools that incorporate self-reporting, observational, psycho-affective, trace correlations to disturbances in activities of daily living, and are easy for the clinician to use, have the most pragmatic utility as a standardized tool.[30-32]

Cognition

Cognitive status is the condition of the resident's conscious intellectual activity like reasoning, remembering and thinking. The resident's cognitive status determines the ability and at what level the resident communicates with others. Cognitive decline often follows a close association with functional decline, so adding information about the role of long-term unmet needs can help clarify how proximal factors influence this relationship.[33] Appropriate interventions may result in the delay of functional disability and cognitive decline.[34] The antecedent and consequences in the triad of pain, cognitive status, and functional decline are difficult to determine. Pain as a precipitating factor along with the resident's cognitive status can help explain why the resident communicates in they manner he/she does, and why caregivers might infer these cues correctly or incorrectly.

Communication and Interpretation

Communication is a two-way process. The communicator sends information to the receiver, who interprets verbal and nonverbal cues. In the absence of explicit verbal directions, the individual uses body language and existing verbal sounds to infer meaning. The elderly with

impaired cognition use behaviors to communicate in the absence of the ability to verbally state their needs, because of a combination of impaired cognitive functioning and neurological damage from the progression of disease.[35, 36]

Clinicians report difficulty in categorizing pain in cognitively-impaired residents.[7, 20, 37-39] A recent state of the science report on pain management suggests that an increased awareness of what pain is, would facilitate and improve the assessment and management of pain for this population.[40] Knowledge of pain behaviors enables the clinician to be able to more accurately assess and interpret symptoms and intervene in the pain cycle.

Need-Driven Behaviors

Need-driven behaviors occur, because primary needs are not being met. Unresolved pain, when not intervened, turns into a negative consequence by incorrectly interpreting behavioral signals. Disruptive behaviors common in residents with dementia, lead to negative consequences, like continued pain or the use of physical or chemical restraints.[41] Ideally, identification of primary need driven behaviors would result in immediate action-resolution and a decrease in dysfunctional behaviors. Personal factors may compound need driven behaviors such as limitations in mobility, depressed mood, or declines in functional state. Additional care factors may exacerbate ignored need driven behaviors like staffing levels, staff burnout, or other unit disturbances. Caregiver burnout and an inability to provide anticipatory care occur on high stress units.[36] Contextual factors of the environment, like unit and caregiver stress, also influence care given to other residents and may lead to a quicker transition of disruptive residents to higher levels of care.

Cascading Behaviors (Consequence)

Continued unmet needs result in secondary needs occurring. Cascading behaviors (effects) happen when the resident's individual needs have not been met, resulting in new needs and behavioral symptoms.[24] Kolanowski and Litaker [17] have posited that treatments tailored to meet individual needs can improve behavioral symptoms. This theory also explains why certain factors produce behavioral symptoms and specific treatments resolve behavioral sources, not just the symptoms.

Inappropriate Medication Use

Current black box warnings administered from the Food and Drug Administration (FDA)[42] caution the use of antipsychotics in the elderly. The wide-spread administration of antipsychotics in nursing homes can be an indicator of inadequate staffing and can trigger quality of care concerns for facility-staff case mix.[43] Antipsychotics mask pain behaviors and also cause other co-morbid complications such as hospital admission or death.[18, 34, 44-46] Evidence is lacking to support the use of antipsychotics to manage behavioral symptoms in the elderly.[46] In addition, the resident should also be monitored for polypharmacy to reduce medication side effects. The focus becomes treating the real underlying problem and not perpetuating drug-related problems (DRP) like polypharmacy from treating medication side effects, or continuing incorrect medications.[47]

The elderly residing in skilled care are vulnerable, because of their reliance on the facilities to be able to deliver and anticipate their care needs. Serial trial interventions targeting the use of accurate interventions resolve resident pain and pain behaviors in late stage dementia.[48] Public policy should sustain an ongoing evaluation of interventions targeted at behavioral treatments. The use of the C-NDB model shows how behaviors are mediated through

appropriate interventions, or exacerbated by inappropriately treating and interpreting symptoms.[24]

Quality of Life Indicators

As the resident's cognition declines, the incidence of secondary unmet needs is postulated to increase from the inability of the resident to communicate needs. Primary and secondary unmet needs decrease the resident's quality of life, and cause disruptive behaviors resulting in staff burnout and a toxic unit environment, affecting other residents. An innovative aspect of this study is the investigation of associations between pain and quality of life measures, validating a temporal sequence of events to improve the understanding of related, moderating, and intervening variables.[36] Indicators of poor outcomes for quality of life measures are depression, gait disturbance, immune suppression, weight loss, decreased activity, and functional decline.

Overview

This dissertation followed the University of Central Florida's nontraditional format developing three separate manuscripts focusing on a state of the science of pain management in the elderly, a pilot of the pain measurement model, and a longitudinal study of the concomitance of pain and cognition. The state of the science entitled, *How Do We Ensure Pain is Properly Assessed and Treated in the Elderly? A State of the Science Review*, examined and synthesized the literature for pain concepts, clinical practice guidelines, and the state of the science in the assessment and management of pain in the elderly residing in LTC. The second manuscript, *A Pilot Study of Pain Measurement Models Using the MDS-RAI 2.0,* evaluated the relationship between hypothesized pain behaviors and a measurement model proposed for pain, derived from

the Minimum Data Set-Resident Assessment Instrument (MDS-RAI) 2.0. The third manuscript entitled, *A Study of Longitudinal Data Examining Concomitance of Pain and Cognition in an Elderly Long-Term Care Population,* examined if a concomitant relationship exists between cognition and pain in an elderly population residing in long-term care.

CHAPTER 2: HOW DO WE ENSURE PAIN IS PROPERLY ASSESSED AND TREATED IN THE ELDERLY? A STATE OF THE SCIENCE REVIEW

Introduction

In 2006, a coalition of long-term care providers, caregivers, quality and medical improvement experts, government agency representatives, and consumers launched a proposal to promote Quality First, a Nursing Home Quality Initiative (NHQI).[49] Five of the eight NHQI recommendations focus on pain management. The remaining items are a result of poorly managed pain, or pain behaviors. A state of the science review examining pain in the elderly, those most vulnerable, can clarify what science has achieved in building our knowledge of pain management for the elderly and opportunities to advance care.

Background

Pain management is a common health concern across all ages. Of approximately 1.8 million residents living in skilled nursing care facilities, an estimated 49-83% experience chronic pain.[2, 4, 50] Despite decades of research on pain management in nursing homes, research findings consistently indicate pain is poorly assessed and managed in long-term care, especially for those with impaired cognition.

Pain negatively affects the individual's ability to function, live independently and enjoy an overall quality of life.[51] Pain is linked to depression, decreased socialization, an inability to sleep, weight loss, gait disturbances, immune suppression, and increased rates of morbidity.[22, 52] Pain treatment in long-term care facilities is complex, because residents have varying degrees of cognitive function. It is essential to implement correct interventions to manage pain. However, healthcare providers must possess the knowledge of how to assess pain across a spectrum of

residents with varying levels of cognitive competency. This review examines and synthesizes the literature of pain concepts, clinical practice guidelines, and current assessment and management strategies of the elderly residing in long-term care.

Significance to Clinical Practice

Considerable anecdotal evidence exists on pain in the older adult, but relatively few studies focus on cognitively-impaired (CI) residents. Ethical and moral considerations should be given to treating pain in those unable to communicate. Legal consequences are significant when pain is not adequately assessed and treated.[53-56] The Joint Commission (TJC) requires the close monitoring of pain management and evaluates institutions on the appropriateness of the interventions taken. [57, 58] The American Health Quality Association (AHQA) regularly publishes plans for improving pain management developed by exemplary healthcare organizations. The Centers for Medicare and Medicaid Services (CMS) collect data on all residents in Medicare facilities, which has significant potential to monitor how pain is being assessed and managed.[59]

Performing a thorough assessment of pain in cognitively-impaired residents with behavioral changes cannot be underestimated.[60] Cognitively-impaired residents may struggle with communicating their needs. The use of verbal reports as the sole means of detecting pain, can significantly lessen a clinician's ability to accurately detect it.[6, 61-66] The severely cognitively-impaired are at the highest risk for untreated pain, because of an inability to give responses to direct inquiries of their comfort. Even for those who are able to report pain, analgesic interventions are still not consistently given, even with direct reports of pain.[67]

Clinicians can determine the best guidelines for practice by identifying aspects of pain assessment and treatment that exemplify quality patient outcomes.[61] This requires a synthesis of

the most current information on successful methods to assess and manage pain to measure the effectiveness of interventions taken.

Method

This review summarizes the assessment, treatment and management of pain in residents living in long-term care, and addresses the factors contributing to the under-assessment and under-treatment of pain, and behaviors linked with unresolved pain. Peer-reviewed journal articles were found using database searches in Academic Search Premier, Blackwell Synergy, CINAHL, MEDLINE with CSA, OVID, and PsychInfo. Additionally, online sources, review articles and expert panel discussions were selected. The reference lists of the articles were also used to identify additional sources. Search parameters were limited from January 1990 to current journal articles. Setting search parameters for 1990 and onward gave a broad overview of how pain research has evolved. Studies were included if pain management in a skilled nursing setting was discussed. The articles chosen were evaluated for quality to be included in the literature review. The articles must have met the following criteria:

- A clearly stated purpose and objective
- Pertinent and comprehensive sources cited in literature reviews
- A clear description of theoretical frameworks and/or a provision of background information
- Clearly defined and identifiable variables
- Research designs that allowed a research question to be answered or a hypothesis tested
- Methods was clearly stated and appropriate to the type of study conducted
- Research design and methods described
- Evidence supported with appropriate statistical analysis or qualitative methods

- Findings evaluated for reliability and validity issues

Search Terms and Definitions

Terms used to conduct the literature review were *pain, assessment, dementia* and *cognitive impairment*. "Pain" is the state of physical suffering or discomfort. The terms "discomfort" or "physical suffering" are used interchangeably throughout the literature review to describe pain. "Assessment" is the use of a systematic method to evaluate and monitor pain. The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV)[68(p133)] defines "dementia" as "characterized by the development of multiple cognitive deficits (including memory impairment) that are due to the direct physiological effects of a general medical condition, to the persisting effects of a substance, or to multiple etiologies…". "Cognitive impairment" is an indication of a change in cognitive function caused by disease or trauma—damaging the thought process, ability to learn and remember, react to emotions, and/or capacity to verbalize in later stages of the disease process. Cognitive impairment defines related difficulties in how individuals distinguish, encode, store, retrieve and use information.[69] Certain medical conditions increase the probability of experiencing or having a progressive onset of cognitive decline. Most research studies examining cognitive decline center on dementia and Alzheimer's disease.

Results

The articles were categorized into pain traits/behaviors, assessment strategies, the efficacy of current pain tools, challenges and barriers to pain assessment, and evidence-based care guidelines. The search query yielded over 800 relevant abstracts. One-hundred and seven articles were kept for scientific relevancy to pain issues in the elderly residing in long-term care.

A total of 35 instruments (Table 2.1) with uni-dimensional and multidimensional domains are included in the review.

Table 2.1. Pain Tools Used to Assess Pain in the Elderly

Name of tool	Description	Self-reporting or observational tool?	Cited as effective tool to assess pain in severely CI?
Abbey Pain Scale[5]	Six item scale: Vocalization, facial expression, change in body language, behavior change, physiological change, and physical changes	Observational	Yes
Assessment of Discomfort in Dementia (ADD) [37, 70, 71]	Does not measure pain, but establishes a protocol to reduce the under-detection/under-treatment of pain. Combines assessment and intervention strategies. Not tested on the experimental level. Protocol is structured in five steps that include a physical assessment, review of history, categorizing painful conditions, affective assessment and implementation of non-pharmacological measures [37]	Combination methods and protocol	Yes
Checklist of Nonverbal Pain Indicators (CNPI) [7, 70, 72, 73]	Identifies a pattern of behavior that reflects physical, emotional, psychosocial, intellectual, cultural or spiritual distress. Can be used to monitor the effectiveness of interventions. Six Pain Behavior categories: Revised from the Alabama Pain Behavior Scale. Includes five nonverbal behavioral indicators: nonverbal vocalizations (moans, groans, grunts, and cries), grimacing, bracing, restlessness, rubbing the affected area.	Observational	Yes
Color Pain Analogue Scale (CS) [74]	Horizontal scale. Colored bar, the darker the pain the more intense the color.	Self-reporting	No
Colored Analogue Scale (CAS) or Colored Visual Analogue Scale (CVAS): Assessment of Pain Intensity or Pain Affect[40, 75-78]	Non-verbal scale that the patient points to pain level on vertical pain scale. Original CAS was modified and used to assess the intensity of suffering [76]. Degrees of pain coded by color. Vertical scale with severest pain on top. No pain is listed at the bottom and maximum pain is at the top.	Self-reporting	No
Comfort Checklist [70, 79]	Five domains of assessment: vocalization, motor signs, behavioral indicators, facial expressions, and misc. symptoms	Observational	Yes
Discomfort Scale for Dementia of the Alzheimer's Type (DS-DAT) [6, 70, 80, 81]	Nine behavioral indicators of pain. Observational score of 0-3. Pain behaviors are noisy breathing, negative vocalizations, content facial expression, sad facial expression, frightened facial expression, relaxed body language, tense body language and fidgeting. Based on the frequency and intensity of the behavioral symptoms. Rater waits 15 minutes, repositions patient and re-assesses. Time consuming. DS-DAT requires extensive training, and experience of others too time intensive to be used in clinical settings, making DS-DAT too complicated and difficult for routine use.	Observational	Yes
Doloplus-2 [67, 82-84]	Pain assessment in the cognitively-impaired (CI) and rates somatic, psychomotor and psychosocial behaviors as indicators of pain. Five somatic items (somatic complaints, protective body posture adopted at rest, protection of sore areas, facial expression and gaze, and sleep pattern), two psychomotor	Observational	Yes

Name of tool	Description	Self-reporting or observational tool?	Cited as effective tool to assess pain in severely CI?
	items (based on observation of washing and/or dressing and mobility), and three psychosocial items (communication, social interaction, and behavior).		
Faces Pain Scale (Wong-Baker)[61, 67, 75, 76, 78, 85-87]	Self-reporting Tool: Line drawings of faces. One neutral face and 6 faces that represent increasing degrees of pain. Consists of a line drawing of seven faces which express increasing pain (no pain = 0, maximum pain = 6). Patient chooses face which best demonstrates the individual's degree of pain.	Self-reporting	No
Facial Affective Scale (FAS) [75]	Aimed at assessing the affective components of pain. Line drawings of nine faces, ranging in expression from very happy (no pain) to very painful (most severe pain). The original faces were 2 cm high, so they were enlarged up to 4 cm to aid in the visualization of each face. On the back of the faces, numerical values are printed and rage from 0.04 (very happy: no pain) to 0.97 (very painful: most severe pain).	Self-reporting	No
Facial Grimace Scale[7]	Caregiver chooses face that represents patient's pain stated from six faces.	Observational	Yes
Horizontal Visual Analogue (HVAS)[67]	Uni-dimensional, self-assessment pain scale, consists of a 10-cm line anchored by two extremes of pain: no pain and extreme pain. Patients use a vertical sliding marker.	Self- reporting	No
Long Term Care Pain Assessment Tool: Verbal Description [88, 89] (Janssen Pharmaceutical and Research Foundation, 2000)	Rates pain on 1-7 scale, 1=not at all and 7=most severe	Observational	Yes
McGill Pain Questionnaire (MPQ) [87, 90]	Used to determine pain severity. Only two parts used for Scherder's [90] study, the Pain Intensity Visual Analogue Scale 1 and Pain Affect.	Self-reporting	No
Mobilization-Observation-Behavior-Intensity-Dementia Pain Scale (MOBID) [91]	Developed for use in severe cognitive impairment this tool evaluates pain behaviors during standardized active guided movements to infer pain intensity.	Observational	Yes
Multi-dimensional Pain Inventory, Dutch Language Version[90]	7-point rating scale of affective distress.	Self-reporting	No
Non-Communicative Patient's Pain Assessment Instrument (NOPPAIN) [30, 92]	Six pain related behaviors are graphically depicted (pain words, pain noises, pain faces, rubbing, bracing and restlessness. Two dimensions of pain evaluated—presence of pain and pain intensity.	Both	Yes
Nottingham Health Profile[90]	2-point scale meant to measure quality of life. Includes 8 pain questions used to measure aspects of whether the patient experiences pain while ambulating.	Both	For moderately impaired
Number of Words Chosen-Affective (NWC-A) of the McGill Pain Questionnaire[76]	Affective pain scale consisting of five items, each of which contains three affective adjectives. Items are arranged increasing intensity, which allows participants to indicate the nature of the pain (worry, depression).	Observational	No
Numerical Rating Scale (NRS) [39,	Self-assessment rating pain a scale of 0-10. One of the most difficult tools to	Self-reporting	No

Name of tool	Description	Self-reporting or observational tool?	Cited as effective tool to assess pain in severely CI?
[61, 74, 85] *Note also referred to as the Verbal Rating Scale (VRS)	use due to the nuances of the degrees of pain. Pain scale of 0 to 10 rating; rated by Delphi study [61] as being one the best of three. Most commonly used pain scale by nurses. Question whether this rated by the Delphi panel as being best because it has it is accurate or has a long history of use.		
Observed Pain Behaviors Scale [6, 70, 72]	Seven domains: verbal response, facial expression, body language, psychological change, behavioral change, feedback from others and conscious state.	Observational	Yes
Pain Assessment Checklist for Seniors With Limited Ability to Communicate (PACSLAC) [93]	Subscales of the PACSLAC (Social/Personality/Mood Indicators, Facial Expressions, Activity/Body Movement, and Physiological Indicators/Eating/Sleeping Changes/Vocal Behaviors). No published findings for testing with population.	Observational	Yes
Pain Assessment for the Dementing Elderly (PADE) [70, 94]	Contains 24 items and is divided into three domains. Part I, Physical (observable facial expression, breathing pattern, and posture), Part II, Global Assessment (allowing the care provider the chance to rate overall pain of the resident they are caring for), and Part III, Functional, activities of daily living (ADL's) such as dressing,	Observational	Yes
Pain Assessment in Advanced Dementia (PAINAD) [11, 70, 95, 96]	Takes elements from a 0-to-10 visual analogue scale; the Face, Legs, Activity, Cry, Consolability Scale; and the Discomfort Scale for Dementia of the Alzheimer type, and wording from literature describing and defining behaviors. Five items: breathing, negative vocalizations, facial expression, body language, and consolability. Each element of the scale is scored, and the possible total scores of 0 (no pain) to 10 (severe pain) are comparable to the traditional 0-to-10 pain scale.	Observational	Yes
Pain Assessment in the Communicatively Impaired (PACI) [85, 97]	Seven items: three measure specific facial movements or expressions, two measure body movement, and two measure sounds and words associated with pain.	Observational	Yes
Pain Assessment in Noncommunicative Elderly Persons (PAINE) [98]	Uses a comprehensive list of pain symptoms based on systematic questioning of direct caregivers. Validity suggests the tool could be useful in dementia patients.	Observational	Yes
Philadelphia Geriatric Center–Pain Intensity Scale (PGC–PIS) [39]	Self-Reporting Scale patient reports a range of pain (Range 1=no pain to 5= extreme pain).	Self-reporting	No
Pittsburgh Agitation Scale (PAS) [88]	Used to measure agitation, but there is a moderate correlation between agitated state and pain. PAS measure four distinct kinds of agitation: aberrant vocalizations, motor agitation, aggressiveness and resisting care	Observational	Yes
Present Pain Intensity Scale (PPI)-	Self-reported, 6-point, word-number scale used to measure pain intensity at the	Self-reporting	No

Name of tool	Description	Self-reporting or observational tool?	Cited as effective tool to assess pain in severely CI?
subscale of McGill [85, 86]	moment and ranges from 0 (no pain) to 5 (excruciating pain).		
Proxy Pain Questionnaire (PPQ) [70, 99]	Relies on report of caregiver that knows the patient well to determine changes indicative of pain. Asks three questions about the presence (i.e., "Within the last week has the resident experienced pain?"), frequency (i.e., "How often does the resident experience pain?"), and intensity (i.e., "When this resident has pain, how would you describe the extent of the pain?"). The first item is answered with a yes or no, and the remaining items are rated on a 13-point horizontal Likert-type scale (Never, occasionally, moderately often, often, and always for frequency; mild, moderate, and severe for intensity).	Observational	Yes
Verbal Descriptor Scale[61]	Patient is asked if they are experiencing mild, moderate or severe pain.	Self-reporting	No
Verbal Rating Scale (VRS) [74, 87]	Rates pain from none, mild, moderate, to severe. Vertical picture with a continuum scale. None on the top and severe on the bottom. In Wynne, Ling and Remsburg [87] report as 1-10 scale, where patient rates pain to a numerical value.	Self-reporting	No
Verbal Rating Scale (VRS), 6-Point[67]	Consists of a list of adjectives, which describe different levels of pain. Patients were asked to point to the adjective that best describes one's current pain.	Self-reporting	No
Vertical Visual Analogue Scale (VVAS)[67]	Similar to the HVAS scale but is presented vertically, and the line is replaced by a red triangle with its summit facing downward (no pain= 0) and its base at the top (maximum pain =10)	Self-reporting	No
Visual Analogue Scale (VAS) and Mechanical Visual Analogue Scale (MVAS)[74, 87, 90]	Operationally is a horizontal or vertical line, 100 mm in length with word descriptors at each end. The patient marks on a line the point that represents the level of pain that is being experienced. The VAS score is determined by measuring in millimeters from the left hand end of the line to the point that the patient marks. MVAS is a plastic version of the VAS with a slider pointer that moves to the correct level of pain[74].	Self-reporting	No

Pain Traits

Most causes of pain in the elderly are attributed to osteoarthritis, osteoporosis, peripheral neuropathies, recent fracture, or cancer.[100] Pain is a subjective experience, difficult for outside observers to measure. While the intensity of pain experienced from individual to individual is poorly understood [101], the mechanism of how pain is felt, is not. Pain is the communication of peripheral nociceptive fibers to the parietal somatosensory cortex for interpretation in a return circuit, causing a withdrawal reflex from the painful stimulus.[52] Generally, residents who are cognitively intact retract from a painful stimulus and give a clear indication of pain with verbal statements. Initial research speculated that cognitively-impaired individuals felt pain to a lesser degree.[102] The ability to feel pain does not alter with age or the progression of diseases or symptoms, like dementia; however, pain expectancy, perception and willingness to report it does vary.[103, 104]

Altered pain sensory occurs in dementia; however, this does not mean a lack of pain sensory.[30, 52, 76-78, 90, 101, 105] Research provides no suggestion that patients with dementia physiologically experience pain less than other geriatric patients. Conversely, this group of patients may fail to anticipate sensations as painful, have poor recall of pain, and are not be able to verbally communicate to caregivers.[73] While sensory-discriminative parts of pain are preserved even in advanced states of Alzheimer's disease, the cognitive and affective functions related to expectancy and autonomic activity are severely affected.[101] Due to impaired memory, the severe CI individual has no recall to anticipate pain and thus does not have an increased reaction or anticipatory withdrawal to avoid a painful stimulus.

Many behaviors are manifested when a resident experiences pain. Particular verbal, facial and behavioral actions are thought to indicate an individual is experiencing pain.[106, 107]

Actions like rigidity, guarding, bracing, stopping, rubbing, shifting, grimacing, sighing/nonverbal vocalizations, and verbal complaint are typical behavioral cues.[108] Additional behaviors like rapid blinking, facial expressions, physical aggressiveness, agitation, crying, moaning, becoming withdrawn/quiet, guarding, noisy breathing, negative vocalizations and fidgeting are also identified in the research.[80, 109] Unfortunately, one set of signs or behaviors do not strongly indicate pain in all residents. Noting deviations from "normal" behaviors for residents can be key to initially detecting an underlying problem.[110]

Pain assessment

Great variability exists in reported pain from nursing home to nursing home.[50] Residents in rural, for-profit and low occupancy facilities have less documented pain. It is not known if pain is better managed in these types of facilities, or if it is simply underreported.

A lack of knowledge about pain assessment and management contributes to poor assessment and treatment.[7, 70, 111] Clinicians report difficulty distinguishing between behaviors of pain, anxiety, and agitation.[110, 112-114] Solely using self-report of pain is difficult, because of the fluctuating changes in mental status.[69] Pain assessment depends mainly on one's capability to express the magnitude of pain to request some type of intervention.[25] Misreading symptoms may cause caregivers to assume a resident has a behavioral "problem," or is agitated and belligerent. The result of misreading behaviors leads to the incorrect prescribing of medications, increased agitation and disorientation, or the risk for delirium.[69] Residents may be unknowingly allowed to suffer if alternative methods of pain assessment are not used beyond self-reports.[2, 6, 22, 107, 112, 115]

A multidisciplinary and multimodal approach is necessary to make effective assessments and manage pain.[116] It is recommended that pain assessment for CI adults use a combination of physiological and behavioral cues.[109, 117] First identifying potentially painful chronic conditions

and other sources of pain could lessen missing behaviors of pain, instead of attributing escalating behaviors to another cause.[106] Assessments should be completed after non-pharmacologic and pharmacologic comfort measures are taken and then documented. Being aware of pain behaviors during assessments and reassessments while weighing the effectiveness of interventions is important to gauge the benefit of actions taken.[108]

Effectiveness of Pain Instruments

A pain tool does not exist to quantify and differentiate pain behaviors from mental health problems. Research has been conducted on pain behaviors in cognitively-impaired individuals[17, 27, 62, 91, 118, 119], but the need exists to develop a standardized behavioral tool to measure pain in this population. A comparison of organizational protocols against leading pain tools emphasizes the opportunity to develop pain tools that integrate a multidimensional assessment (Table 2.2). While recommendations from the American Geriatric Society (AGS) and the American Society for Pain Management Nursing (ASPMN) incorporate, observational, self-reported and other gold standard measures, knowledge about pain behaviors would be advanced by using multivariate statistical methods (e.g., structural equation modeling) and larger samples to increase the power and generalizability of the study findings.

Table 2.2. Recommended Standards for Pain Instrument Dimensions to Consider for Use with Cognitively-impaired Residents

	Observational Tool	Self-Report	Verbal Behavioral Cues	Physical Behavioral Cues	Facial Behavioral Cues	Psycho-affective	Ease of Use, requirements of specialized training considered	Mobility as Precipitating Event or Noted Decline in Mobility Globally
American Geriatrics Society Panel on Persistent Pain in Older Adults [120, 121]								
American Society for Pain Management Nursing (ASPMN)[122]								
MDS-RAI Impaired Cognitions Pain Tool (Pilot Tool)								
Pain Scale (PS), MDS-RAI 2.0 derived [123]								
Mobilization-Observation-Behavior-Intensity-Dementia Pain Scale (MOBID)* [91]								
Non-Communicative Patient's Pain Assessment Instrument (NOPPAIN) [30, 92]								
Assessment of Discomfort in Dementia (ADD)** [37, 71]								

Grayed areas are the recommended parameters.

*Limited use for those residents bed-bound

**Protocol includes an intervention

Instruments (Tables 2.1 and 2.2) to assess pain ideally should include body language, facial expressions, changes in behaviors, physical states or physiology, ability to console (i.e., behavior persistence), the occurrence of negative vocalizations, and labored breathing as signals for pain.[124] A successful standardized tool must be valid, reliable, brief and manageable for use in the nursing home setting.[125] Tsai and Chang[126] recommend using multiple forms of assessing pain (reported and observational) to provide a timely intervention and treatment. When using an observational pain tool, knowing the resident's baseline behaviors is vital to assessing behavioral changes.[61] Current studies recommend that clinicians use a standardized tool; however a gold standard does not exist to assess pain in those unable to communicate.[92, 127] (See Table 2.2 for list of available pain tools) General problems with existing instruments to assess pain include the following:[127]

- Pain is a subjective experience; how can pain be accurately measured, when the occurrence of pain is an individual event and expression?
- The variability in pain signals makes it difficult to establish uniform measures.
- Because a gold standard to assess pain does not exist for residents unable to communicate, it is difficult to establish the validity of measures to detect pain in this population.
- Inappropriate medication use may mask pain behaviors, or behaviors may be mislabeled as pain cues, when in fact are related to medication side effects.
- It is difficult to discern pain behaviors from other sources of distress.
- Studies of pain tools often lack the sample size and replication of findings for generalizability across care settings.

Key concepts for using pain assessment tools are to ensure that the tool is understandable for the resident and the healthcare provider. For the resident, the use of pictures, text size, matching the tool with the resident's cognitive level, and considering the resident's ability to communicate verbally are helpful in choosing a pain tool.

Proper education for clinicians regarding pain tools can include video training to increase understanding of how to use the tool, and the importance of giving healthcare providers the time to assess and document findings appropriately.[64] When using self-report tools, it is also important for the assessor to allow the resident adequate time to answer and complete the exercises. For residents that can not verbalize pain, observational tools should be used.[25] Facial expressions are a valid measure for demented and healthy residents, and can serve as an alternate tool to measure pain.[26, 128] Research on Facial Action Coding System (FACS) of facial expressions has emerged as an important instrument, regardless of the level of cognitive impairment. The primary goal is the discovery of barriers and the facilitation of measures to recognize pain more accurately.

Challenges and Barriers to Pain Management

In the literature, five categories of barriers exist hindering the effective management and treatment of pain— resident characteristics, cultural influences, inability to understand/interpret pain behaviors, lack of clinician training, and misconceptions of analgesic use. Residents may present a barrier through their inability to report pain from impaired cognition, hearing, or sight; a lack of dexterity; reluctance to complain; uncertainties about treatment; reluctance to bother staff; and/or the nurse's personality.[74, 129] Barriers influencing the experience and report of pain are cognitive status, mood state, perception of control, expectations, and social and cultural conditioning.[130] A lack of education exists about the cultural aspects of pain presentation—

cultural factors like race, religion, educational background, sex or socio-economic status.[62]

Responses to pain are influenced by environmental or socio-cultural factors and may be more pronounced in cognitively intact residents.[62] A significant limitation to optimal pain control measures is often related to family or prescriber resistance to follow treatment recommendations.[131] Health care provider bias and cultural beliefs are barriers to the recognition and management of pain.[117] Differences in language may cause an inability to understand resident needs and contribute to under-reporting of pain assessment, or cause difficulty using rating scales.[61]

There is a lack of communication among professionals, especially in care planning—all healthcare professionals must be involved in treatment. Limited contact with physicians or the nurse practitioner causes less interventions for chronic pain to be made.[1] Nursing home employees often have a lack of knowledge into several aspects of pain care for the elderly, even though they report satisfaction with the way pain is assessed and treated.[132] Education and in-services presenting formalized procedures for assessing and treating pain greatly improve outcomes in the nursing home setting.[133] Educational level influences beliefs and knowledge about pain. Having advanced education and training helps clinicians to dissuade myths about appropriate pain control and what symptoms to look for to identify it. An increased awareness of what pain is may facilitate and improve the assessment and management of pain in residents.[40, 132] The clinician is better prepared to assess a myriad of symptoms with an increased knowledge of pain and how interventions affect resident quality of life.

Symptoms of pain, like agitation, may be incorrectly treated with anti-psychotic medications instead of analgesics.[19, 134-137] Achieving sufficient pain management is problematic due to the risk of side effects, medication interactions, co-morbid diseases, and prescriber issues,

such as reluctance to prescribe opioids and inadequate training into analgesic management.[104, 138] Barriers to analgesic treatment are failure to assess or report pain, fear of drug addiction, concern about risks of falling (opioid), fear of gastro-intestinal concerns (i.e., with non-steroidal anti-inflammatory drugs [NSAIDs]), and failure to use appropriate pharmacologic and non-pharmacologic interventions.[9, 10, 61, 64, 65, 104] Communication with family members including medication information can help in correcting misunderstandings about analgesics and rationales for pain treatment.

Best Practices for Pain Management

The American Geriatrics Society and American Society for Pain Management Nursing (ASPMN) do not endorse specific tools for assessment of pain in the cognitively-impaired patient.[121, 122, 139] An expert based consensus statement makes the following recommendations for assessing pain older adults:[140] 1) physical exam 2) medication history review 3) assessment of pain using self-reports 4) specialized tools for patients with dementia 5) functional status assessment 6) emotional assessment and 7) focused documentation describing nociceptive and neuropathic pain (i.e., location, onset, duration, previous effective interventions, and etiology if possible).

Documentation should include a risk analysis for NSAID use, and show measures to prevent constipation (i.e., hydration, ambulation, and diet) in patients using opioids. Pain should be treated prophylactically (especially in residents with documented history of chronic diseases like osteoarthritis, osteoporosis, cancer, or history of fractures), and finally there should be a reassessment of pain control measures. As needed acetaminophen, if used regularly for two weeks, should become a regularly scheduled medication.

Participants following a pain protocol may reach a state of pain management and relief.[131] The American Geriatrics Society [120] suggest the following quality indicators:

1) Screen for persistent pain with qualitative and quantitative assessments, especially in the cognitively-impaired with a standardized pain scale, behavioral assessment or proxy report.

2) At a minimum, screen annually for pain.

3) Pain screening should occur at the same time as cancer care visits.

4) Treat severe pain expediently—severe pain scores of 5 or greater on a 1-10 scale, or similar observational measures signify a need to adjust pain treatments to improve pain control.

5) New complaints of moderate to severe pain should be recorded in the medical record with an intervention and follow-up assessment of pain within 4 hours.

6) Educate new residents who have persistent pain, and document within 6 months of resident education to re-review the information given into the causes of symptoms and how to use medications or therapies.

7) Take steps to prevent constipation with opioid use (e.g., stool softener/laxative, increased fiber, documentation of potential constipation and decisions about interventions).

8) Reassess pain control with opioids for efficacy and side effects within 1 month.

Recommendations

A multidisciplinary and multimodal assessment approach is necessary to make effective assessments and to manage pain.[117] Cognitively-impaired individuals should receive holistic assessments based on their abilities and background to make decisions about care needs.[133]

Appropriate pain management is achieved through an individualized care plan that is ongoing, well documented and accurately detects pain.[11] A comprehensive assessment should include identification of relevant underlying conditions influencing pain, the perception of pain and management.[140] A quality indicator for assessing pain are screens for chronic pain with new residents visits and at regularly scheduled intervals.[140, 141] Assessments should be judiciously documented with an extensive history and physical. Behavioral observations should occur as one part of a comprehensive exam.[109] Pharmacologic and non-pharmacologic interventions can reduce behavioral symptoms, and both could be attempted to relieve discomfort.[135] Pain-control strategies beyond medication are supportive verbal communication, music therapy, therapeutic massage, soothing/supportive touch, cold or heat therapy, and physical exercise or movement.[71, 142] Of note, residents spent more time engaged in social activities when they received acetaminophen as opposed to a placebo.[143] Social engagement is an essential aspect of a healthy mental status and should be a part of every resident's care planning, despite cognitive limitations.[133]

Relevance to Clinical Practice and Further Research

Examining pain assessment and treatment plays a vital role in understanding the intricacy of pain in the cognitively-impaired.[2] In an environment where nurses are at a shortage and skill in caring for the elderly is often lacking, taking the time to understand pain in this population is difficult. Further research of pain behaviors could enable affirmation of current knowledge, and provide insight into resource allocation for training and setting pain protocols as a top health priority. The Minimum Data Set-Resident Assessment Instrument (MDS-RAI) is a potential source to evaluate ongoing pain control initiatives and serve as a method to grade facility performance.

From this information, clinicians can initiate evidence-based protocols, synthesize under-investigated aspects of pain highlighting care delivery systems that are successful or fail in recommended guidelines.[61] Systematic methods of pain assessment are vital to establish best care practices.[144] Using the MDS-RAI as a tool, this resident survey can be used as a cost- and time-effective way to study residents at the unit and aggregate level, because the resident survey is federally mandated, familiar, and readily used across nursing home settings. The development of a MDS-RAI originated tool could be a serve as a valid measure of pain for residents that are cognitively-impaired.

Evidence is lacking to show a link between pain and specific behaviors exclusive to pain.[127] Further research is needed to define behaviors distinguishing between pain, fear, anger, embarrassment or mental disorders [145] to reduce polypharmacy, or misuse of antipsychotics. Additional research of clinical sites using these tools could also integrate clinician perspectives of ease of use, and time to administer the assessment.

Conclusion

Chronic pain is prevalent in long-term care. Pain in cognitively-impaired residents is under-assessed and under-treated. Severely cognitively-impaired residents are at the high risk for inaccurate pain assessment, unnecessary treatment with psychotropics, and not receiving analgesic intervention. Failing to intervene can significantly affect the resident's quality of life.[95, 146] Resources must be allocated to educate healthcare providers and support staff, about issues of resident care, appropriate means to assess, monitor and manage pain for this population, and the consequences of failing to ensure pain management.

A significant gap in the research exists in defining the links between pain tools and behaviors, accuracy of pain detection, decisions into healthcare provider's choice of pain tool,

and the allocation of resources needed to appropriately assess and document findings. Specific care factors causing inadequate pain treatment should be more thoroughly examined to develop resident-centered care solutions. Despite a large number of tools to assess pain, a standardized behavioral tool does not exist for broad use.[147] Efforts should be made to develop a behavioral tool with universal application across cognitive levels. A need exists for reflective discussions with health professionals, describing how to perform systematic assessments of verbal and non-verbal expressions of pain.[129] Finding solutions to inadequate care requires an evaluation of existing protocols for case-mix and resident acuity, root causes of insufficient care, and alternative forms of long-term housing, like the Green House® projects designed to provide more homelike care, as an alternative to current institutional, long-term care settings.[148]

CHAPTER 3: A PILOT STUDY OF PAIN MEASUREMENT MODELS USING THE MDS-RAI 2.0

Introduction

Pain affects from 49 to 83% of 1.8 million residents living in long-term care facilities.[2-4, 50] The outcome of pain and long-term suffering influences psychological, physiological and social aspects of an individual's life. Chronic pain is associated with anxiety and depressive symptoms[149] and can have a serious adverse affect on quality of life, resulting in an inability to sleep, clinical depression, weight loss, disturbances in gait, immune suppression, decreased socialization, and increased morbidity. It also contributes to burgeoning healthcare costs.[22, 52, 149]

Behavioral and psychosocial factors play an important role in understanding the experience, continuation and exacerbation of pain.[150] Individuals display many different behavioral cues making it difficult for the clinician to comprehend the patient's needs. Specific verbal, behavioral and facial expressions are documented in the research as being representative of manifestations of pain.[106, 107]

Pain is an individual, subjective experience. The complexity of assessing and determining patient pain increases with cognitive decline. Cognitive decline progressively hampers the individual's ability to anticipate and verbalize pain, but pain is still felt.[101] Decades of research indicate pain is poorly assessed and managed in long-term care, especially for those with moderate to severe cognitive impairment.[6-9, 12, 14]

Looking at underlying common characteristics of pain could clarify our understanding of how to measure and identify pain more accurately. Basing detection of pain only on self-reports

from the resident, fails to take into account other indicators that an individual could be expressing for pain.

Research to date lacks a large-scale analysis of pain in long-term care that evaluates a multi-dimensional construct of pain. The aims of this pilot study are to:

1) Determine the magnitude of the relationship between pain behaviors and a hypothesized measurement model.

2) Compare theoretical models to existing pain scales.

3) Examine the construct validity of a pain measurement model.

Research Question: Can a theoretically derived model of pain aid in detecting pain across all cognitive levels?

Multiple smaller scale studies have evaluated specific pain tools, recommending additional research using larger samples to increase the generalizability across long-term care settings and to include a more comprehensive analysis of residents most at risk, the severely cognitively-impaired.[48, 92, 98, 151, 152] Data from existing nationwide assessment instruments, like the Minimum Data Set (MDS), are an excellent source for evaluating resident pain and other quality initiatives.[153] The goal of evaluating the dimensions and theoretical constructs of pain is to clarify the validity of measures and the reliability of existing quality indicators from the MDS to be able to accurately detect pain across all cognitive levels.

Significance

Nursing homes are under great scrutiny for adherence to regulations, quality improvement actions and public reporting. Stakeholders and researchers have raised concerns about the accuracy, usefulness, and timeliness of reports to describe care in skilled nursing settings.[154, 155] The Joint Commission (TJC) calls for the close monitoring of pain management

in healthcare settings and evaluates the appropriateness of interventions.[57, 58] The American Health Quality Association (AHQA) reports on healthcare entities that strive to improve pain management through quality initiatives, and the Centers for Medicare and Medicaid Services (CMS) encourage ongoing quality improvement (QI) in skilled care settings through resident assessment surveys.[59] Multiple entities are working towards improving care for the elderly, but large-scale research is needed to better understand pain behaviors and ensure pain treatment is effective and ongoing in this population.

Pain has a significant impact on quality of life and resident outcomes. Higher levels of comorbidities are reported with severe pain, along with increased depressive symptoms, reduced activity and significant physical effect.[156] Chronic pain is attributed to diseases like osteoarthritis, cancer, facture, and neuropathies—arthritis being the most common.[149]

The study of pain, especially among those residents that are noncommunicative, could significantly improve quality of life and the quality of care in nursing homes.[157] Residents with advanced cognitive decline are at the highest risk for under-treatment because of an inability to self-report and verbalize pain. Incorrectly assessing pain leads to a higher incidence of inappropriate medication use, medication side effects and residents remaining in discomfort. These outcomes fail to correctly apportion healthcare resources, provide optimal treatment, or resolve the target issue of pain. Using evaluation tools to include a broader context of resident symptoms might help recognize patterns and methods to improve care.

Evaluating aggregate resident care in points in time can highlight successes or failures, and identify opportunities to improve treatments and outcomes. The integration and mechanisms of information technology (IT)/information systems (IS) are helpful tools to combine healthcare delivery networks to improve resident outcomes. Analysis of data sets can reveal statistical

relationships between symptoms, diagnoses, treatments and outcomes.[158] Using existing data lessens difficulties in recruiting and retaining those with increasing inability to assent or comprehend informed consent, offering important insights into resident care.

Background

Chronic pain in the elderly is most often felt in the feet, legs, back and major joints.[149, 159] Other types of pain, like headache or visceral aches are less reported in the elderly. It is estimated at least 1 in 4 older individuals suffers with chronic musculoskeletal pain.[149] Pain is an expression of underlying body damage, or peripheral nociceptive stimulation.[160, 161]

Pain is often communicated via behaviors.[160, 162] Cohen-Mansfield and Creedon [157] define pain behaviors as "observable nonverbal behaviors" to indicate pain to others. Broader definitions include all forms of behaviors displayed by an individual thought to reflect the existence of nociception, including facial expressions, speech, posturing, patterns of medication use, seeking healthcare intervention, or changes in socialization.[161] Current studies suggest four clusters of pain behaviors—altered ambulation (gait) or posture, negative affect, facial/audible expressions, and avoidance of activities.[163] A research study of nurses' perceptions of pain found that key behavioral indicators of pain were changes in behaviors, repetitive movements, repetitive vocalizations, and physical symptoms.[157] Patients with severe dementia do not experience less pain intensity, less painful sites, or have a lower incidence of pain causing diseases, but pain often goes un-assessed and untreated in this population.[151]

The responsiveness of caregivers to intervene is a primary quality of care concern, especially for those institutionalized who rely upon others to interpret and meet their individual needs. Difficult to an understanding of pain, is how to differentiate between pain behaviors and the expected behaviors from a progression of a disease, such as memory impairment or the

inability to communicate needs. Unique domains are used to explain concepts of pain, to broaden how pain is recognized, especially in the cognitively-impaired resident.

Cognition

Cognition describes how individuals differentiate, encode, store, retrieve and use information.[69] The resident's ability to reason, remember and think describes cognitive status. Cognitive status influences a patient's ability and how he/she communicates with others. A distinction in increasing cognitive decline is how behaviors are communicated. In dementia, wandering may involve an interruption in the individual's ability to follow sequential mental tasks to reach a destination or goal.[23] The cognitively-impaired resident has increased difficulty to stay on task and remain attentive to reach the goal. Cognitive impairment in conjunction with pain is a significant factor in explaining why certain verbal or nonverbal behaviors occur, and how the clinician could incorrectly interpret cues. Residents with severe cognitive impairment, as with dementia, are at a high risk to suffer from pain, because of an inability to verbally report it.[151]

Affect

Affect and cognition are thought to be inextricably intertwined; however some see emotion completely independent of cognition.[164] Beyond culture-bound affectations, the elderly resident with severe cognitive impairment might have a flattened affect, or have limited verbal capacity with an increased moodiness and crying. Affective domains include emotions and feelings. In evaluating resident mood, depression may present as having generalized aches and pains without a source of injury or disease, while chronic untreated pain may cause depression.[165] This makes discernment of pain especially difficult with residents with

depression. Across cultures, the existence of multiple pain conditions is associated with anxiety and mood disorders.[166] Patient mood is an important concept of the pain construct in modeling whether depressed mood is an indicator of pain, or a consequence of long-term untreated pain. Turk, Wack, and Kerns' [163] seminal work demonstrated dimensions of pain behaviors including a negative affect and facial expressions of distress consistent with a pain behavior construct. Multiple studies have found significant associations between pain and grimacing.[167, 168] Research into Facial Action Coding Systems (FACS) has been used to confirm the existence of pain in different levels of cognitive impairment.[26, 167] Findings indicate facial expressions to noxious stimulation is significantly increased in patients with dementia in comparison to cognitively intact patients.[128] Research of facial expressions indicates basic primordial expressions occur across cultures, gender and age along with learned "socially acceptable" emotions and expressions of mood. If the patient reverts to lower cognitive functioning making facial expressions instinctive and not a culturally bound expected reaction, universal expressions of pain could exist. Considering a severe decline in cognition, this might explain facial grimacing as a universal expression of pain.

Behavioral

A significant determinant of pain behaviors is the severity of pain.[169] Behaviors like verbal complaints/negative vocalizations, sighing, moaning, agitation, crying, grimacing, rapid blinking, shifting/fidgeting, rubbing, resistance, bracing, guarding and rigidity are common indicators of pain from the literature.[80, 108, 138] Aggressive behaviors in cognitively-impaired residents are also indicated as a sign of pain.[170] Behavioral science indicates pain behaviors are subject to the same changes and influences to alter actions, as other types of behaviors.[165] Much of the research into pain describes learned behaviors and operant conditioning, as a factor for

continued behaviors of pain.[150, 161] This assumption might hold true for cognitively intact residents, but is inadequate in explaining repetitive behaviors in the cognitively-impaired resident—if pain needs are not being met, what would be the drive for continuing the behavior?

Behaviors that are not followed by positive consequences but have neutral or adverse responses should diminish and end unwanted behaviors, thus describing the process of operant conditioning. The behavior should be deterred if these actions are not eliciting the desired response. Alternative behaviors would be attempted. The mechanism of operant conditioning does not explain repetitive behaviors—why pain behaviors would not be eliminated if pain needs were being ignored. This behavioral perspective makes it difficult to attribute behaviors to progression of a disease and those of pain. Essential, in an understanding of pain in the elderly, is not the isolation of certain affective characteristics, but those variables that correlate to actual behaviors, i.e., what is the outcome (consequence) of the behaviors?

Disruptive behaviors common in dementia may lead to negative consequences like continued untreated pain and the use of physical or chemical restraints to control the behavior.[41] Because one set of signs or behaviors do not uniformly detect pain at all cognitive levels, examining the association of behaviors by cognitive groups would be valuable in advancing research in this field. Turk, Wack and Kerns[163] characterize common problems in attempting to accurately assess pain behaviors as:

1) Insufficient attention to the attributes of the construct

2) Precision and consistency in the characteristics of the methods of assessment (Are the measures comprehensive and reliable?)

Inferred Pain

Pain can be inferred from existing diseases (i.e., osteoarthritis, osteoporosis, neuropathies, cancer) that are known to cause pain, and existing pain sites. Having multiple sites of pain cause more severe and disabling effects than having a single-site of pain.[171] Pain assessment tools most commonly ask residents to rate pain and/or report the frequency and intensity. This aspect of pain assessment is essential, because even residents with cognitive impairment should be engaged with eye contact and inquiries into their level of comfort and not discounted as a reliable source.[172, 173] Additionally for cognitively-impaired residents, direct observation of behaviors is the strongest evidence for ensuring pain is appropriately assessed and intervened upon.[84] Inferred pain can be another valuable clue to examine and better capture pain. When clinicians use reported pain as the only assessment tool, as a one-dimensional measure, assessments often fall short of accurately detecting pain.

Nationally Required Nursing Home Quality Initiative

The Minimum Data Set- Resident Assessment Instrument 2.0 (MDS-RAI) comes from the Nursing Home Quality Initiative (NHQI) and provides information about quality of care in nursing homes to consumers.[174] An assessment must be completed on all Medicare residents within 7 days of admission to the nursing facility. Current quality measures do not establish guidelines or standards of care, but serve as a valid and reliable means to evaluate key quality measures. Requirements for the completion of certain sections (i.e., Section U, Medications) vary by state, but key items are included uniformly as quality indicators. Pain[175] is included as a quality measure, but not a Resident Assessment Protocol (RAP) triggering condition for care planning. Health policy considerations are a vital component to weigh the viability of specific

quality indicator assessment tools, like the MDS 2.0 and upcoming 3.0 versions, for the provision of quality care to the elderly residing in long-term care.[154]

Theoretical Framework

The theoretical foundation for this research incorporates the concept of need-driven behaviors and consequences of need-driven, dementia-compromised behaviors (C-NDB) to frame a person-centered approach to care.[23, 24, 35, 41, 176, 177] (see Table 3.1 for definitions) Need-driven, dementia compromised behaviors (NDB) are actions displayed to communicate an underlying need.[23] Optimally, the immediate identification of primary need driven behaviors would result in an action and resolution to decrease disruptive behaviors. Need-driven behaviors produce behavioral symptoms and explain how certain interventions could mitigate disruptive behaviors.[17]

The concept of dementia-compromised behaviors aids in explaining why continued behaviors are not lessened through the mechanisms of operant conditioning. Pain is one aspect of the framework. The framework is helpful in identifying the primary problem (pain) and developing antecedent and resulting consequences of unmet needs. The initial portion of the theoretical framework is used in this pilot study to identify pain. The remaining structure of the framework is integral to evaluate other aspects of the model like cognitive status, and outcomes of untreated pain like depression, social isolation, comorbidities, effective/non-effective interventions, and the cost-effectiveness of actions taken.[28]

The construct of pain is thought to be multidimensional.[162, 163] How NDBs are expressed, is specific to the individual and dependent upon proximal and background factors. Proximal factors are defined as "current situational issues or events" [36(p135)]; they varying greatly and are dependent upon personal and environmental cues like staffing level, or pain with movement.

Background factors involve cognitive, psychosocial, neurological, and general health causes. These factors tend to be more constant. Need-driven behaviors aid in explaining why individuals display certain behaviors, especially those with cognitive impairment from dementia.[23] Need-driven behaviors provide a foundational framework for this pilot study to draw theoretical links between unique indicators obtained from the research, a state of the science, and clinical practice.

Table 3.1. Theoretical Construct Definitions[23, 24]

Term	Definition
Need-driven behaviors	Expressions of unmet needs or goals.
Need-driven dementia compromised behaviors (NDB)	The most meaningful response a dementia-compromised person can give with the limitations of the disease process; disruptive behaviors could be the only and base mechanisms of communication; reflect the interaction of background and proximal factors.
Consequences of Need-Driven Dementia-Compromised Behavior (C-NDB)	Explains the consequences of behavioral symptoms of individuals with dementia; needs are expressed behaviorally and unmet needs influences additional behavioral cues.
Antecedent	A preceding cause.
Consequence	Events/actions that results from inaction of the need or failing to respond appropriately to the primary need.
Proximal factor	More changing aspect of a person's physical status or social/physical environment. Proximal factors are more likely to precipitate NDBs; i.e. emotions, light level, noise, staff stability.
Background factor	Neurological, cognitive, general health or psychosocial factors that produce NDBs; i.e. regional brain involvement, memory/language skills, functional ability, affective state, behavioral response to stress.
Primary need	Immediate need.
Secondary need	Needs that may arise from primary needs not being met.

Methods

Design and Sample

A cohort study was conducted in a secondary analysis of data from the Minimum Data Set-Resident Assessment Instrument (MDS-RAI). A cross-sectional analysis was used to determine pain prevalence. The first-year records of a longitudinal data collection were used for the pilot study. A combined 14,435,847 subject observations was reduced to 806,977 (Figure

3.1) by using annual assessments and applying inclusion criteria of an age limit of 65 and older. Unconfirmed entry dates into the system were also excluded resulting in 252,513 subjects. Residents discharged, duplications and transfers occurring over a three-year span were dropped reducing the total to 56,798. Individuals coded as being comatose were excluded, because the behavioral sections of B through F in the MDS are omitted per instrument instructions. The behavioral indicators evaluated in this research are contained in this section. Schizophrenic residents were excluded to gain a starting point of cognitive levels, reducing the probability of fluctuating mental states due to psychosis. Data cleaning rules yield a final sample of 52,996 residents to evaluate trends in pain behaviors and associations between cognitive, affective, behavioral, and inferred pain dimensions.

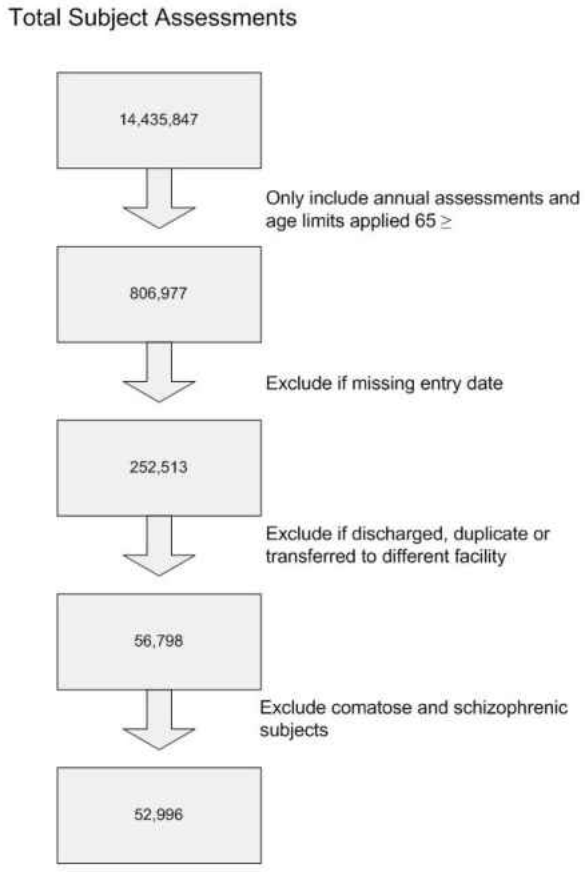

Figure 3.1. Sample Method

Instruments

The MDS is the most commonly used resident assessment document in nursing home facilities. The MDS is not a comprehensive assessment, but a preliminary screening tool to help identify potential problems, strengths and preferences for care. The MDS is a core set of items, definitions, and response categories composed of two parts: the Minimum Data Set (MDS) and the Resident Assessment Protocols (RAPs). The Resident Assessment Protocols provide a section of the MDS-RAI providing problem-oriented frameworks for additional assessment.[178] Key items that are problem-specific trigger assessment needs for specific conditions. The RAP items provide a critical link to care planning. The MDS-RAI 2.0 version has 18 RAPs covering the majority of areas addressed by a typical skilled nursing care facility in the care planning process. The RAPs help staff to look for causal or confounding factors that may be reversible. Goals are set to improve deficits where possible, or maintain and prevent avoidable decline.

The MDS has demonstrated good reliability and validity.[179-181] MDS items have excellent interrater and test-retest reliability in key areas of cognition and activities of daily living (ADL) with an average weighted kappa of 0.80. MDS-RAI items met a standard for superb reliability (i.e., intra-class correlation of 0.7 or higher) in key categories of functional status, such as cognition, activities of daily living (ADLs), continence, and diagnoses.[182]

The Cognitive Performance Scale (CPS)[183, 184] (Figure 3.2) was used to assess resident cognitive status. The CPS instrument is a MDS-RAI item scale derived from sections B, C and G of the resident assessment form. Seven levels of cognitive functioning can be determined ranging from a score of zero (intact) to six (severely cognitively-impaired). The scores are obtained from five MDS items: one communication item (ability to make self-understood), three cognitive items (short-term memory, if comatose, and decision-making), and one ADL item

(eating). The CPS measure correlates highly ($r \geq 0.70$) with the frequently used Folstein Mini-Mental Status Examination (MMSE) [185], a tool frequently used to systematically assess mental status.[186] Validation testing of the CPS scoring against the MMSE shows a sensitivity of 0.94, and a specificity of 0.94. MMSE scores range from 0 to 30. A score of 0 to 9 indicates severe impairment, 10-18 is moderate, 19-24 is mild, and scores greater than 24 indicate the individual's cognitive status is intact. The MMSE scores are converted CPS scores. A CPS score of 5 or 6 correlates with severe impairment, 3 to 4 for moderate impairment, 2 for mild impairment, and 0 to 1 as borderline intact to intact. The CPS scores are converted into average MMSE values, i.e., 3 is a mean MMSE of 15.4 (moderate impairment) and a CPS score of 4 or 5 is a mean MMSE of 5-6 (severe cognitive impairment).[187]

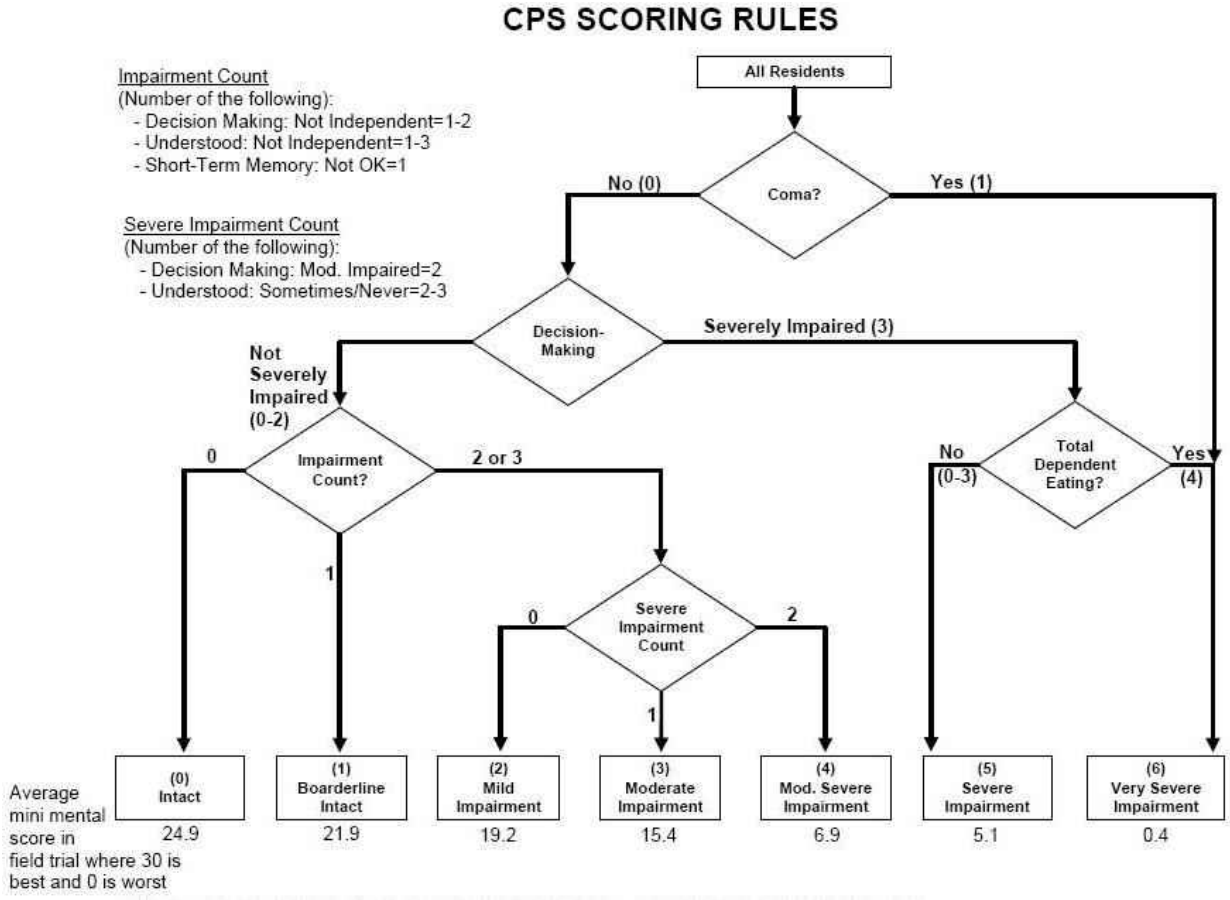

Figure 3.2. Cognitive Performance Scale [183]

The Pain Scale (PS) originating from Fries and colleagues uses two items from the MDS instrument: Item J2a for pain frequency and item J2b, pain intensity. If pain frequency is marked as no pain, subsequent pain intensity and pain sites are not scored. This Pain Scale [123] was validated against a standardized pain instrument, the Visual Analogue Scale (VAS) and has shown validity in detecting pain in intact to moderately cognitively-impaired residents. The PS was not performed with a validation sample for severely cognitively-impaired residents, because residents were unable to perform the VAS. The limitation of using this tool in the significantly cognitively-impaired was also indicated in Fries instrument validation study, indicating the percentage of residents reporting no pain increased with increasing cognitive impairment.[123] The potential to use the PS in addition to other indicators was the impetus for testing a theoretical construct to improve pain detection in those with severe cognitive impairment, because pain frequency and intensity alone might not fully capture the pain spectrum in those with limited capacity to verbalize pain.

Data Collection

Data from 2001, 2002 and 2003 were collected from the annual assessment of de-identified residents residing in Medicare-certified nursing homes from across the United States (http://www.resdac.umn.edu/MDS/data_available.asp). A proposed panel model was evaluated for model fit through a series of steps using MDS-RAI data. The goal was to identify the dimensions (indicators) of the measurement instrument, clarify the order of the measurement levels, and examine the integrity of the measurement instruments. The pilot study was conducted to compare statistical models of pain, while grouping residents by cognitive status. The pilot model contains affective, behavioral and inferred pain traits grouped by cognitive

status (See Figure 3.3). The model was compared to Fries existing pain instrument for utility. The Pain Scale (PS) is widely used as a secondarily derived tool using MDS data.

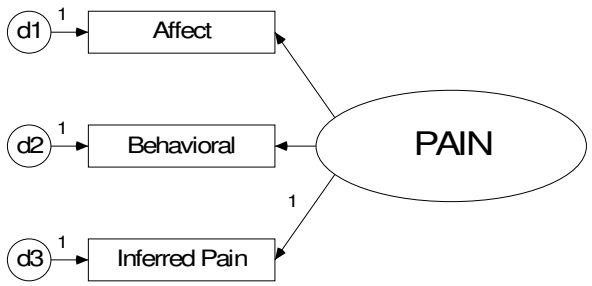

Figure 3.3. Latent Construct Pain

Statistical Analysis

Descriptive statistics and factor analyses were run with SPSS 14.0. Advanced multivariate techniques were used to build a measurement model and test the model fit with structural equation modeling. A measurement model of pain was hypothesized based on current research and literature of the domains and dimensions of pain in the elderly. Ordinal level correlations were run with Spearman's rho. A latent model of pain was built with AMOS 6.0 to determine how well 12 indicators from the MDS-RAI represent the latent construct of pain. Equality constraints were applied to compare four cognitive levels—intact, mild, moderate, and severely cognitively-impaired residents. Construct validity was evaluated by the extent to which the measurement of pain accurately represents the construct and assumes theoretical basis.

A critical step in building the model was hypothesizing associations based on conceptual relationships, not simply on the data available. Content validity or logical validity was evaluated in the model to determine if indicators represent all dimensions of the construct of pain. Fries [123] Pain Scale (PS) contains only two indicators—pain frequency (J2a) and pain intensity (J2b) in an ordinal scale. These two indicators yield an under-identified model and cannot run as a stand-alone model in AMOS. These items were highly correlated (r=.977, p=0.01, one-tailed);

indicating one of these items could be dropped, because they closely measure the same aspect of the inferred pain dimension. These core indicators of pain are included in the hypothesized model for testing to define the dimension of inferred pain.

Confirmatory analysis was conducted to review factor loadings. Confirmatory factor analysis (CFA) was used to reduce the factors and confirm factor groupings—inferred pain, affect and behaviors. The measurement model was evaluated for validity and goodness of fit statistics to improve the model to ensure the final prototype is parsimonious. Indicators with a probability of 0.01 were included, non-significant items were not included in the model. The specification of free and fixed elements represents the initial hypothesis that presumes indirect or direct effects among latent variables.[188] The assessment of power in structural equation modeling is complex, because there are substantially more parameters beyond a straight forward procedure like the t-test or ANOVA, containing only a few parameters.[188] The sample size was considerable (n=52,996), so power analysis was not critical to determining appropriate sample size prior to the study to ensure statistical significance of the findings.

Results

Selected MDS items were collected on 52,996 residents. Overall, 80% of the sample was women and the average age was 84±8.1 years (see Table 3.2). Of the medical conditions selected, arthritis was the most prevalent (34.2%) with diabetes effecting around 20.9% (see Table 3.3). The most common pain site was the joints (14.9%).

Table 3.2. Demographic Characteristics of Residents

(n=52,996)		Mean ±S.D. N (percent)	Range
Age		83.7 ±8.1	65-112
Gender	Male Female	10,798 (20.4%) 42,198 (79.6%)	
Cognitive Status	Mean CPS Score Mean MMSE Intact Mild Moderate Severe	2.9±1.9 14.4±8.0 7,428 (14.0%) 13,928 (26.3%) 15,216 (28.7%) 16,424 (31.0%)	0-6 0.4-24.5
Marital Status	Never married Married Widowed Separated Divorced	12.7% 15.5% 62.3% 2.2% 7.3%	
Ethnicity	American Indian/Alaskan Native Asian/Pacific Islander Black, not of Hispanic origin Hispanic White, not of Hispanic origin	0.3% 1.2% 11.4% 2.9% 84.2%	
Language	English Spanish French Other	94.6% 2.4% 0.2% 2.8%	
Education Level	No Schooling 8th grade/less 9-11 grade High school Technical or trade school Some college Bachelor's degree Graduate degree Not coded/missing	3.0% 30.8% 14.2% 33.2% 4.2% 7.2% 4.2% 1.8% 1.5%	

Table 3.4 contains an index of behaviors, which with additional models could clarify antecedents and consequences of pain. The PS items (see Table 3.5) indicated 68.8% of residents reported no pain, while only 12.8% experienced pain daily. Pain frequency and intensity declined as the residents' cognitive status declined, indicating only 18.2% of severely

impaired were experiencing pain, while 47.7% of the intact group experienced pain less than daily or daily.

Table 3.3. Diseases/Events with Potential Pain Symptoms

Disease	Number from Total (n=52, 996)	Percent of Total
Diabetes	11,063	20.9%
Peripheral Vascular Disease	6,128	11.6%
***Arthritis**	**18,110**	**34.2%**
Complaint of Joint Pain	7,703	14.5%
***Hip Fracture**	**2,113**	**4%**
Multiple Sclerosis	440	.8%
Emphysema/COPD	6,423	12.1%
***Cancer**	**2,844**	**5.4%**
Renal Failure	1,327	2.5%
***Pneumonia**	**472**	**.9%**
Respiratory Infection	1,213	2.3%
Septicemia	28	.1%
TB	19	.0004%
***Urinary Tract Infection (UTI)**	**2,737**	**5.2%**
Wound Infection	285	.5%

*Key Diagnoses Used for Pain Diagnosis Scoring

Table 3.4. Behavioral Index

COGNITIVE STATUS		Intact (n=7,428)	Mild (n=13,928)	Moderate (n= 15,216)	Severe (n=16,424)
CHANGE IN BEHAVIORAL SYMPTOMS	Improved	101 (1.4%)	348 (2.5%)	645 (4.2%)	821 (5%)
	Deteriorated	110 (1.5%)	357 (2.6%)	792 (5.2%)	792 (4.8%)
	PAIN BEHAVIOR				
Affect/ Nonverbal Cues	(E1D) Persistent Anger	751 (10.1%)	1,840 (13.2%)	2,839 (18.6%)	2,033 (12.4%)
	(E1K) Insomnia	197 (2.6%)	378 (2.7%)	595 (3.9%)	560 (3.4%)
	(E1L) Sad Facial Expressions	173 (10.0%)	2,197 (15.8%)	3,558 (23.4%)	3,647 (22.2%)
	(E1M) Crying	245 (3.3%)	715 (5.2%)	1,158 (7.6%)	1,452 (8.9%)
	(E1O) Withdrawal	107 (1.4%)	394 (2.8%)	574 (3.8%)	659 (4.1%)
	(E1P) Reduced Social Interaction	196 (2.6%)	546 (3.9%)	744 (4.9%)	813 (4.9%)
	(E2) Persistence	1,742 (23.4%)	4,514 (32.4%)	6,895 (45.3%)	6,726 (40.9%)
Verbal Cues	(E1A) Negative Statements	181 (2.4%)	489 (3.6%)	711 (4.6%)	307 (1.9%)
	(E1B) Repetitive Questions	34 (0.4%)	426 (3.1%)	1,949 (12.8%)	1,085 (6.6%)
	(E1C) Repetitive Verbalizations	68 (0.9%)	355 (2.5%)	1,306 (8.6%)	1,631 (9.9%)
	(E1E) Self Deprecation	79 (1.1%)	277 (2.0%)	312 (2.1%)	115 (0.7%)
	(E1H) Health Complaints	776 (10.5%)	1,572 (11.3%)	1,386 (9.1%)	380 (2.3%)
	(E1I) Anxious Complaints	693 (9.3%)	1,853 (13.3%)	2,524 (16.6%)	960 (5.9%)
	(E4BA) Verbally Abusive Frequency	304 (4.1%)	943 (6.7%)	2,194 (14.4%)	1,915 (11.7%)
Physical Cues	(E4DA) Inappropriate Behavior Frequency; disruptive sounds, noisiness, screaming, self-abuse acts, sexual behavior or disrobing in public, smeared/threw feces, hoarding, rummaging through other's belongings	178 (2.5%)	857 (6.2%)	2,273 (14.9%)	3,344 (20.4%)
	(E4DB) Inappropriate Behavior Alterability	108 (1.5%)	505 (3.6%)	1,420 (9.3%)	2, 326 (14.2%)
	(B5D) Restlessness	65 (0.9%)	689 (4.9%)	3,023 (19.8%)	5,772 (35.1%)

COGNITIVE STATUS		Intact (n=7,428)	Mild (n=13,928)	Moderate (n= 15,216)	Severe (n=16,424)
	(E1N) Repetitive Physical Movements; pacing, hand wringing, restlessness, fidgeting, picking	100 (1.4%)	621 (4.4%)	2,158 (14.2%)	3.855 (23.5%)
	(E4AA) Wandering Frequency	5 (0.1%)	187 (1.4%)	1,874 (12.3%)	2,755 (16.8%)
	(E4AB) Wandering Alterability	2 (0.0%)	68 (0.5%)	900 (5.9%)	1,699 (10.3%)
	(E4CA) Physically Abusive Frequency	37 (0.5%)	223 (1.7%)	1,068 (7.1%)	2,094 (12.7%)
	(E4CB) Physically Abusive Alterability	23 (0.3%)	97 (0.7%)	617 (4.1%)	1,368 (8.3%)
	(E4EA) Resists Care Frequency	387 (5.1%)	1,417 (10.3%)	3,375 (22.2%)	4,934 (30.0%)
	(E4EB) Resists Care Alterability	287 (3.9%)	972 (7.0%)	2,244 (14.7%)	3,392 (20.7%)

Table 3.5. Fries Pain Scale (PS) [123] Ratings

		Total Population (n=52,996)	Intact (n=7,428)	Mild (n=13,928)	Moderate (n=15,216)	Severe (n=16,424)
Fries Pain Indicators						
Pain Frequency (J2a)	No pain	36,470 (68.8%)	3,887 (52.3%)	8,411 (60.4%)	10,737 (70.6%)	13,435 (81.8%)
	Pain less than daily	9,731 (18.4%)	1,869 (25.2%)	3,144 (22.6%)	2,796 (18.4%)	1,922 (11.7%)
	Pain daily	6,795 (12.8%)	1,672 (22.5%)	2,373 (17.0%)	1,683 (11.0%)	1,067 (6.5%)
	Pain totals	**16,526 (31.2%)**	**3,541 (47.7%)**	**5,517 (39.6%)**	**4,479(29.4%)**	**2,989 (18.2%)**
Pain Intensity (J2b)	Mild pain	8, 046 (15.2% of total ,or 49% within reported pain)	1,514 (20.4%/42.8%)	2,608 (18.7%/47.3%)	2,295 (15.1%/ 51.2%)	1,629 (9.9%/ 54.5%)
	Moderate pain	7,946 (15.0%/48%)	1,873 (25.2%/52.9%)	2,731 (19.6%/49.5%)	2,065 (13.6%/ 46.1%)	1,277 (7.8%/ 42.7%)
	Horrible/ Excruciat-ing	534 (1%/3%)	154 (2.1%/4.3%)	178(1.3%/3.2%)	119 (0.8%/ 2.7%)	83 (0.5%/2.8%)
	Total	16,526	3,541	5,517	4,479	2,989

Initial and final models were built from the original pain model with the dimensions of affective, behavioral and inferred pain grouped by cognitive status. Careful consideration was given to what items to include in the initial model (see Figure 3.3 and Table 3.7, Definitions of Indicators) based on current empirical findings of reported pain symptoms and behaviors. All of the indicators in the measurement model were significant ($p<.01$) (see Table 3.8). Correlations are used to test for association not causality. The inferences made should have a logical connection to each other. It is important to examine both the degree of the relationship and the p-value. Researchers often disregard weak correlations, but a linear relationship may have meaning with current knowledge when examined in the context of other variables. The analysis assumes one-tailed direction, as pain increases, so do other behavioral symptoms of pain.

Cumulative scores of five potential pain-causing diseases (arthritis, hip fracture, cancer, pneumonia and urinary tract infection) were evaluated as an indicator for pain. While cumulative pain diagnoses were significant at the 0.01 level, the correlation was low, r=.182. In efforts to build a parsimonious model, the indicators of pain frequency, intensity and cumulative pain sites scores were kept and potential pain diagnoses scoring were not included in the preliminary model.

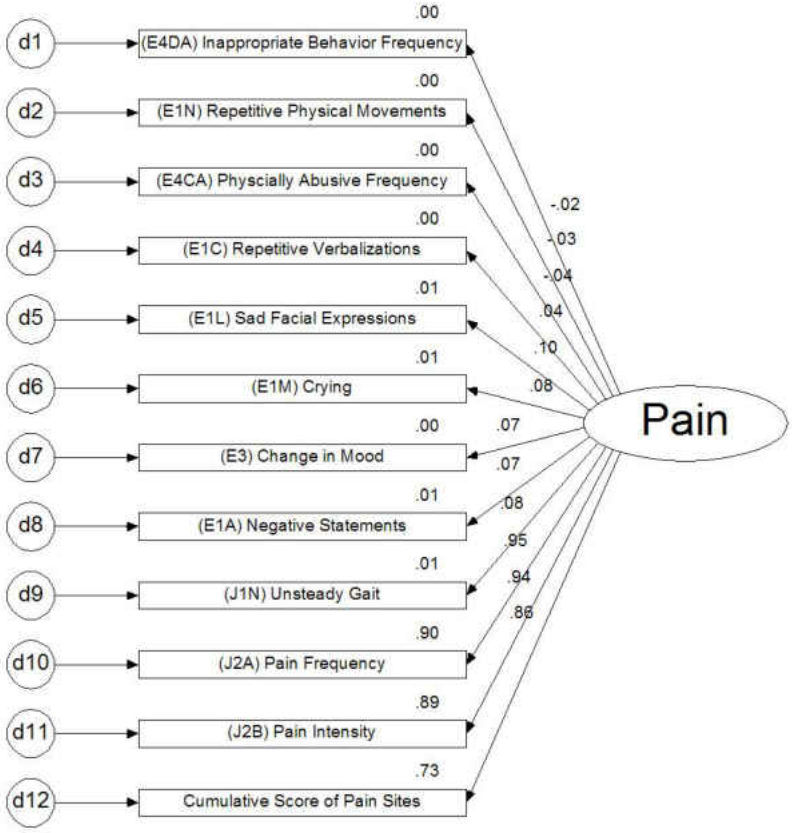

Figure 3.4. Preliminary Indicators in Model.

Table 3.6. Preliminary Model Factoring Loadings

			Est.	S.E.	C.R.	P	Label
Cum_Pain_Score_2001	<---	Pain	1.000				
J2B_PAIN_INTENSITY	<---	Pain	1.034	.003	311.057	***	k
J2A_PAIN_FREQUENCY	<---	Pain	.943	.003	313.011	***	j
J1N_UNSTEADY_GAIT	<---	Pain	.046	.003	15.931	***	i
E1A_NEG_STATE	<---	Pain	.019	.001	15.045	***	h
E3_MOOD_CHANGE	<---	Pain	.046	.003	16.511	***	g
E1M_CRYING	<---	Pain	.035	.002	21.770	***	f
E1L_WORRIED_FACE	<---	Pain	.085	.003	27.922	***	e
E1C_REPEAT_VERB	<---	Pain	.016	.001	11.887	***	d
E4CA_PHYS_ABUSIVE	<---	Pain	-.001	.001	-1.062	.288	c
E1N_REPEAT_MOVES	<---	Pain	.009	.002	5.090	***	b
E4DA_DIS_BEHAVIOR	<---	Pain	.008	.003	2.794	.005	a

***Significantly different from zero at the 0.001 level (two-tailed)

Table 3.7. Definitions of the Indicators

INDICATORS	
Variable	**Description**
Inferred/Reported Pain	
(J2A) Pain Frequency	Frequency resident complains or shows evidence of pain
(J2B) Pain Intensity	Intensity of pain described or displayed by the resident
Pain Sites Score	Cumulative pain site index, items J2a-J3j, K1c; higher scores indicates more pain sites
(J1N) Unsteady Gait	Problem present in last 7 days; Resident appears unbalanced, uncoordinated, jerking movements, careless movements, slow gait, shuffling steps or wide-based gait with halting steps.
Affect	
(E1L) Sad Facial Expressions	Sad, pained, worried facial expressions, i.e. furrowed brows
(E1M) Crying	Indicator of distress. Behavior is recorded by frequency in the last 30 days irrespective of the cause of the behavior (indicator)
(E3) Change in Mood	Refers to status of any symptoms described in section E (mood); snapshot of current observation period, not just a point in time.
(E1A) Negative Statements	Resident made negative statements, e.g. "Nothing matters, would rather be dead, what's the use, regrets having lived so long."
Behavioral	
(E1C) Repetitive Verbalizations	Calling out for help, repeated statements
(E4DA) Inappropriate Behavior Frequency	Disruptive sounds, noisiness, screaming, self-abuse acts, sexual behavior or disrobing in public, smeared/threw feces, hoarding, rummaging through other's belongings
(E1N) Repetitive Physical Movements	Pacing, hand wringing, restlessness, fidgeting, picking.
(E4CA) Physically Abusive Frequency	Others are hit, shoved, scratched, sexually abused
Cognition	
	Grouping variable of the comparative models; Cognitive performance algorithm scale 0=intact 1=mild 2=moderate 3=severe

Table 3.8. Correlation Matrix of the Indicators of Pain

Indicators	1	2	3	4	5	6	7	8	9	10	11	12
1. Sad Facial Expressions	**1.0**											
2. Crying	.339	**1.0**										
3. Change in Mood	.167	.131	**1.0**									
4. Negative Statements	.199	.150	.115	**1.0**								
5. Repetitive Verbalizations	.213	.154	.086	.153	**1.0**							
6. Inappropriate Behavior	.151	.114	.064	.086	.316	**1.0**						
7. Repetitive Physical Movements	.254	.145	.092	.059	.239	.292	**1.0**					
8. Physically Abusive	.109	.074	.045	.062	.124	.281	.188	**1.0**				
9. Unsteady gait	.054	.024	.036	.031	.014	.021	.057	.031	**1.0**			
10. Pain Frequency	.090	.073	.060	.067	.032	-.025	-.027	-.042	.075	**1.0**		
11. Pain Intensity	.095	.079	.063	.068	.035	-.026	-.026	-.042	.073	.977	**1.0**	
12. Cumulative Pain Site Score	.095	.078	.061	.072	.035	-.024	-.025	-.042	.082	.965	.964	**1.0**

Note: All correlation coefficients are significant at the .01 level (one-tailed)

Both models were recursive. The modification indices were examined for correlating measurement errors to reduce the chi-square and degrees of freedom in the original model from χ^2=305889.3, df=249, p<.01; to χ^2=4933.4, df=143, p<.01 in the corrected model (Figure 3.4).

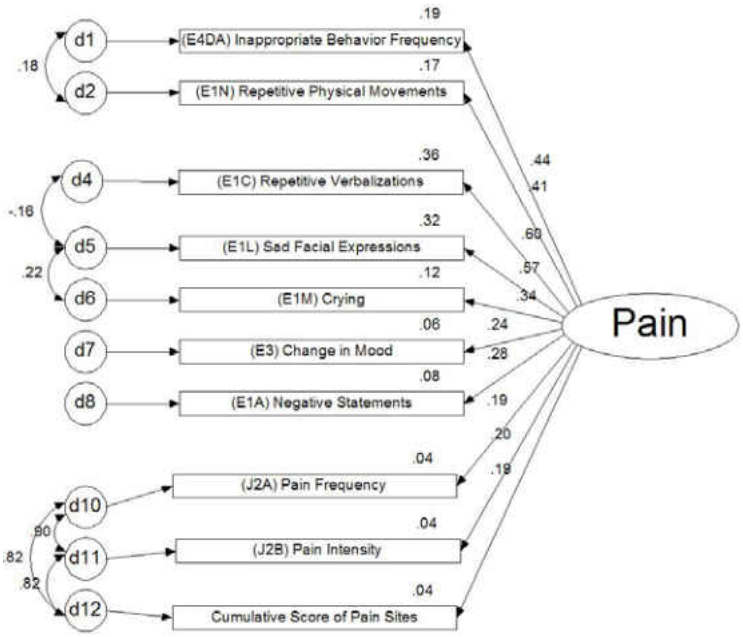

Figure 3.5. Final Model

Table 3.9. Final Model Factor Loadings

		Est.	S.E.	C.R.	P	Label
Cum_Pain_Site_2001	<--- Pain	1.000				
J2B_PAIN_INTENSITY	<--- Pain	1.024	.030	34.198	***	i
J2A_PAIN_FREQUENCY	<--- Pain	.879	.026	33.856	***	h
E1A_NEG_STATE	<--- Pain	.373	.022	16.645	***	g
E3_MOOD_CHANGE	<--- Pain	.808	.051	15.860	***	f
E1M_CRYING	<--- Pain	.951	.056	17.117	***	e
E1L_WORRIED_FACE	<--- Pain	2.718	.152	17.913	***	d
E1C_REPEAT_VERB	<--- Pain	2.137	.117	18.289	***	c
E1N_REPEAT_MOVES	<--- Pain	2.216	.121	18.277	***	b
E4DA_DIS_BEHAVIOR	<--- Pain	2.961	.160	18.532	***	a

***Significantly different from zero at the 0.001 level (two-tailed)

The differences between the chi-square ($\Delta\chi^2$) and the degrees of freedom (df) of the two models were compared to assess the model improvement from the initial model with twelve indicators to the final model with ten indicators: $\Delta\chi^2 = \frac{\chi_0^2 - \chi_1^2}{df_0 - df_1}$

30589.3-4933.4/249-143= 25655.9/106=**242.04.** Comparing the original model to the final model shows a large gap and therefore increases the probability that the change model is improved. Behavioral item physically abusive (E4CA) was dropped due to weak correlations

and a non-significant factor loading (p=.288). Inferred pain component, unsteady gait (J1N), was also dropped due to weak correlations and to improve the model parsimony for the inferred dimension of pain. The final revised model allows measurement errors to be correlated with each other and better capture shared measurement errors of more correlated items. Chi-square values of the model were expected to be large, because of the sample size. Model fit statistics are found in Table 3.10 (See Table 3.11 for Definitions of Goodness of Fit Statistics).

Table 3.10. Goodness of Fit Statistics for the Measurement Models

Goodness of Fit Statistics	Stacked Original Model	Stacked Revised Model
χ^2	30589.3	4933.4
Degrees of freedom (df)	249	143
P	.000	.000
Number of Free parameters	63	77
χ^2/df	122.849	34.45
RMR	.024	.011
GFI	.887	.981
TLI	.820	.965
AGFI	.859	.970
RMSEA	.048	.025
Hoelter (.05)	500	1850

Table 3.11. Goodness of Fit Statistical Terms

Goodness of Fit Statistics	Terms and understanding statistical output
χ^2 (chi-square)	Best for models with sample sizes between 75-100; for n>100 chi-square is almost always significant since the magnitude is affected by the sample size; also affected by the size of correlations in the model, the larger the correlations the poorer the fit
Degrees of freedom (df)	The number of degrees of freedom and equals p-q (the # of sample moments subtract the # of parameters estimated)
P	The probability is ideally non-significant; however, significant models can still yield valuable theoretical construct information
Number of Free parameters	Multiple times 5-10 to estimate required sample size for the study
χ^2/df	Use to compare models; this number should decrease from model to model; <5 is good, but must have p>.05; close to 1.0 means it is a correct model.
RMR	Root mean square residual is the square root of the average amount that the sample variances and covariances differ from their estimates, smaller values are better.
GFI (also GOF)	Slightly less than or equal (0-1) to 1 indicates a perfect fit; acceptable values are above 0.90; affected by sample size and can be large for poorly specified models.
TLI	The Tucker-Lewis coefficient should be between 0-1, values close to 1 indicate a very good fit.
AGFI (also AGOF)	Adjusted goodness of fit index, takes into account the df available for testing the model; AGFI is bound by 1, which indicates a perfect fit; however is not bound by 0.
RMSEA	Should be less than 0.05; score of less than 0.05 indicates a close fit of the model in relation to the df. Not definitive but the rule of thumb is a RMSEA of 0.01 is an exact fit, a score of 0.08 or less indicates a reasonable error of approximation. A model with an RMSEA of greater than 0.1 should not be used—indicates a poor fit.
Hoelter (.05)	The largest sample size for which one would accept the hypothesis that the model is correct; the index should only be calculated if the chi-square is statistically significant. How small one's sample size would have to be for chi-square to no longer be significant. Hoelter recommends values of at least 200, values ≤75 indicate a poor fit.

The model fit was greatly improved from the initial to the final model. Reduced root mean square residuals (RMR) were achieved and the goodness of fit (GFI) further approached 1.0 with the adjustments made. The TLI values should be between zero and one—the adjusted model indicates a value of .965. Values close to 1.0 indicate a very good fit. Scores for RMSEA are ideally below 0.05 and the changes made reduced this value to 0.025.

In comparing, the model fit by cognitive status with a side-by-side comparison (Figure 3.4), notable variations in correlations occur within inferred pain domains, especially comparing intact/mild to moderate/severe cognitive states. The intact/mild groups and the moderate/severe groups show similar values for associations and correlated errors for inferred pain items (i.e., J2a

Pain Frequency, J2b Pain Intensity, and Cumulative Score of Pain Sites). This information is helpful in understanding the relationship of resident cognition and how additional dimensions (e.g., behavioral, affective and cognitive) add further detail to clarifying the pain construct. The overall model fit indicates utility across all cognitive levels. Pain scores could be converted to a standardized score, including all of the indicators to a converted t-score, the factorial scores could be retained using a weighted score, or pain indicators could simply be added for a cumulative score.

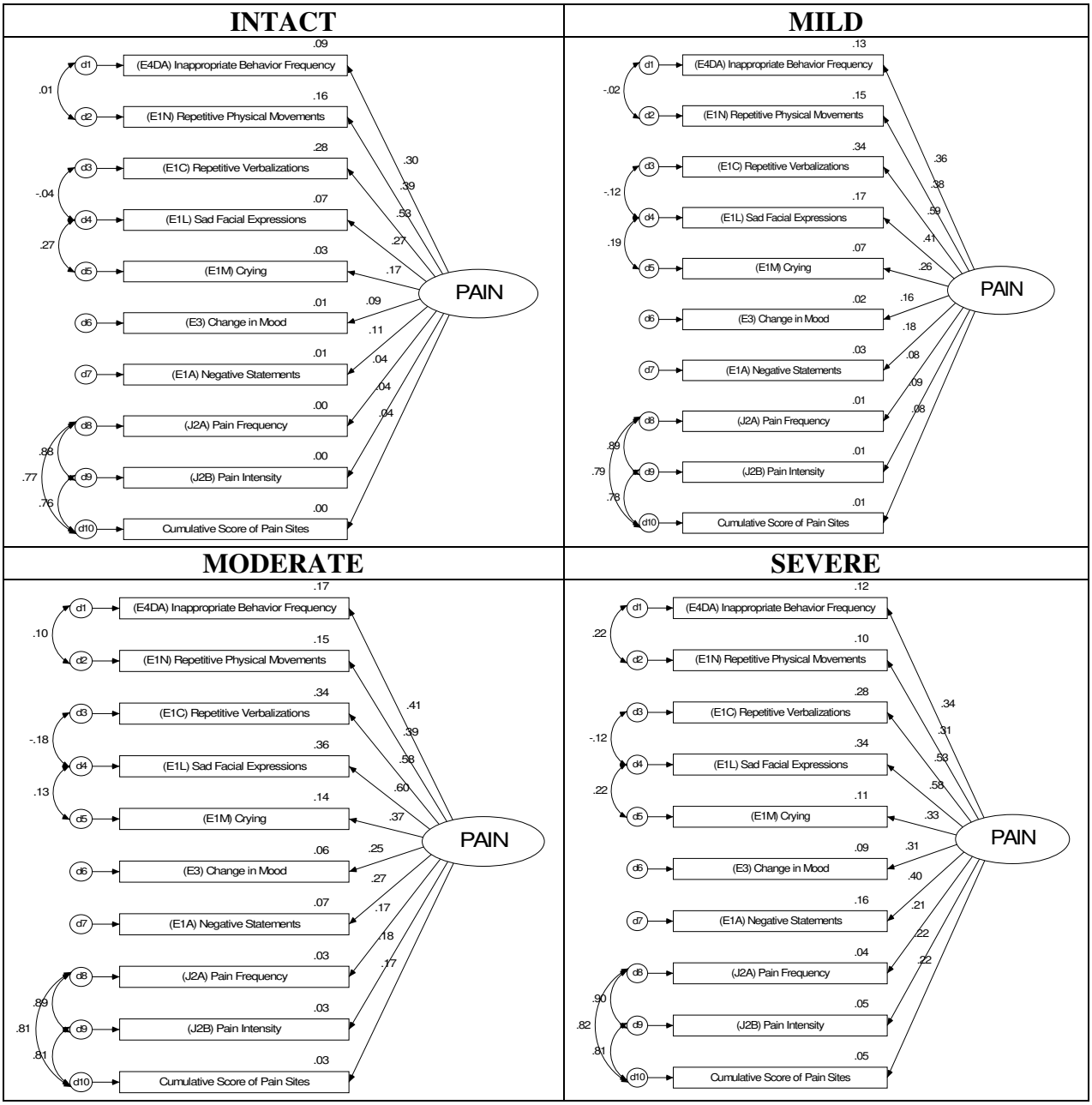

Figure 3.6. Measurement Models by Cognitive Status with Correlations and Shared Error.

Discussion

The findings from this pilot study support the pragmatic utility of additional measures to detect pain in the elderly, beyond self-reports of pain intensity and frequency. Research working towards further defining dimensions of pain in the elderly increases our ability to understand and

assess pain characteristics in this population. Findings of primary concern substantiate research to date [27] on pain in those residents with severe cognitive impairment, along with the role behavioral indicators add to identify pain beyond self-report measures.

The PS items (Table 3.5) indicated the majority of the sample (68.8%) were not experiencing pain. When this total was broken down by cognitive status, as the cognitive state declined, pain frequency and intensity also declined. Forty-eight percent of the cognitively intact group was reported as experiencing pain, while only 18.2% of those with severe cognitive impairment were assessed as having pain. These findings support other research to date indicating pain is potentially under-reported in this population.[27, 50, 151, 189-192]

Prior models of pain have included cognitive, affective and behavioral components.[30, 92, 149, 159, 193, 194] The latent construct of pain could include these three dimensions as a discrete measure in a model. Because this study was used as a stacked comparison, cognitive items were used as the grouping variable and not as a separate measure in the pain model. The goal was to gain an understanding of the overall all fit of the model by cognitive state. Future studies could examine this construct using cognition, affect and behavior as separate measures.

Self-reported measures of pain could be further validated with more assessments that are objective. From a theoretical perspective, the evaluation of the proposed models and indicators is not exhaustive of all the potential cues within the dimensions of cognition, affect, behavioral and inferred pain indicators that could explain the construct of pain. The research was limited to the available items from MDS. Important in the use of large data sets is having a clear clinical and evidentiary base to substantiate why certain indicators are used and not others.[195] Hypothesized indicators chosen from MDS were based on knowledge and research conducted to this point. Theoretical modeling can start a dialogue of other indicators useful and shown from

previous smaller-scale studies to indicate pain beyond self-reports from the resident. Correlations between indicators can clarify the degree of association between the dimensions and unique relationships between behaviors. As our understanding of pain increases, clinicians are better equipped to measure quality initiatives in the assessment, treatment and prevention of pain.

Focusing interventions only on the severely cognitively-impaired, those at high-risk for untreated pain, fails to take in to account population-level factors, and would limit options to reduce the burden of chronic pain for all of those residing in long-term care.[196] A need exists for continued quality improvement and additional research to increase our understanding of pain behaviors and the effect of treatments on the elderly. The goal is improving pain control at all cognitive levels.[151] Using existing data, we can target specific behaviors and evaluate outcomes to determine if uniformity of care is being applied across long-term care settings. In addition, when constructing federally required assessments, it is important to assess what standards are being applied in the use of key items as quality measures.

This pilot study adds insight into additional domains/dimensions that can be used to improve pain assessment, and re-evaluation efforts to detect pain and improve pain outcomes. Further evaluating concomitance between pain and cognitive status longitudinally would gain additional perspective of the long-term relationship between these two constructs. Future directions for research should include the persistence of behaviors. The MDS 2.0 contains alterability of selected behavioral items in section E4. Persistence of behaviors could indicate progression of the disease process, effectiveness of interventions to change behaviors, or an unknown factor in behavioral response to multiple stimuli.

Limitations of this study were the data distribution. The data were positively skewed. Normality and equal group distribution were not assumed. Mahanalobis distance was not used to eliminate outliers, because the majority (70%) of the population was initially reported as not experiencing pain and was not evenly distributed. Removing these cases would have removed a full spectrum of pain presentation of atypical symptoms of pain, the target of the study. Prior studies question the reliability of mood and behavioral sections from rater to rater when using MDS.[182, 197] Additionally, the majority of residents needing skilled nursing care have some level of cognitive impairment, so intact groups were not proportionate to the mild, moderate and severe groups.

Conclusion

A comprehensive plan for pain management should evaluate staffing patterns, staff education, and examine differences in pain policies and procedures to ultimately use pain management as a primary quality indicator in long-term care settings.[198] Modeling theoretical constructs can serve as valuable tool to determine the fit between clinical knowledge, the healthcare context and individual needs. Additional research examining a covariance model of the relationship between pain and cognitive status over the long-term could reveal if concomitant relationships exist. Evaluating covariance models including antecedents and consequences of long-term suffering from unresolved pain would further support the significance of understanding indicators and accurately assessing, documenting and treating pain.

CHAPTER 4: A STUDY OF LONGITUDINAL DATA EXAMINING CONCOMITANCE OF PAIN AND COGNITION IN AN ELDERLY LONG-TERM CARE POPULATION

Introduction

Pain control is a primary concern across all care settings. Though a universal care concern, pain is frequently viewed in the elderly as a normal process of aging.[199] Estimates of 49 to 83% of 1.8 million residents in long-term care have acute or chronic pain, yet the recognition and treatment of pain still presents a challenge.[2-4, 50, 200] Recognizing a spectrum of pain behaviors beyond traditional self-reports and increasing this knowledge with clinicians and support staff is a significant challenge in the provision of care to the elderly.

Predominantly, pain and cognitive decline often coexist in the elderly, with approximately 47% of residents in nursing homes having a diagnosis of dementia.[3] Pain assessment and treatment is complex, because residents have varying degrees of cognitive function, complicating how their needs are communicated. When these symptoms do coexist, little is known about the interaction of pain and cognitive decline, beyond laboratory imaging of the brain from a patho-physiological perspective.[201, 202] Empirical studies both support and refute poor neurocognitive performance in conjunction with increased pain intensity.[194, 203-206] Evaluating longitudinal data to assess if a relationship occurs between pain and cognitive decline may assist in addressing these ambiguous findings.

The aim of this research was to examine if a concomitance exists between cognition and pain in the elderly residing in long-term care.

Research Questions:

In a sample of nursing home residents,

1) Is cognitive decline a predictor of increased pain?

2) Is increasing pain a predictor of cognitive decline?

Research evaluating the theoretical constructs of pain and contributing factors is lacking. Theoretical modeling using clinical data is a method to evaluate resident characteristics and symptoms for inter-relationships between variables. Modeling if chronic pain leads to worsening cognition, or declining cognition contributes to worsened pain, would test the theoretical constructs of this relationship. The significance and correlations of these variables creates a foundation for building additional models, with secondary needs and resident outcomes. Long-term unresolved pain may lead to secondary symptoms and comorbidities. Information of the relationship between pain and cognition adds to an understanding of how resident outcomes occur, and how quality initiatives can be approached—all fundamental to determine if resident care needs are being met.

Significance

Evaluating cognition in conjunction with pain helps to clarify if treating either symptom lessens the severity of the other, or if the symptoms are independent. Organic brain disorders cause a progressive process of cognitive decline.[207] It is not possible for individuals to regain a normal level of functioning, the process is degenerative. Pain may potentiate symptoms of cognitive decline. Understanding if concomitance exists helps to understand if treatments could be targeted at symptoms to improve a resident's condition, or quality of life.

Understanding the relationship between cognition and pain establishes how these two variables could be included in a theoretical framework. This enables resident outcomes to be more accurately measured through symptoms and treatments, determining the most effective and cost-conscious actions. If pain and cognition were parallel and not an antecedent of the other, a

symptom model would be inaccurate, making it difficult to determine where and what symptoms could be treated. Neglecting to include variables as predictors of the others yields an incomplete clinical picture and theoretical model, making it difficult to find and measure care solutions, because the root causes were not fully described. Understanding the clinical pathways and interrelationships of resident symptoms is essential to strategic planning and prioritizing resident care needs. Pain and cognition could be independent factors or directly influenced through the other.

Resource allocation in a struggling Medicare-funded system is a difficult process to navigate. A new National Institute of Health (NIH) nursing home rating system incorporates pain as a quality measure, previously neglected in long-term resident care assessments.[174, 208] Staff assessments, resident nonverbal cues, verbal complaints, facial expressions and protective body movements were added as additional assessment items to more fully capture pain in this population.

The use of a federally mandated resident assessment surveys is a cost-effective, time-efficient tool to gain insight into resident care needs, and provides an opportunity to increase our understanding of resident symptom pathways and the effectiveness of interventions used. Using existing clinical data to test theoretical constructs adds valuable information to the validity of the models posited against real world, resident care data.

Background

Pain is an intricate sensory experience—involving physiological, pathological, social, cognitive, and emotional factors.[209, 210] Sensory process is modulated by cognitive load.[211-214] Cognitive load helps to describe how hard it is for the individual to make sense of a stimulus. Cognitive decline is progressive and may manifest as symptoms of aphasia (language), apraxia

(perform directed acts), agnosia (recognize objects), and/or disturbances in global functioning (planning, organizing, sequencing, and abstract thoughts). Considerable issues exist in the detection of pain in residents with moderate to severe cognitive impairment. A lower incidence of pain is reported as cognition declines, largely due to measurement and communication issues.[215, 216] Informal and formal caregivers have noted differences in pain behavioral cues depending on the resident's cognitive status, especially with the interpretation of body movements.[217]

A case report presented by Ashpole and Katz [209] described a patient with a life-long history of pain (somatoform pain disorder). The patient's refractory pain was unresolved causing daily verbal complaints of discomfort. After the onset of dementia, the patient's self-reports of pain sharply declined. The pain symptoms were posited to be presenting as an altered mood (e.g., depression or irritability) and cognitive decline.

Chronic pain is attributed to increased risk of depression in the elderly.[156, 189, 218, 219] Depressive symptoms are linked to a decreased processing and motor function, but depression is not a conclusive result of memory impairment.[220] Chronic pain results in changes to the resident's personality, social interactions, lifestyle, and functional status, impacting his/her quality of life.[189] Unresolved pain may result in a decline of the resident's quality of life causing delirium, depression, weight loss, social isolation, decreased activities of daily living, impaired gait, increased incidence of falls and comorbidities. Quality of life declines with chronic untreated pain, especially as the intensity of pain increases.[189] To date, the relationship between cognition and pain has been evaluated in case reports and patho-physiological studies, but not as a large-scale analysis of concomitance.

Theoretical framework

The concept of need-driven behaviors[23] and the framework extending this model to include the consequences of need-driven, dementia compromised behaviors [24] (Figure 4.1) serves as the theoretical framework for this research study. The need-driven behavior, pain, is a co-existing symptom to cognitive state, a background factor. Proximal issues like a decline in physical state, and social and environmental causes, precipitate improvement or exacerbation of the original need, resolving the resident's pain.

The long-term consequence of unresolved need-driven behaviors gives rise to additional behavioral symptoms and secondary unmet needs. The primary relationship of cognition and pain are evaluated for this study. Future theoretical constructs including the complete model, would further evaluate the relationship of secondary needs (i.e., depression, weight loss, social isolation, higher falls risks, decreased ADLs, impaired gait), and how appropriate interventions mitigate the occurrence of secondary needs. Appropriate interventions to primary needs could improve resident quality of life, use healthcare resources more efficaciously, and reduce staff burden. The theoretical framework enables the clinician to translate a complex system of resident, caregiver, environment, and outcomes, as a measurable tool to improve care.

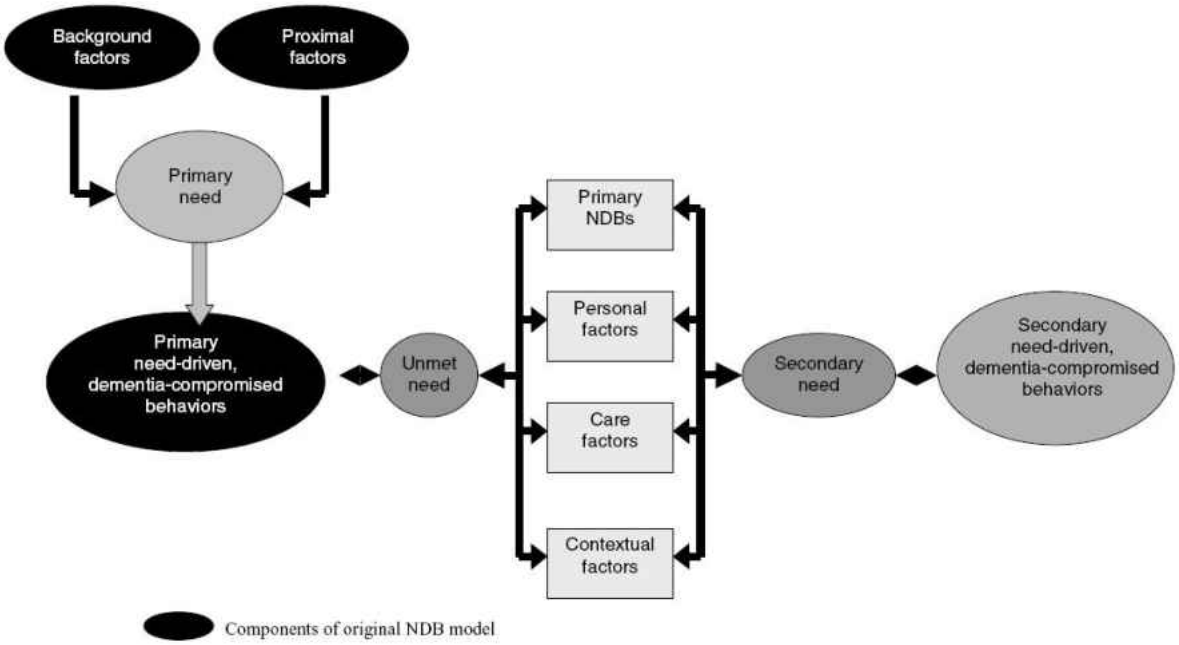

Figure 4.1. Reprinted with Permission, Kovach's et. al. [24] Model of Consequences of Need-Driven, Dementia Compromised Behaviors

Methods

Design and Sample

A longitudinal cohort design was used. Data were collected from 2001, 2002 and 2003 on residents residing in Medicare receiving nursing homes across the United States. Minimum Data Set (MDS) 2.0 [178] annual assessments were used as the data source, including all residents age 65 and older. Comatose residents were excluded from the sample, because key item sections (Sections B-F) are not scored. These items are required for the pain index instrument used in this study. Not filling out the cognitive, communications/hearing, mood and behavior, and psychosocial well-being sections of MDS adheres to the instructions given to assessors completing the resident assessment forms.

Data were extracted from a de-identified resident database containing the MDS items. The sample yielded 56,494 subjects (see Figure 4.2 for Sample Methods). The University of

Central Florida Institutional Review Board (IRB) assigned an exempt status to the study. Data collection was retrospective and no interventions were tested.

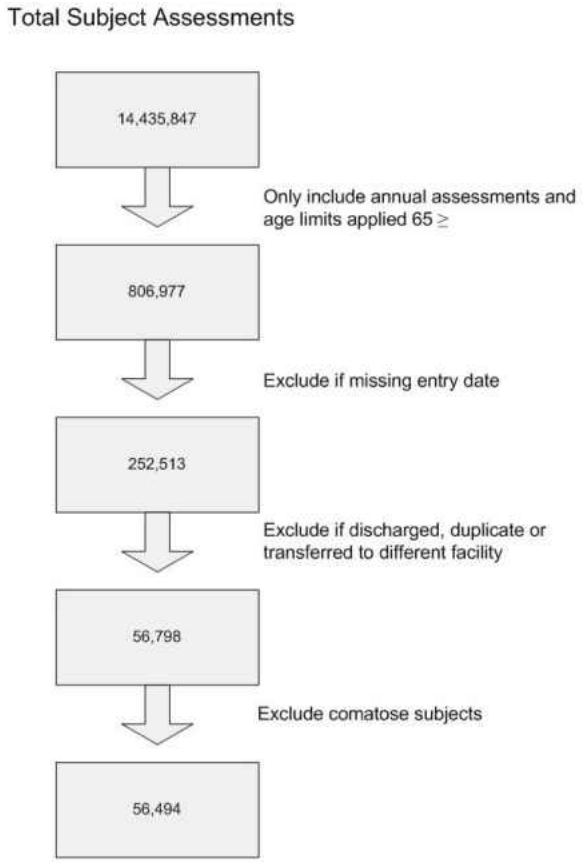

Figure 4.2. Sample Method

Instruments

The MDS is a nationally required assessment providing information on the quality of care provided in nursing homes.[174] Core items from the MDS instrument are used for care planning to trigger events or symptoms requiring intervention (e.g. pressure ulcers, delirium, cognitive loss, falls, and mood state). Pain is not a care-planning trigger from the Resident Assessment Protocol (RAP) however, it is a quality measure.[178] MDS items have demonstrated good to excellent validity and reliability[179-181] with interrater and test-retest reliability from 0.40 to 0.80 dependent on the item section.[179] A composite score was used to detect pain from core MDS

items (pain items analyzed are detailed in Table 4.1). The significance (p=.01) and validity of the measures used in the pain index were established in a previous pilot study.[216] Pain scores could range from 0 to 34. Score weighting is determined by the ordinal scoring used in the MDS instrument. The pain index includes Fries' Pain Scale[123] (PS) items (e.g. J2a for pain frequency and item J2b, pain intensity). The PS items highly correlated with a pain sites summary score.[216] Additional dimensions of affective and behavioral items are also included to aid in detecting pain across cognitive states (Figure 4.3).

Table 4.1. Pain Score Items.

INDICATORS	
Variable	Description
Inferred/Reported Pain	
(J2A) Pain Frequency	Frequency resident complains or shows evidence of pain
(J2B) Pain Intensity	Intensity of pain described or displayed by the resident
Pain Sites Score	Cumulative pain site index, items J2a-J3j, K1c; higher scores indicates more pain sites
Affect	
(E1L) Sad Facial Expressions	Sad, pained, worried facial expressions, i.e. furrowed brows
(E1M) Crying	Indicator of distress. Behavior is recorded by frequency in the last 30 days irrespective of the cause of the behavior (indicator)
(E3) Change in Mood	Refers to status of any symptoms described in section E (mood); snapshot of current observation period, not just a point in time.
Behavioral	
(E1A) Negative Statements	Resident made negative statements, e.g. "Nothing matters, would rather be dead, what's the use, regrets having lived so long."
(E1C) Repetitive Verbalizations	Calling out for help, repeated statements
(E4DA) Inappropriate Behavior Frequency	Disruptive sounds, noisiness, screaming, self-abuse acts, sexual behavior or disrobing in public, smeared/threw feces, hoarding, rummaging through other's belongings
(E1N) Repetitive Physical Movements	Pacing, hand wringing, restlessness, fidgeting, picking.
(E4CA) Physically Abusive Frequency	Others are hit, shoved, scratched, sexually abused

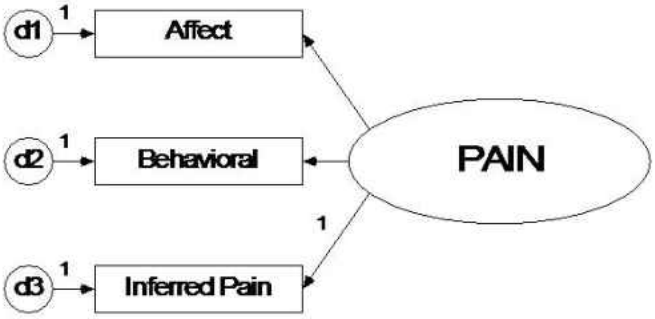

Figure 4.3. Pain Construct.

The Cognitive Performance Scale (CPS) was used to determine resident cognitive state. The CPS instrument uses key MDS items from section B, C and G of the resident assessment form.[183, 184] The CPS measure correlates highly ($r \geq 0.70$) with the Folstein Mini-Mental Status Examination (MMSE).[185] The MDS derived CPS scores were converted to MMSE average totals. The averaged scores could range from 0.04 (severe impairment) to 24.9, an intact cognitive state. A CPS score of 6 converts to an average MMSE of 0.4; a 3 to 15.4; and 0 score to a MMSE of 24.9.[183] In validation testing of the CPS scores against the MMSE, a sensitivity of 0.94 and specificity of 0.94 were shown[185], indicating the utility of this instrument is viable in determining resident cognitive status from MDS derived items.

Statistical Analysis

Descriptive statistics, correlations and repeated measures ANOVAs were completed using SPSS 14.0. The SPSS statistical modeling program, AMOS 6.0, was used to build the covariance model of pain and cognitive state at three different time intervals for 2001, 2002 and 2003. Pain and cognition scores were hypothesized to be inversely related. Increasing pain score items indicated higher levels of pain. Cognitive decline was noted with a lower MMSE score. The analyses were one-tailed.

The covariance model was evaluated for goodness of fit statistics; however, the model was simplistic with only six discrete measures and five residual terms, so fit statistics would

indicate a just identified model. Due to the required large sample size to run structural equation modeling, assessment of statistical power is complex.[188, 221] Sample size requirements generally are the number of free parameters (n=17) times five to 10, to estimate sample size. The sample total (n=56,494) far exceeds this rule.

Results

Select MDS items were colleted on 56,494 subjects with a mean age of 83 years. In total, 80% of the sample was female and 84% were Caucasian. The study demographics are in found Table 4.2. The most prevalent diagnosis was arthritis (33.7%) with 14.2% of the sample complaining of joint point at the first data collection (Table 4.3). Over the three year period, the percent of residents diagnosed with arthritis increased by 8% and recorded joint pain dropped to 11.3%.

Table 4.2. Demographic Characteristics of Residents

(n=56,494)		Mean ±S.D/ Percent of Total	Range
Age		83.3 ±8.2	65-112
Gender	Male	20.4%	
	Female	79.6%	
Marital Status	Never married	14.7%	
	Married	14.9%	
	Widowed	60.2%	
	Separated	2.3%	
	Divorced	7.9%	
Ethnicity	American Indian/Alaskan Native	0.3%	
	Asian/Pacific Islander	1.2%	
	Black, not of Hispanic origin	11.7%	
	Hispanic	2.9%	
	White, not of Hispanic origin	83.9%	
Language	English	94.6%	
	Spanish	2.4%	
	French	0.2%	
	Other	2.8%	
Education Level	No Schooling	3.0%	
	8th grade/less	30.9%	
	9-11 grade	14.4%	
	High school	32.9%	
	Technical or trade school	4.1%	
	Some college	7.3%	
	Bachelor's degree	4.2%	
	Graduate degree	1.7%	
	Not coded/missing	1.5%	

Table 4.3. Diseases/Events with Potential Pain Symptoms

Disease	Number from Total (n=56, 494)	Percent of Total
Diabetes	11,885	21.0%
Peripheral Vascular Disease	6,459	11.4%
Arthritis	19,013	33.7%
Complaint of Joint Pain	8,018	14.2%
Hip Fracture	2,181	3.9%
Multiple Sclerosis	447	0.8%
Emphysema/COPD	7,021	12.4%
Cancer	3,031	5.4%
Renal Failure	1,382	2.4%
Pneumonia	498	0.9%
Respiratory Infection	1,277	2.3%
Septicemia	31	0.1%
Tuberculosis	20	0.0004%
Urinary Tract Infection (UTI)	2,865	5.1%
Wound Infection	295	0.5%

Cognitive state did not fluctuate over the three measures observed. Cognition declined slightly over the three-year period, as did pain (Table 4.4). The majority of the sample, 60 to 67%, was moderately to severely cognitively-impaired.

Table 4.4. Longitudinal Chart of the Cognitive and Pain Scores

Cognitive Status	**2001**	**2002**	**2003**
CPS Mean Score	2.9±1.8	3.0±1.9	3.2±1.9
MMSE Mean Score	14.5±7.8	13.7±8.1	12.8±8.3
Intact	13.6%	12.2%	10.4%
Mild impairment	26.7%	24.4%	22.2%
Moderate impairment	29.4%	29%	28.4%
Severe impairment	30.3%	34.3%	39%
Pain Score	2.4±2.9	2.34±2.8	2.18±2.8
Mode	0	0	0
Range (Possible Range 0-34)	0-26	0-20	0-22
No reported pain symptoms	42%	43%	45%

A one-way repeated measure ANOVA was calculated for cognition and pain. Each variable compared subject scores at three different time intervals: 2001, 2002, and 2003. A significant effect was found for cognition ($F(2,112986) = 5949.23$, $p<.01$) and pain ($F(2, 112986) = 271.82$, $p<.01$). Significant ANOVAs require a post hoc analysis. Follow-up protected *t* test with repeated measures was used, because of limitations of SPSS to run a post hoc analysis for within-subject factors.[222] A protected *t* test between each measure inflates the risk of Type I errors, so a significance level of 0.017 was used (0.05/3 measures) instead of 0.05. The follow-up protected *t* test revealed that cognition scores decreased significantly ($p<.017$) for the 2001 cogntion1 (m=14.5, sd=1.80) to 2002 cognition2 (m=13.7, sd=8.1) to 2003 cognition3 (m=12.8, sd=8.3) scores; and pain scores decreased significantly ($p=.017$) for pain1 (m=2.4, sd=2.9) to pain2 (m=2.34, sd2.8) to pain3 (m=2.18, sd=2.8).

Regression weights of 1 were assigned to each residual variable. A residual term was not attached to cognition1 (Figure 4.4), because there was no predictor for these variables. The covariance models indicate pain (1-3) and cognition (1-3) measurements were stable over time

with previous measures being a good predictor of subsequent measures. Higher stability was observed with the cognitive measure than with the measure of pain. The cross-legged effect of both cognitive and pain measure was not consistent. Little association was found between cognition and pain variables, regardless of the time interval. A concomitant relationship was significant ($p<0.01$), but the associations were weak ranging from absolute values of 0.03 to 0.08 (Table 4.5).

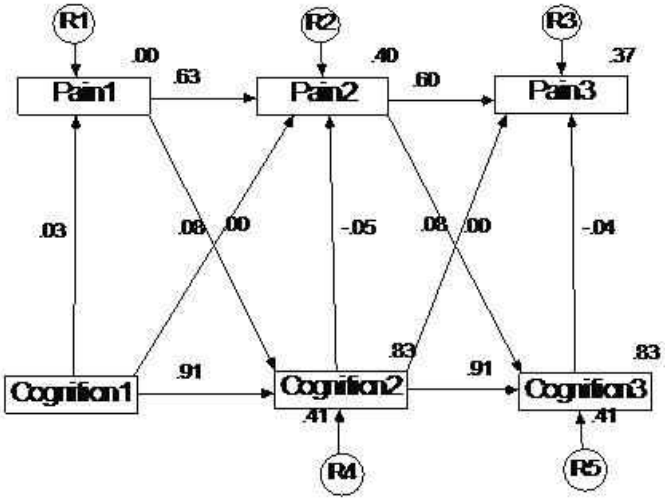

Figure 4.4. Covariance Model 1 of Three-Year Concomitance of Cognition and Pain

Table 4.5. Correlations.

N=56,494	Mean	S.D.	1	2	3	4	5	6
1. Pain Score 2001	2.43	2.89	**1.00**					
2. MMSE 2001	14.51	7.88	.028**	**1.00**				
3. Pain Score 2002	2.34	2.85	.635**	.056**	**1.00**			
4. MMSE 2002	13.59	8.20	.022**	.912**	.041**	**1.00**		
5. Pain 2003	2.1	2.77	.492**	.073**	.606**	.065**	**1.00**	
6. MMSE 2003	12.63	8.36	.019**	.851**	.036**	.913**	.052**	**1.00**

**Correlation is significant at the 0.01 level (one-tailed)

The root mean square residual (RMR) is the averaged squared amount by which the sample variances and covariances differ in their estimates.[221] A smaller RMR is preferred with a value of 0 indicating a perfect fit (see Table 4.6). The goodness of fit index (GFI), as it approaches 1 indicates a perfect fit. The optimal values outputted by the model for the GFI, TLI

and AGFI could be attributed to the simplicity of the model, even though all three were approaching 1.0.

Table 4.6. Goodness of Fit Statistics of the Covariance Model

Goodness of Fit Statistics	Model 1	Model 2
χ^2	2524.9	2828.6
Degrees of freedom (df)	4	4
P	.000	.000
Number of Free parameters	17	17
χ^2/df	631.224	707.158
RMR	.332	.205
GFI	.986	.984
TLI	.964	.959
AGFI	.924	.915
RMSEA	.106	.112
Hoelter (.01)	298	266

Discussion

The sample data do not confirm concomitance between pain and cognition in this long-term care population. The theoretical construct does not support either measure as a predictor of the other. These findings support Kovach's model of Consequences of Need-Driven, Dementia Compromised Behaviors (C-NDB). Cognition (background factor) and pain (proximal factor) exist as co-contributing aspects of how need-driven behaviors are manifested and communicated. Kovach's [24] C-NDB model serves as template to understand how symptoms and environmental factors interact. This system contains environmental and contextual factors, affecting the resident and care outcomes. Failing to identify resident care needs is not in isolation of the resident, but is a complex system of clinician, support staff, environmental factors, and the resident.

MDS can be used as a reliable tool to track resident characteristics and outcomes over time. Reporting was consistent for cognition and pain over the three-year period—considerable fluctuations in recorded values of cognition and pain did not occur. Because pain assessments

were recorded annually, differences in pain would be anticipated. The findings showed a gradual decline in recorded pain over the three-year period, as cognition also declined. This raises concern, because these findings may support previous research, indicating pain is under-reported and under-treated in residents with cognitive decline.[223-225]

Drops in pain scores at the third interval could also be attributed to residents having less pain, or residents having received appropriate interventions for their pain. Differences in pain would be expected with recent events like fracture, surgery, or falls. Partitioning this group of residents into a separate cohort could evaluate the consistency of pain reporting, and pain measures specific to these acute events. Until clinicians and support staff increase their awareness of affective, cognitive, and behavioral indicators of pain, the reliability of MDS for pain measures will be a concern.

Results suggest the importance of assessing memory function when managing residents that are physiologically distressed, because this information aids in determining the best methods to assess resident pain.[92, 167, 218] Over the three-year period, declines in cognitive status occurred, consistent with the progression of organic brain disease. Acute declines in cognition may be indicative of a change in mental status not attributed to the progression of a pre-existing disease, but the onset of infection (i.e., urinary tract infection, pneumonia, or sepsis), or psychiatric illness.

Further research could look at specific diagnoses and the consistency of cognitive decline and pain measures over time. Additional variables like the use of multiple medications (e.g., polypharmacy), or certain classes of medications, (i.e., antipsychotics or hypnotics), could yield valuable information about attributable factors causing resident decline, and create an index of outcomes for pharmacoeconomic and clinical data to support resident care guidelines and health

policy reform. Supplemental theoretical modeling could evaluate latent growth models with predictors combining pain, cognition, age, gender, and facility characteristics gaining an understanding of pain and cognition in the elderly beyond this concomitance study. Additionally, research examining a growth curve model, plotting parallel points in time, would give valuable information into trends in data distribution and would clarify if the model were polynomial.

A limitation of this research was the data distribution. Normality and population distribution were not equal. The majority of the population assessed was not experiencing pain, and cognitive groups were not equal. While the population demographics are representative of nursing home residents, very distinct population demographics (i.e., gender, race, educational background, socio-economic factors) limit generalizability beyond this setting. Variability of the reliability measures from rater to rater of the MDS sections for mood and behavior have been reported.[182, 197] The research was limited to the available items in MDS, and these items might not capture, define or describe all pain symptoms. Even with the additional dimensions to measure pain across cognitive states, there are still dimensions of pain yet to be defined or discovered.

Conclusion

This research sought to gain preliminary insight into the relationship between pain and cognition. Investigating if cognition is a predictor of pain in a concomitant relationship aided in defining how secondary patient outcomes might be mediated. Further research should be used to link cognition, resident ability to communicate, and levels of pain for significance with quality of life measures like depression, disturbances in gait, weight loss, decreased activity, declines in functional status, or social isolation. In the case of most organic brain diseases, there is not a

return to a normal level of cognitive functioning, but a progressive decline. Pain is a cycle that can be intervened upon, and symptoms can be lessened through medicinal and non-medicinal treatments improving resident comfort. With an understanding of the role of cognition in identifying how pain is communicated, we can improve pain detection and uniformity of measures to ameliorate symptoms. The significance of confirming, theoretical frameworks with advanced multivariate analysis is an opportunity to evaluate interactions of key variables. A global assessment of concomitance between pain and cognition offers a unique insight to have a better understanding of the relationship of pain and cognition in a general nursing home population.

CHAPTER 5: CONCLUSION

In a longitudinal study of cognition and pain in the elderly residents of long-term care facilities, it was found that measures of both pain and cognition decreased over a three-year period. Decreasing reports of pain from this study support previous research that pain may be underreported in those with impaired cognition. In the sample studied, neither pain nor cognition was a predictor of the other; however, it is important to gain information into how these variables co-exist and influence the occurrence of secondary needs and long-term patient outcomes.

Implications for Practice

Because pain was assessed and reported less frequently as cognition declined, it is important to identify and use other methods of assessing pain in this population, so pain does not go undetected causing suffering and exacerbation of additional secondary needs. Instead of treating resident's needs as a set of symptoms, we should anticipate the long-term consequence and effect on resident quality of life. For example, care planning might reveal a resident at risk for pain causing symptoms, and scores for the MDS-RAI would further substantiate pain through indicated pain behaviors. Initial screening would include a risk analysis for care deficits, take a prospective look at complications, and more closely monitor outcomes from interventions. We would gain immense benefit from having a better understanding of the mechanism with which resident state declines and how to increase resident quality of life in a cost-effective manner through more accurate measures of pain and targeted interventions.

Implications for Policy

At a minimum, the MDS-RAI 2.0 is recorded annually on all residents under Medicare coverage to evaluate the quality of care for reporting to consumers and providers. New

admissions and changes in resident status require additional assessments of residents to note changes in care needs. The MDS-RAI 2.0 does not use pain as a Resident Assessment Protocol (RAP) trigger to indicate a problem from clinically relevant data about resident health problems or functional status. Significant health policy concerns arise when pain, a fundamental care need, is not being used as a quality measure to evaluate care being provided in nursing homes across the United States. It is also argued that pain measures are a point in time from annual assessments, and if pain items were used as a quality measure, how could this data be accurate to gain an overall picture of resident care with only a 7-day review in an annual assessment. The upcoming MDS-RAI 3.0 is slated for release in October 2009, and integrates additional pain measures; however pain management should be a care priority in grading nursing home performance to give an accurate picture of care to consumers and providers. Health policy on pain management has a significant opportunity to improve care for this population, if the MDS-RAI is used as a quality measure, than the inclusiveness and accuracy of reporting should include pain as a health priority.

Implications for Research

The findings of this study add important details into the identification of additional dimensions of pain beyond self-report measures, like pain intensity and pain frequency. Identifying dimensions, such as affective, behavioral and cognitive factors work towards building a solution to improve the assessment, detection and treatment of pain in the elderly. Efforts defining additional dimensions of pain beyond the affective, behavioral and inferred dimensions discussed are an opportunity to further research on residents living in long-term care. Having an understanding of the antecedents of pain and cognitive decline enables clinicians to identify which variables can be intervened to enable the most efficacious outcomes. Future

research examining covariance models with added quality of life indicators and secondary needs, such as delirium, functional status, social engagement, depression, or falls, would contribute additional knowledge into patient outcomes, cost-effective measures, program planning for care priorities, and clarify administrative factors (i.e., unit culture, staffing, non-medicinal interventions) which improve or negatively effect patient care.

This was one of the first studies to look at the relationship of cognition and pain in long-term care residents using a large dataset. While cognition is not concomitant with pain, cognitive state is a key factor in how we approach measuring pain in the cognitively-impaired resident. Pain is a symptom that can be intervened upon and changed, while cognition can be used to determine the most appropriate method to assess pain in the elderly, improving the accuracy of detecting pain in this population.

APPENDIX A: UNIVERSITY OF CENTRAL FLORIDA IRB APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Notice of Exempt Review Status

From: **UCF Institutional Review Board**
FWA00000351, Exp. 6/24/11, IRB00001138

To: **Allison H. Burfield**

Date: **August 07, 2008**

IRB Number: **SBE-08-05756**

Study Title: **Cohort Study of Pain Behaviors in the Elderly Residing in Skilled Nursing Care**

Dear Researcher:

Your research protocol was reviewed by the IRB Chair on 8/7/2008. Per federal regulations, 45 CFR 46.101, your study has been determined to be **minimal risk for human subjects and exempt** from 45 CFR 46 federal regulations and further IRB review or renewal unless you later wish to add the use of identifiers or change the protocol procedures in a way that might increase risk to participants. Before making any changes to your study, call the IRB office to discuss the changes. **A change which incorporates the use of identifiers may mean the study is no longer exempt, thus requiring the submission of a new application to change the classification to expedited if the risk is still minimal.** Please submit the Termination/Final Report form when the study has been completed. All forms may be completed and submitted online at https://iris.research.ucf.edu.

The category for which exempt status has been determined for this protocol is as follows:

4. Research involving the collection or study of existing data, documents, records, pathological specimens or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. ("***Existing***" means already collected and/or stored before your study starts, not that collection will occur as part of routine care.)

The IRB has approved a request to **waive the consent process** as set forth in the federal regulations 45 CFR 46.116(d)(1-4).

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 08/07/2008 11:16:41 AM EDT

IRB Coordinator

APPENDIX B: DATA USER AGREEMENT

University of Central Florida

Doctoral Program in Public Affairs

June 30, 2008

Allison Burfield
Doctoral Student
College of Nursing
University of Central Florida
Orlando, Florida

Dear Ms. Burfield:

It is my pleasure to serve on your dissertation committee at the College of Nursing. As a principal investigator for the nursing home care quality project, I will provide you with research files generated from the MDS and OSCAR files. For your information, the MDS files are available for 1999-2003 from the Health Informatics Research Lab. You are authorized to use the data files, without personal identifiers. In addition, our research staff will provide you with technical support if it is needed.

I look forward to working with you.

Sincerely,

Thomas T.H. Wan, Ph.D., MHS
Professor of Public Affairs, Health Services Administration and Medicine
Director, Doctoral Program in Public Affairs
Associate Dean for Research

College of Health and Public Affairs
3280 Progress Drive • Orlando, FL 32826-0544 • (407) 823-0170 • FAX: (407) 823-0744

APPENDIX C: DISSERTATION DEFENSE ANNOUNCEMENT

Announcing the Final Examination of Mrs. Allison H. Burfield for the degree of Doctor of Philosophy

Date: March 25, 2009
Time: 2:00 pm
Room: HPA I, Room 117
Dissertation Title: Cohort Study of Pain Behaviors in the Elderly Residing in Skilled Nursing Care

Aim/Objectives: The aim of this research was to examine if a concomitant relationship exists between cognition and pain in an elderly population residing in long-term care.
Background/Significance: Prior research has found that cognitive load mediates interpretation of a stimulus. In the presence of decreased cognitive capacity, the relationship between cognition and increasing pain is unknown in the elderly. Chronic and acute onset of pain contributes to a significant decline in resident quality of life affecting the residents' physical, mental, psychosocial, and spiritual well-being.
Methods: A longitudinal cohort design was used. A pilot study established core indicators used in the pain construct and instrument. Data were collected from the Minimum Data Set-Resident Assessment Instrument (MDS-RAI) for 2001, 2002 and 2003 annual assessments of nursing home residents. Key cognitive, mood, behavioral, and health condition items were used to determine resident cognition and the existence of pain. A covariance model was used to evaluate the relationship between cognition and pain at three intervals.
Results: The sample included 56,494 subjects from nursing homes across the United States, with an average age of 83 ±8.2 years. ANOVA indicated a significant effect ($p<.01$) for pain and cognition with protected *t* test revealing scores decreased significantly over time with these two measures. Relative stability was found for pain and cognition over time. Greater stability was found in the cognitive measure than the pain measure. Cross-legged effects observed between cognition and pain measure was not consistent. A concomitant relationship was not found between cognition and pain. Although the relationship was significant at the 0.01 level, the correlations were low ($r\leq.08$) indicating a weak association between cognition and pain.
Discussion/Implication: Gaining an understanding of the concomitance between pain and cognition aids in building a more accurate model of the theoretical constructs, depicting interrelationships and additional factors from significant associations not just supposition. MDS is a reliable tool to follow resident characteristics and outcomes over time. Accurate measures of pain and cognition can give important information into how resident symptoms can be intervened to affect health outcomes.
Conclusion: While cognition is not concomitant with pain, cognitive state is a key factor in how we approach measuring pain in the cognitively-impaired resident. Cognition can be used to determine the most appropriate method to assess pain in the elderly, improving the accuracy of detecting pain in this population.

Outline of Studies:
Major: Nursing
Educational Career:
A.D.N., 1995, Athens Technical College
B.S.N., 2000, University of Central Florida

M.S.N., 2006, University of Central Florida

Committee in Charge:
Dr. Mary Lou Sole
Dr. Thomas T.H. Wan
Dr. Steven Talbert
Dr. Diane Andrews

Approved for distribution by Mary Lou Sole, Committee Chair, on March 4, 2009.

The public is welcome to attend.

APPENDIX D: COPYRIGHT PERMISSION FOR KOVACH'S C-NDB

Mrs. Allison H. Burfield, MSN, RN, Doctoral Candidate
12532 Castlemain Trail
Orlando, FL 32828

March 2, 2009

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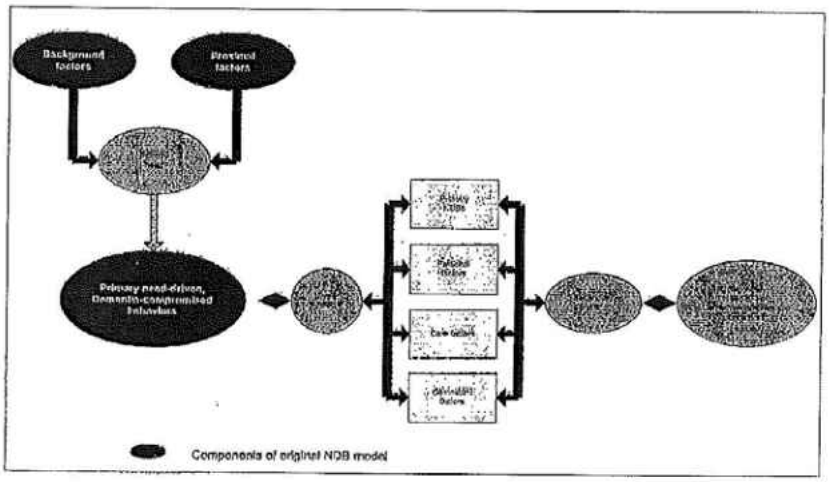

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Sincerely,

Allison H. Bamford

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APPENDIX E: COPYRIGHT PERMISSION FOR ALGASE NDB MODEL

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Allison H. Burfield
12532 Castlemain Trail
Orlando, FL 32828

02 March 2009

Dear Ms. Burfield,

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APPENDIX F: MINIMUM DATA SET- RESIDENT ASSESSMENT INSTRUMENT 2.0

Numeric Identifier_____

MINIMUM DATA SET (MDS) — *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

BASIC ASSESSMENT TRACKING FORM

SECTION AA. IDENTIFICATION INFORMATION

1.	RESIDENT NAME©	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
2.	GENDER©	1. Male 2. Female
3.	BIRTHDATE©	Month — Day — Year
4.	RACE/ETHNICITY©	1. American Indian/Alaskan Native 2. Asian/Pacific Islander 3. Black, not of Hispanic origin 4. Hispanic 5. White, not of Hispanic origin
5.	SOCIAL SECURITY AND MEDICARE NUMBERS© [C in 1st box if non med. no.]	a. Social Security Number b. Medicare number (or comparable railroad insurance number)
6.	FACILITY PROVIDER NO.©	a. State No. b. Federal No.
7.	MEDICAID NO. ["+" if pending, "N" if not a Medicaid recipient]©	
8.	REASONS FOR ASSESSMENT	[Note—Other codes do not apply to this form] a. Primary reason for assessment 1. Admission assessment (required by day 14) 2. Annual assessment 3. Significant change in status assessment 4. Significant correction of prior full assessment 5. Quarterly review assessment 10. Significant correction of prior quarterly assessment 0. *NONE OF ABOVE* b. ***Codes for assessments required for Medicare PPS or the State*** *1. Medicare 5 day assessment* *2. Medicare 30 day assessment* *3. Medicare 60 day assessment* *4. Medicare 90 day assessment* *5. Medicare readmission/return assessment* *6. Other state required assessment* *7. Medicare 14 day assessment* *8. Other Medicare required assessment*

9. Signatures of Persons who Completed a Portion of the Accompanying Assessment or Tracking Form

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with applicable Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that residents receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Sections	Date
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		
k.		
l.		

GENERAL INSTRUCTIONS

Complete this information for submission with all full and quarterly assessments (Admission, Annual, Significant Change, State or Medicare required assessments, or Quarterly Reviews, etc.)

© = Key items for computerized resident tracking

☐ = When box blank, must enter number or letter a. = When letter in box, check if condition applies

MDS 2.0 September, 2000

Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) — *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

BACKGROUND (FACE SHEET) INFORMATION AT ADMISSION

SECTION AB. DEMOGRAPHIC INFORMATION

1.	DATE OF ENTRY	*Date the stay began. Note — Does not include readmission if record was closed at time of temporary discharge to hospital, etc. In such cases, use prior admission date* Month — Day — Year	
2.	ADMITTED FROM (AT ENTRY)	1. Private home/apt. with no home health services 2. Private home/apt. with home health services 3. Board and care/assisted living/group home 4. Nursing home 5. Acute care hospital 6. Psychiatric hospital, MR/DD facility 7. Rehabilitation hospital 8. Other	
3.	LIVED ALONE (PRIOR TO ENTRY)	0. No 1. Yes 2. In other facility	
4.	ZIP CODE OF PRIOR PRIMARY RESIDENCE		
5.	RESIDENTIAL HISTORY 5 YEARS PRIOR TO ENTRY	(***Check all settings*** *resident* ***lived in*** *during 5 years prior to date of entry given in item AB1 above)*	
		Prior stay at this nursing home	a.
		Stay in other nursing home	b.
		Other residential facility—board and care home, assisted living, group home	c.
		MH/psychiatric setting	d.
		MR/DD setting	e.
		NONE OF ABOVE	f.
6.	LIFETIME OCCUPATION(S) [Put "/" between two occupations]		
7.	EDUCATION (*Highest Level Completed*)	1. No schooling 2. 8th grade/less 3. 9-11 grades 4. High school 5. Technical or trade school 6. Some college 7. Bachelor's degree 8. Graduate degree	
8.	LANGUAGE	(*Code for correct response*) a. Primary Language 0. English 1. Spanish 2. French 3. Other	
		b. If other, specify	
9.	MENTAL HEALTH HISTORY	Does resident's RECORD indicate any history of mental retardation, mental illness, or developmental disability problem? 0. No 1. Yes	
10.	CONDITIONS RELATED TO MR/DD STATUS	(***Check all conditions*** *that are related to MR/DD status that were manifested before age 22, and are likely to continue indefinitely)*	
		Not applicable—no MR/DD (Skip to AB11)	a.
		MR/DD with organic condition	
		Down's syndrome	b.
		Autism	c.
		Epilepsy	d.
		Other organic condition related to MR/DD	e.
		MR/DD with no organic condition	f.
11.	DATE BACKGROUND INFORMATION COMPLETED	Month — Day — Year	

SECTION AC. CUSTOMARY ROUTINE

1.	CUSTOMARY ROUTINE (*In year prior to DATE OF ENTRY to this nursing home, or year last in community if now being admitted from another nursing home*)	(***Check all that apply.*** *If all information UNKNOWN, check last box only)*	
		CYCLE OF DAILY EVENTS	
		Stays up late at night (e.g., after 9 pm)	a.
		Naps regularly during day (at least 1 hour)	b.
		Goes out 1+ days a week	c.
		Stays busy with hobbies, reading, or fixed daily routine	d.
		Spends most of time alone or watching TV	e.
		Moves independently indoors (with appliances, if used)	f.
		Use of tobacco products at least daily	g.
		NONE OF ABOVE	h.
		EATING PATTERNS	
		Distinct food preferences	i.
		Eats between meals all or most days	j.
		Use of alcoholic beverage(s) at least weekly	k.
		NONE OF ABOVE	l.
		ADL PATTERNS	
		In bedclothes much of day	m.
		Wakens to toilet all or most nights	n.
		Has irregular bowel movement pattern	o.
		Showers for bathing	p.
		Bathing in PM	q.
		NONE OF ABOVE	r.
		INVOLVEMENT PATTERNS	
		Daily contact with relatives/close friends	s.
		Usually attends church, temple, synagogue (etc.)	t.
		Finds strength in faith	u.
		Daily animal companion/presence	v.
		Involved in group activities	w.
		NONE OF ABOVE	x.
		UNKNOWN—Resident/family unable to provide information	y.

SECTION AD. FACE SHEET SIGNATURES

SIGNATURES OF PERSONS COMPLETING FACE SHEET:

a. Signature of RN Assessment Coordinator — Date

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with applicable Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that residents receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Sections	Date
b.		
c.		
d.		
e.		
f.		
g.		

☐ = When box blank, must enter number or letter [a.] = When letter in box, check if condition applies

Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) — *VERSION 2.0*
FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING
FULL ASSESSMENT FORM

(Status in last 7 days, unless other time frame indicated)

SECTION A. IDENTIFICATION AND BACKGROUND INFORMATION

1.	RESIDENT NAME	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
2.	ROOM NUMBER	
3.	ASSESSMENT REFERENCE DATE	a. *Last day of MDS observation period* Month — Day — Year b. Original (0) or corrected copy of form (enter number of correction)
4a.	DATE OF REENTRY	Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) Month — Day — Year
5.	MARITAL STATUS	1. Never married 2. Married 3. Widowed 4. Separated 5. Divorced
6.	MEDICAL RECORD NO.	
7.	CURRENT PAYMENT SOURCES FOR N.H. STAY	(*Billing Office to indicate; check all that apply in last 30 days*) a. Medicaid per diem b. Medicare per diem c. Medicare ancillary part A d. Medicare ancillary part B e. CHAMPUS per diem f. VA per diem g. Self or family pays for full per diem h. Medicaid resident liability or Medicare co-payment i. Private insurance per diem (including co-payment) j. Other per diem
8.	REASONS FOR ASSESSMENT *[Note—if this is a discharge or reentry assessment, only a limited subset of MDS items need be completed]*	a. Primary reason for assessment 1. Admission assessment (required by day 14) 2. Annual assessment 3. Significant change in status assessment 4. Significant correction of prior full assessment 5. Quarterly review assessment 6. Discharged—return not anticipated 7. Discharged—return anticipated 8. Discharged prior to completing initial assessment 9. Reentry 10. Significant correction of prior quarterly assessment 0. *NONE OF ABOVE* b. ***Codes for assessments required for Medicare PPS or the State*** *1. Medicare 5 day assessment* *2. Medicare 30 day assessment* *3. Medicare 60 day assessment* *4. Medicare 90 day assessment* *5. Medicare readmission/return assessment* *6. Other state required assessment* *7. Medicare 14 day assessment* *8. Other Medicare required assessment*
9.	RESPONSIBILITY/ LEGAL GUARDIAN	(***Check all that apply***) a. Legal guardian b. Other legal oversight c. Durable power of attorney/health care d. Durable power attorney/financial e. Family member responsible f. Patient responsible for self g. *NONE OF ABOVE*
10.	ADVANCED DIRECTIVES	(*For those items with supporting **documentation** in the medical record, **check all that apply***) a. Living will b. Do not resuscitate c. Do not hospitalize d. Organ donation e. Autopsy request f. Feeding restrictions g. Medication restrictions h. Other treatment restrictions i. *NONE OF ABOVE*

SECTION B. COGNITIVE PATTERNS

1.	COMATOSE	(*Persistent vegetative state/no discernible consciousness*) 0. No 1. Yes (**If yes, skip to Section G**)
2.	MEMORY	(*Recall of what was learned or known*) a. Short-term memory OK—seems/appears to recall after 5 minutes 0. Memory OK 1. Memory problem b. Long-term memory OK—seems/appears to recall long past 0. Memory OK 1. Memory problem
3.	MEMORY/ RECALL ABILITY	(***Check all that resident was normally able to recall during last 7 days***) a. Current season b. Location of own room c. Staff names/faces d. That he/she is in a nursing home e. *NONE OF ABOVE* are recalled
4.	COGNITIVE SKILLS FOR DAILY DECISION-MAKING	(*Made decisions regarding tasks of daily life*) 0. *INDEPENDENT*—decisions consistent/reasonable 1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only 2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required 3. *SEVERELY IMPAIRED*—never/rarely made decisions
5.	INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/ AWARENESS	(*Code for behavior in the **last 7 days.***) ***[Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time].*** 0. Behavior not present 1. Behavior present, not of recent onset 2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening) a. EASILY DISTRACTED—(e.g., difficulty paying attention; gets sidetracked) b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day) c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought) d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out) e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space; difficult to arouse; little body movement) f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)
6.	CHANGE IN COGNITIVE STATUS	Resident's cognitive status, skills, or abilities have changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated

SECTION C. COMMUNICATION/HEARING PATTERNS

1.	HEARING	(*With hearing appliance, if used*) 0. *HEARS ADEQUATELY*—normal talk, TV, phone 1. *MINIMAL DIFFICULTY* when not in quiet setting 2. *HEARS IN SPECIAL SITUATIONS ONLY*—speaker has to adjust tonal quality and speak distinctly 3. *HIGHLY IMPAIRED*/absence of useful hearing
2.	COMMUNICATION DEVICES/ TECHNIQUES	(***Check all that apply** during last 7 days*) a. Hearing aid, present and used b. Hearing aid, present and not used regularly c. Other receptive comm. techniques used (e.g., lip reading) d. *NONE OF ABOVE*
3.	MODES OF EXPRESSION	(***Check all used** by resident to make needs known*) a. Speech b. Writing messages to express or clarify needs c. American sign language or Braille d. Signs/gestures/sounds e. Communication board f. Other g. *NONE OF ABOVE*
4.	MAKING SELF UNDERSTOOD	(*Expressing information content—however able*) 0. *UNDERSTOOD* 1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts 2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests 3. *RARELY/NEVER UNDERSTOOD*
5.	SPEECH CLARITY	(*Code for speech in the **last 7 days***) 0. *CLEAR SPEECH*—distinct, intelligible words 1. *UNCLEAR SPEECH*—slurred, mumbled words 2. *NO SPEECH*—absence of spoken words
6.	ABILITY TO UNDERSTAND OTHERS	(*Understanding verbal information content—however able*) 0. *UNDERSTANDS* 1. *USUALLY UNDERSTANDS*—may miss some part/intent of message 2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication 3. *RARELY/NEVER UNDERSTANDS*
7.	CHANGE IN COMMUNICATION/ HEARING	Resident's ability to express, understand, or hear information has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated

☐ = When box blank, must enter number or letter [a.] = When letter in box, check if condition applies

Resident _____ Numeric Identifier _____

SECTION D. VISION PATTERNS

1.	VISION	(*Ability to see in adequate light and with glasses if used*) 0. *ADEQUATE*—sees fine detail, including regular print in newspapers/books 1. *IMPAIRED*—sees large print, but not regular print in newspapers/books 2. *MODERATELY IMPAIRED*—limited vision; not able to see newspaper headlines, but can identify objects 3. *HIGHLY IMPAIRED*—object identification in question, but eyes appear to follow objects 4. *SEVERELY IMPAIRED*—no vision or sees only light, colors, or shapes; eyes do not appear to follow objects	
2.	VISUAL LIMITATIONS/ DIFFICULTIES	Side vision problems—decreased peripheral vision (e.g., leaves food on one side of tray, difficulty traveling, bumps into people and objects, misjudges placement of chair when seating self)	a.
		Experiences any of following: sees halos or rings around lights; sees flashes of light; sees "curtains" over eyes	b.
		NONE OF ABOVE	c.
3.	VISUAL APPLIANCES	Glasses; contact lenses; magnifying glass 0. No 1. Yes	

SECTION E. MOOD AND BEHAVIOR PATTERNS

1.	INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD	(*Code for indicators observed in last 30 days, irrespective of the assumed cause*) 0. Indicator not exhibited in last 30 days 1. Indicator of this type exhibited up to five days a week 2. Indicator of this type exhibited daily or almost daily (5, 7 days a week)	
		VERBAL EXPRESSIONS OF DISTRESS	
		a. Resident made negative statements—e.g., "*Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die*"	
		b. Repetitive questions—e.g., "*Where do I go; What do I do?*"	
		c. Repetitive verbalizations—e.g., calling out for help, ("*God help me*")	
		d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received	
		e. Self deprecation—e.g., "*I am nothing; I am of no use to anyone*"	
		f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others	
		g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack	
		h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions	
		i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/reassurance regarding schedules, meals, laundry, clothing, relationship issues	
		SLEEP-CYCLE ISSUES	
		j. Unpleasant mood in morning	
		k. Insomnia/change in usual sleep pattern	
		SAD, APATHETIC, ANXIOUS APPEARANCE	
		l. Sad, pained, worried facial expressions—e.g., furrowed brows	
		m. Crying, tearfulness	
		n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking	
		LOSS OF INTEREST	
		o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends	
		p. Reduced social interaction	
2.	MOOD PERSISTENCE	**One or more indicators of depressed, sad or anxious mood were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days** 0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered	
3.	CHANGE IN MOOD	Resident's mood status has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	
4.	BEHAVIORAL SYMPTOMS	(A) ***Behavioral** symptom **frequency in last 7 days*** 0. Behavior not exhibited in last 7 days 1. Behavior of this type occurred 1 to 3 days in last 7 days 2. Behavior of this type occurred 4 to 6 days, but less than daily 3. Behavior of this type occurred daily (B) ***Behavioral** symptom **alterability in last 7 days*** 0. Behavior not present OR behavior was easily altered 1. Behavior was not easily altered	(A) (B)
		a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety)	
		b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at)	
		c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused)	
		d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings)	
		e. RESISTS CARE (resisted taking medications/ injections, ADL assistance, or eating)	

5.	CHANGE IN BEHAVIORAL SYMPTOMS	Resident's behavior status has changed as compared to **status of 90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated	

SECTION F. PSYCHOSOCIAL WELL-BEING

1.	SENSE OF INITIATIVE/ INVOLVEMENT	At ease interacting with others	a.
		At ease doing planned or structured activities	b.
		At ease doing self-initiated activities	c.
		Establishes own goals	d.
		Pursues involvement in life of facility (e.g., makes/keeps friends; involved in group activities; responds positively to new activities; assists at religious services)	e.
		Accepts invitations into most group activities	f.
		NONE OF ABOVE	g.
2.	UNSETTLED RELATIONSHIPS	Covert/open conflict with or repeated criticism of staff	a.
		Unhappy with roommate	b.
		Unhappy with residents other than roommate	c.
		Openly expresses conflict/anger with family/friends	d.
		Absence of personal contact with family/friends	e.
		Recent loss of close family member/friend	f.
		Does not adjust easily to change in routines	g.
		NONE OF ABOVE	h.
3.	PAST ROLES	Strong identification with past roles and life status	a.
		Expresses sadness/anger/empty feeling over lost roles/status	b.
		Resident perceives that daily routine (customary routine, activities) is very different from prior pattern in the community	c.
		NONE OF ABOVE	d.

SECTION G. PHYSICAL FUNCTIONING AND STRUCTURAL PROBLEMS

1. (A) ADL SELF-PERFORMANCE—(***Code** for resident's **PERFORMANCE OVER ALL SHIFTS during last 7 days**—Not including setup*)
   0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days
   1. *SUPERVISION*—Oversight, encouragement or cueing provided 3 or more times during last7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days
   2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days
   3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times:
      —Weight-bearing support
      — Full staff performance during part (but not all) of last 7 days
   4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days
   8. *ACTIVITY DID NOT OCCUR* during entire 7 days

   (B) ADL SUPPORT PROVIDED—(***Code** for **MOST SUPPORT PROVIDED OVER ALL SHIFTS during last 7 days; code regardless** of resident's self-performance classification*)
   0. No setup or physical help from staff
   1. Setup help only
   2. One person physical assist
   3. Two+ persons physical assist
   8. ADL activity itself did not occur during entire 7 days

			(A) SELF-PERF	(B) SUPPORT
a.	BED MOBILITY	How resident moves to and from lying position, turns side to side, and positions body while in bed		
b.	TRANSFER	How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)		
c.	WALK IN ROOM	How resident walks between locations in his/her room		
d.	WALK IN CORRIDOR	How resident walks in corridor on unit		
e.	LOCOMOTION ON UNIT	How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair		
f.	LOCOMOTION OFF UNIT	How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair		
g.	DRESSING	How resident puts on, fastens, and takes off all items of **street clothing**, including donning/removing prosthesis		
h.	EATING	How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition)		
i.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes		
j.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)		

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2.	**BATHING**	How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) ***Code for most dependent*** *in self-performance and support.* **(A)** BATHING SELF-PERFORMANCE codes appear below	(A)	(B)
		0. Independent—No help provided		
		1. Supervision—Oversight help only		
		2. Physical help limited to transfer only		
		3. Physical help in part of bathing activity		
		4. Total dependence		
		8. Activity itself did not occur during entire 7 days (*Bathing support codes are as defined in* ***Item 1, code B above***)		
3.	**TEST FOR BALANCE** (see training manual)	(*Code for ability during test in the* ***last 7 days***) 0. Maintained position as required in test 1. Unsteady, but able to rebalance self without physical support 2. Partial physical support during test; or stands (sits) but does not follow directions for test 3. Not able to attempt test without physical help		
		a. Balance while standing		
		b. Balance while sitting—position, trunk control		
4.	**FUNCTIONAL LIMITATION IN RANGE OF MOTION** (see training manual)	(*Code for limitations during* ***last 7 days*** *that interfered with daily functions or placed resident at risk of injury*) **(A)** *RANGE OF MOTION* 0. No limitation 1. Limitation on one side 2. Limitation on both sides **(B)** *VOLUNTARY MOVEMENT* 0. No loss 1. Partial loss 2. Full loss	(A)	(B)
		a. Neck		
		b. Arm—including shoulder or elbow		
		c. Hand—including wrist or fingers		
		d. Leg—including hip or knee		
		e. Foot—including ankle or toes		
		f. Other limitation or loss		
5.	**MODES OF LOCOMOTION**	(***Check all that apply*** *during* ***last 7 days***) Cane/walker/crutch [a.] Wheelchair primary mode of locomotion [d.] Wheeled self [b.] Other person wheeled [c.] *NONE OF ABOVE* [e.]		
6.	**MODES OF TRANSFER**	(***Check all that apply*** *during* ***last 7 days***) Bedfast all or most of time [a.] Lifted mechanically [d.] Bed rails used for bed mobility or transfer [b.] Transfer aid (e.g., slide board, trapeze, cane, walker, brace) [e.] Lifted manually [c.] *NONE OF ABOVE* [f.]		
7.	**TASK SEGMENTATION**	Some or all of ADL activities were broken into subtasks during **last 7 days** so that resident could perform them 0. No 1. Yes		
8.	**ADL FUNCTIONAL REHABILITATION POTENTIAL**	Resident believes he/she is capable of increased independence in at least some ADLs [a.] Direct care staff believe resident is capable of increased independence in at least some ADLs [b.] Resident able to perform tasks/activity but is very slow [c.] Difference in ADL Self-Performance or ADL Support, comparing mornings to evenings [d.] *NONE OF ABOVE* [e.]		
9.	**CHANGE IN ADL FUNCTION**	Resident's ADL self-performance status has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated		

SECTION H. CONTINENCE IN LAST 14 DAYS

1.	CONTINENCE SELF-CONTROL CATEGORIES (***Code for resident's PERFORMANCE OVER ALL SHIFTS***) 0. *CONTINENT*—Complete control *[includes use of indwelling urinary catheter or ostomy device that does not leak urine or stool]* 1. *USUALLY CONTINENT*—BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly 2. *OCCASIONALLY INCONTINENT*—BLADDER, 2 or more times a week but not daily; BOWEL, once a week 3. *FREQUENTLY INCONTINENT*—BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week 4. *INCONTINENT*—Had inadequate control BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time			
a.	**BOWEL CONTINENCE**	Control of bowel movement, with appliance or bowel continence programs, if employed		
b.	**BLADDER CONTINENCE**	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed		
2.	**BOWEL ELIMINATION PATTERN**	Bowel elimination pattern regular—at least one movement every three days [a.] Diarrhea [c.] Fecal impaction [d.] Constipation [b.] *NONE OF ABOVE* [e.]		

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3.	**APPLIANCES AND PROGRAMS**	Any scheduled toileting plan [a.] Bladder retraining program [b.] External (condom) catheter [c.] Indwelling catheter [d.] Intermittent catheter [e.] Did not use toilet room/commode/urinal [f.] Pads/briefs used [g.] Enemas/irrigation [h.] Ostomy present [i.] *NONE OF ABOVE* [j.]		
4.	**CHANGE IN URINARY CONTINENCE**	Resident's urinary continence has changed as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved 2. Deteriorated		

SECTION I. DISEASE DIAGNOSES

Check only those diseases that have a relationship to current ADL status, cognitive status, mood and behavior status, medical treatments, nursing monitoring, or risk of death. (Do not list inactive diagnoses)

1.	**DISEASES**	(***If none apply, CHECK the NONE OF ABOVE box***)		
		ENDOCRINE/METABOLIC/NUTRITIONAL		
		Diabetes mellitus	[a.]	
		Hyperthyroidism	[b.]	
		Hypothyroidism	[c.]	
		HEART/CIRCULATION		
		Arteriosclerotic heart disease (ASHD)	[d.]	
		Cardiac dysrhythmias	[e.]	
		Congestive heart failure	[f.]	
		Deep vein thrombosis	[g.]	
		Hypertension	[h.]	
		Hypotension	[i.]	
		Peripheral vascular disease	[j.]	
		Other cardiovascular disease	[k.]	
		MUSCULOSKELETAL		
		Arthritis	[l.]	
		Hip fracture	[m.]	
		Missing limb (e.g., amputation)	[n.]	
		Osteoporosis	[o.]	
		Pathological bone fracture	[p.]	
		NEUROLOGICAL		
		Alzheimer's disease	[q.]	
		Aphasia	[r.]	
		Cerebral palsy	[s.]	
		Cerebrovascular accident (stroke)	[t.]	
		Dementia other than Alzheimer's disease	[u.]	
		Hemiplegia/Hemiparesis		[v.]
		Multiple sclerosis		[w.]
		Paraplegia		[x.]
		Parkinson's disease		[y.]
		Quadriplegia		[z.]
		Seizure disorder		[aa.]
		Transient ischemic attack (TIA)		[bb.]
		Traumatic brain injury		[cc.]
		PSYCHIATRIC/MOOD		
		Anxiety disorder		[dd.]
		Depression		[ee.]
		Manic depression (bipolar disease)		[ff.]
		Schizophrenia		[gg.]
		PULMONARY		
		Asthma		[hh.]
		Emphysema/COPD		[ii.]
		SENSORY		
		Cataracts		[jj.]
		Diabetic retinopathy		[kk.]
		Glaucoma		[ll.]
		Macular degeneration		[mm.]
		OTHER		
		Allergies		[nn.]
		Anemia		[oo.]
		Cancer		[pp.]
		Renal failure		[qq.]
		NONE OF ABOVE		[rr.]
2.	**INFECTIONS**	(***If none apply, CHECK the NONE OF ABOVE box***)		
		Antibiotic resistant infection (e.g., Methicillin resistant staph)	[a.]	Septicemia [g.]
		Clostridium difficile (c. diff.)	[b.]	Sexually transmitted diseases [h.]
		Conjunctivitis	[c.]	Tuberculosis [i.]
		HIV infection	[d.]	Urinary tract infection **in last 30 days** [j.]
		Pneumonia	[e.]	Viral hepatitis [k.]
		Respiratory infection	[f.]	Wound infection [l.]
				NONE OF ABOVE [m.]
3.	**OTHER CURRENT OR MORE DETAILED DIAGNOSES AND ICD-9 CODES**	a. _____ .		
		b. _____ .		
		c. _____ .		
		d. _____ .		
		e. _____ .		

SECTION J. HEALTH CONDITIONS

1.	**PROBLEM CONDITIONS**	(***Check all problems present*** *in* ***last 7 days*** *unless other time frame is indicated*)		
		INDICATORS OF FLUID STATUS		
		Weight gain or loss of 3 or more pounds within a 7 day period	[a.]	
		Inability to lie flat due to shortness of breath	[b.]	
		Dehydrated; output exceeds input	[c.]	
		Insufficient fluid; did **NOT** consume all/almost all liquids provided during **last 3 days**	[d.]	
		OTHER		
		Delusions	[e.]	
		Dizziness/Vertigo		[f.]
		Edema		[g.]
		Fever		[h.]
		Hallucinations		[i.]
		Internal bleeding		[j.]
		Recurrent lung aspirations in **last 90 days**		[k.]
		Shortness of breath		[l.]
		Syncope (fainting)		[m.]
		Unsteady gait		[n.]
		Vomiting		[o.]
		NONE OF ABOVE		[p.]

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2.	PAIN SYMPTOMS	(*Code the **highest level of pain** present in the **last 7 days***)			
		a. FREQUENCY with which resident complains or shows evidence of pain 0. No pain (***skip to J4***) 1. Pain less than daily 2. Pain daily		**b. INTENSITY** of pain 1. Mild pain 2. Moderate pain 3. Times when pain is horrible or excruciating	
3.	PAIN SITE	(*If pain present, **check all sites** that apply in **last 7 days***)			
		Back pain	a.	Incisional pain	f.
		Bone pain	b.	Joint pain (other than hip)	g.
		Chest pain while doing usual activities	c.	Soft tissue pain (e.g., lesion, muscle)	h.
		Headache	d.	Stomach pain	i.
		Hip pain	e.	Other	j.
4.	ACCIDENTS	(*Check all that apply*)			
		Fell in **past 30 days**	a.	Hip fracture in **last 180 days**	c.
		Fell in **past 31-180 days**	b.	Other fracture in **last 180 days**	d.
				NONE OF ABOVE	e.
5.	STABILITY OF CONDITIONS	Conditions/diseases make resident's cognitive, ADL, mood or behavior patterns unstable—(fluctuating, precarious, or deteriorating)			a.
		Resident experiencing an acute episode or a flare-up of a recurrent or chronic problem			b.
		End-stage disease, 6 or fewer months to live			c.
		NONE OF ABOVE			d.

SECTION K. ORAL/NUTRITIONAL STATUS

1.	ORAL PROBLEMS	Chewing problem			a.
		Swallowing problem			b.
		Mouth pain			c.
		NONE OF ABOVE			d.
2.	HEIGHT AND WEIGHT	*Record (a.) **height in inches** and (b.) **weight in pounds**. Base weight on most recent measure in **last 30 days**; measure weight consistently in accord with standard facility practice—e.g., in a.m. after voiding, before meal, with shoes off, and in nightclothes* a. HT (in.) ___ ___ b. WT (lb.) ___ ___ ___			
3.	WEIGHT CHANGE	**a. Weight loss**—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** 0. No 1. Yes			
		b. Weight gain—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** 0. No 1. Yes			
4.	NUTRITIONAL PROBLEMS	Complains about the taste of many foods	a.	Leaves 25% or more of food uneaten at most meals	c.
		Regular or repetitive complaints of hunger	b.	*NONE OF ABOVE*	d.
5.	NUTRITIONAL APPROACHES	(*Check all that apply in last 7 days*)			
		Parenteral/IV	a.	Dietary supplement between meals	f.
		Feeding tube	b.	Plate guard, stabilized built-up utensil, etc.	g.
		Mechanically altered diet	c.	On a planned weight change program	h.
		Syringe (oral feeding)	d.	*NONE OF ABOVE*	i.
		Therapeutic diet	e.		
6.	PARENTERAL OR ENTERAL INTAKE	(***Skip to Section L if neither 5a nor 5b is checked***)			
		a. Code the proportion of **total calories** the resident received through parenteral or tube feedings in the **last 7 days** 0. None 3. 51% to 75% 1. 1% to 25% 4. 76% to 100% 2. 26% to 50%			
		b. Code the average **fluid intake** per day by IV or tube in **last 7 days** 0. None 3. 1001 to 1500 cc/day 1. 1 to 500 cc/day 4. 1501 to 2000 cc/day 2. 501 to 1000 cc/day 5. 2001 or more cc/day			

SECTION L. ORAL/DENTAL STATUS

1.	ORAL STATUS AND DISEASE PREVENTION	Debris (soft, easily movable substances) present in mouth prior to going to bed at night		a.
		Has dentures or removable bridge		b.
		Some/all natural teeth lost—does not have or does not use dentures (or partial plates)		c.
		Broken, loose, or carious teeth		d.
		Inflamed gums (gingiva); swollen or bleeding gums; oral abcesses; ulcers or rashes		e.
		Daily cleaning of teeth/dentures or daily mouth care—by resident or staff		f.
		NONE OF ABOVE		g.

SECTION M. SKIN CONDITION

1.	ULCERS (Due to any cause)	(*Record the number of ulcers at each ulcer stage—regardless of cause. If none present at a stage, record "0" (zero). Code all that apply during **last 7 days**. Code 9 = 9 or more.*) ***[Requires full body exam.]***			Number at Stage
		a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved.			
		b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater.			
		c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues - presents as a deep crater with or without undermining adjacent tissue.			
		d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.			
2.	TYPE OF ULCER	(*For each type of ulcer, **code for the highest stage in the last 7 days** using scale in item M1—i.e., 0=none; stages 1, 2, 3, 4*)			
		a. Pressure ulcer—any lesion caused by pressure resulting in damage of underlying tissue			
		b. Stasis ulcer—open lesion caused by poor circulation in the lower extremities			
3.	HISTORY OF RESOLVED ULCERS	Resident had an ulcer that was resolved or cured **in LAST 90 DAYS** 0. No 1. Yes			
4.	OTHER SKIN PROBLEMS OR LESIONS PRESENT	(***Check all that apply** during **last 7 days***)			
		Abrasions, bruises			a.
		Burns (second or third degree)			b.
		Open lesions other than ulcers, rashes, cuts (e.g., cancer lesions)			c.
		Rashes—e.g., intertrigo, eczema, drug rash, heat rash, herpes zoster			d.
		Skin desensitized to pain or pressure			e.
		Skin tears or cuts (other than surgery)			f.
		Surgical wounds			g.
		NONE OF ABOVE			h.
5.	SKIN TREATMENTS	(***Check all that apply** during **last 7 days***)			
		Pressure relieving device(s) for chair			a.
		Pressure relieving device(s) for bed			b.
		Turning/repositioning program			c.
		Nutrition or hydration intervention to manage skin problems			d.
		Ulcer care			e.
		Surgical wound care			f.
		Application of dressings (with or without topical medications) other than to feet			g.
		Application of ointments/medications (other than to feet)			h.
		Other preventative or protective skin care (other than to feet)			i.
		NONE OF ABOVE			j.
6.	FOOT PROBLEMS AND CARE	(***Check all that apply** during **last 7 days***)			
		Resident has one or more foot problems—e.g., corns, callouses, bunions, hammer toes, overlapping toes, pain, structural problems			a.
		Infection of the foot—e.g., cellulitis, purulent drainage			b.
		Open lesions on the foot			c.
		Nails/calluses trimmed during **last 90 days**			d.
		Received preventative or protective foot care (e.g., used special shoes, inserts, pads, toe separators)			e.
		Application of dressings (with or without topical medications)			f.
		NONE OF ABOVE			g.

SECTION N. ACTIVITY PURSUIT PATTERNS

1.	TIME AWAKE	(***Check appropriate time periods over last 7 days***) Resident awake all or most of time (i.e., naps no more than one hour per time period) in the:			
		Morning	a.	Evening	c.
		Afternoon	b.	*NONE OF ABOVE*	d.
(If resident is comatose, skip to Section O)					
2.	AVERAGE TIME INVOLVED IN ACTIVITIES	(**When awake and not receiving treatments or ADL care**) 0. Most—more than 2/3 of time 2. Little—less than 1/3 of time 1. Some—from 1/3 to 2/3 of time 3. None			
3.	PREFERRED ACTIVITY SETTINGS	(***Check all settings** in which activities are **preferred***)			
		Own room	a.	Outside facility	d.
		Day/activity room	b.		
		Inside NH/off unit	c.	*NONE OF ABOVE*	e.
4.	GENERAL ACTIVITY PREFERENCES (adapted to resident's current abilities)	(***Check all PREFERENCES** whether or not activity is currently available to resident*)			
		Cards/other games	a.	Trips/shopping	g.
		Crafts/arts	b.	Walking/wheeling outdoors	h.
		Exercise/sports	c.	Watching TV	i.
		Music	d.	Gardening or plants	j.
		Reading/writing	e.	Talking or conversing	k.
		Spiritual/religious activities	f.	Helping others	l.
				NONE OF ABOVE	m.

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5.	PREFERS CHANGE IN DAILY ROUTINE	*Code for resident preferances in daily routines* 0. No change 1. Slight change 2. Major change a. Type of activities in which resident is currently involved b. Extent of resident involvement in activities

SECTION O. MEDICATIONS

1.	NUMBER OF MEDICATIONS	(*Record the number of different medications used in the last 7 days; enter "0" if none used*)
2.	NEW MEDICATIONS	(*Resident currently receiving medications that were initiated during the last 90 days*) 0. No 1. Yes
3.	INJECTIONS	(*Record the number of DAYS injections of any type received during the last 7 days; enter "0" if none used*)
4.	DAYS RECEIVED THE FOLLOWING MEDICATION	(*Record the number of DAYS during last 7 days; enter "0" if not used. Note—enter "1" for long-acting meds used less than weekly*) a. Antipsychotic b. Antianxiety c. Antidepressant d. Hypnotic e. Diuretic

SECTION P. SPECIAL TREATMENTS AND PROCEDURES

1.	SPECIAL TREATMENTS, PROCEDURES, AND PROGRAMS	a. **SPECIAL CARE**—*Check treatments or programs received during the last 14 days* **TREATMENTS** Chemotherapy (a.) Dialysis (b.) IV medication (c.) Intake/output (d.) Monitoring acute medical condition (e.) Ostomy care (f.) Oxygen therapy (g.) Radiation (h.) Suctioning (i.) Tracheostomy care (j.) Transfusions (k.) Ventilator or respirator (l.) **PROGRAMS** Alcohol/drug treatment program (m.) Alzheimer's/dementia special care unit (n.) Hospice care (o.) Pediatric unit (p.) Respite care (q.) Training in skills required to return to the community (e.g., taking medications, house work, shopping, transportation, ADLs) (r.) *NONE OF ABOVE* (s.) b. **THERAPIES** - *Record the number of days and total minutes each of the following therapies was administered (for at least 15 minutes a day) in the last 7 calendar days (Enter 0 if none or less than 15 min. daily)* **[Note—count only post admission therapies]** **(A) = # of days** administered for **15 minutes or more** **(B) = total # of minutes** provided in **last 7 days** DAYS (A) MIN (B) a. Speech - language pathology and audiology services b. Occupational therapy c. Physical therapy d. Respiratory therapy e. Psychological therapy (by any licensed mental health professional)
2.	INTERVENTION PROGRAMS FOR MOOD, BEHAVIOR, COGNITIVE LOSS	(**Check all interventions or strategies used in last 7 days**—no matter where received) Special behavior symptom evaluation program (a.) Evaluation by a licensed mental health specialist in **last 90 days** (b.) Group therapy (c.) Resident-specific deliberate changes in the environment to address mood/behavior patterns—e.g., providing bureau in which to rummage (d.) Reorientation—e.g., cueing (e.) *NONE OF ABOVE* (f.)
3.	NURSING REHABILITATION/ RESTORATIVE CARE	*Record the NUMBER OF DAYS each of the following rehabilitation or restorative techniques or practices was **provided to the resident for more than or equal to 15 minutes per day in the last 7 days** (Enter 0 if none or less than 15 min. daily.)* a. Range of motion (passive) b. Range of motion (active) c. Splint or brace assistance **TRAINING AND SKILL PRACTICE IN:** d. Bed mobility e. Transfer f. Walking g. Dressing or grooming h. Eating or swallowing i. Amputation/prosthesis care j. Communication k. Other

4.	DEVICES AND RESTRAINTS	(*Use the following codes for **last 7 days**:*) 0. Not used 1. Used less than daily 2. Used daily Bed rails a. — Full bed rails on all open sides of bed b. — Other types of side rails used (e.g., half rail, one side) c. Trunk restraint d. Limb restraint e. Chair prevents rising
5.	HOSPITAL STAY(S)	Record number of times resident was admitted to hospital with an overnight stay **in last 90 days** (or since last assessment if less than 90 days). (*Enter 0 if no hospital admissions*)
6.	EMERGENCY ROOM (ER) VISIT(S)	Record number of times resident visited ER without an overnight stay **in last 90 days** (or since last assessment if less than 90 days). (*Enter 0 if no ER visits*)
7.	PHYSICIAN VISITS	In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) examined the resident? (*Enter 0 if none*)
8.	PHYSICIAN ORDERS	In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) changed the resident's orders? *Do not include order renewals without change.* (*Enter 0 if none*)
9.	ABNORMAL LAB VALUES	Has the resident had any abnormal lab values during the **last 90 days** (or since admission)? 0. No 1. Yes

SECTION Q. DISCHARGE POTENTIAL AND OVERALL STATUS

1.	DISCHARGE POTENTIAL	a. Resident expresses/indicates preference to return to the community 0. No 1. Yes b. Resident has a support person who is positive towards discharge 0. No 1. Yes c. Stay projected to be of a short duration— discharge projected **within 90 days** (do not include expected discharge due to death) 0. No 2. Within 31-90 days 1. Within 30 days 3. Discharge status uncertain
2.	OVERALL CHANGE IN CARE NEEDS	Resident's overall self sufficiency has changed significantly as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved—receives fewer supports, needs less restrictive level of care 2. Deteriorated—receives more support

SECTION R. ASSESSMENT INFORMATION

1.	PARTICIPATION IN ASSESSMENT	a. Resident: 0. No 1. Yes b. Family: 0. No 1. Yes 2. No family c. Significant other: 0. No 1. Yes 2. None

2. SIGNATURE OF PERSON COORDINATING THE ASSESSMENT:

a. Signature of RN Assessment Coordinator (sign on above line)

b. Date RN Assessment Coordinator signed as complete — Month — Day — Year

Resident _____ Numeric Identifier _____

SECTION T. THERAPY SUPPLEMENT FOR MEDICARE PPS

1. SPECIAL TREATMENTS AND PROCEDURES

a. **RECREATION THERAPY**—*Enter number of days and total minutes of recreation therapy administered (**for at least 15 minutes a day**) in the **last 7 days** (Enter 0 if none)*

	DAYS	MIN
	(A)	(B)
(A) = # of days administered for 15 minutes or more		
(B) = total # of minutes provided in last 7 days		

Skip unless this is a Medicare 5 day or Medicare readmission/return assessment.

b. **ORDERED THERAPIES**—*Has physician ordered any of following therapies to begin in FIRST 14 days of stay—physical therapy, occupational therapy, or speech pathology service?*
0. No 1. Yes

If not ordered, skip to item 2

c. Through day 15, provide an estimate of the number of days when at least 1 therapy service can be expected to have been delivered.

d. Through day 15, provide an estimate of the number of therapy minutes (across the therapies) that can be expected to be delivered?

2. WALKING WHEN MOST SELF SUFFICIENT

Complete item 2 if ADL self-performance score for TRANSFER (G.1.b.A) is 0,1,2, or 3 AND at least one of the following are present:

- Resident received physical therapy involving gait training (P1.b.c)
- Physical therapy was ordered for the resident involving gait training (T.1.b)
- Resident received nursing rehabilitation for walking (P3.f)
- Physical therapy involving walking has been discontinued within the past 180 days

Skip to item 3 if resident did not walk in last 7 days

(FOR FOLLOWING FIVE ITEMS, BASE CODING ON THE EPISODE WHEN THE RESIDENT WALKED THE FARTHEST WITHOUT SITTING DOWN. INCLUDE WALKING DURING REHABILITATION SESSIONS.)

a. **Furthest distance walked** without sitting down during this episode.

0. 150+ feet
1. 51-149 feet
2. 26-50 feet
3. 10-25 feet
4. Less than 10 feet

b. **Time walked** without sitting down during this episode.

0. 1-2 minutes
1. 3-4 minutes
2. 5-10 minutes
3. 11-15 minutes
4. 16-30 minutes
5. 31+ minutes

c. **Self-Performance in walking** during this episode.

0. *INDEPENDENT*—No help or oversight
1. *SUPERVISION*—Oversight, encouragement or cueing provided
2. *LIMITED ASSISTANCE*—Resident highly involved in walking; received physical help in guided maneuvering of limbs or other nonweight bearing assistance
3. *EXTENSIVE ASSISTANCE*—Resident received weight bearing assistance while walking

d. **Walking support provided** associated with this episode (code regardless of resident's self-performance classification).

0. No setup or physical help from staff
1. Setup help only
2. One person physical assist
3. Two+ persons physical assist

e. **Parallel bars** used by resident in association with this episode.

0. No 1. Yes

3. CASE MIX GROUP

Medicare _____ State _____

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Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) - *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

MDS QUARTERLY ASSESSMENT FORM

Numeric Identifier _____

A1. RESIDENT NAME — a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)

A2. ROOM NUMBER

A3. ASSESSMENT REFERENCE DATE
a. Last day of MDS observation period — Month / Day / Year
b. Original (0) or corrected copy of form (enter number of correction)

A4a DATE OF REENTRY
Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) — Month / Day / Year

A6. MEDICAL RECORD NO.

B1. COMATOSE
(*Persistent vegetative state/no discernible consciousness*)
0. No 1. Yes (***Skip to Section G***)

B2. MEMORY
(*Recall of what was learned or known*)
a. Short-term memory OK—seems/appears to recall after 5 minutes
0. Memory OK 1. Memory problem
b. Long-term memory OK—seems/appears to recall long past
0. Memory OK 1. Memory problem

B4. COGNITIVE SKILLS FOR DAILY DECISION-MAKING
(*Made decisions regarding tasks of daily life*)
0. *INDEPENDENT*—decisions consistent/reasonable
1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only
2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required
3. *SEVERELY IMPAIRED*—never/rarely made decisions

B5. INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/AWARENESS
(*Code for behavior in the last 7 days.*) [***Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time***].
0. Behavior not present
1. Behavior present, not of recent onset
2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening)

a. EASILY DISTRACTED—(e.g., difficulty paying attention; gets sidetracked)
b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day)
c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought)
d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out)
e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space; difficult to arouse; little body movement)
f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)

C4. MAKING SELF UNDERSTOOD
(*Expressing information content—however able*)
0. *UNDERSTOOD*
1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts
2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests
3. *RARELY/NEVER UNDERSTOOD*

C6. ABILITY TO UNDERSTAND OTHERS
(*Understanding verbal information content—however able*)
0. *UNDERSTANDS*
1. *USUALLY UNDERSTANDS*—may miss some part/intent of message
2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication
3. *RARELY/NEVER UNDERSTANDS*

E1. INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD
(***Code for indicators observed in last 30 days, irrespective of the assumed cause***)
0. Indicator not exhibited in last 30 days
1. Indicator of this type exhibited up to five days a week
2. Indicator of this type exhibited daily or almost daily (6, 7 days a week)

VERBAL EXPRESSIONS OF DISTRESS
a. Resident made negative statements—e.g., "*Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die*"
b. Repetitive questions—e.g., "*Where do I go; What do I do?*"
c. Repetitive verbalizations—e.g., calling out for help, ("*God help me*")
d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received
e. Self deprecation—e.g., "*I am nothing; I am of no use to anyone*"

E1. INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD (cont.)
VERBAL EXPRESSIONS OF DISTRESS
f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others
g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack
h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions
i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/reassurance regarding schedules, meals, laundry, clothing, relationship issues

SLEEP-CYCLE ISSUES
j. Unpleasant mood in morning
k. Insomnia/change in usual sleep pattern

SAD, APATHETIC, ANXIOUS APPEARANCE
l. Sad, pained, worried facial expressions—e.g., furrowed brows
m. Crying, tearfulness
n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking

LOSS OF INTEREST
o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends
p. Reduced social interaction

E2. MOOD PERSISTENCE
One or more indicators of depressed, sad or anxious mood **were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days**
0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered

E4. BEHAVIORAL SYMPTOMS
(A) ***Behavioral*** *symptom* ***frequency in last 7 days***
0. Behavior not exhibited in last 7 days
1. Behavior of this type occurred 1 to 3 days in last 7 days
2. Behavior of this type occurred 4 to 6 days, but less than daily
3. Behavior of this type occurred daily

(B) ***Behavioral*** *symptom* ***alterability in last 7 days***
0. Behavior not present OR behavior was easily altered
1. Behavior was not easily altered

	(A)	(B)
a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety)		
b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at)		
c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused)		
d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings)		
e. RESISTS CARE (resisted taking medications/injections, ADL assistance, or eating)		

G1. (A) ADL SELF-PERFORMANCE—(***Code for resident's PERFORMANCE OVER ALL SHIFTS during last 7 days***—*Not including setup*)
0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days
1. *SUPERVISION*—Oversight, encouragement or cueing provided 3 or more times during last 7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days
2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days
3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times:
—Weight-bearing support
— Full staff performance during part (but not all) of last 7 days
4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days
8. *ACTIVITY DID NOT OCCUR* during entire 7 days

		(A)
a.	**BED MOBILITY** How resident moves to and from lying position, turns side to side, and positions body while in bed	
b.	**TRANSFER** How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)	
c.	**WALK IN ROOM** How resident walks between locations in his/her room.	
d.	**WALK IN CORRIDOR** How resident walks in corridor on unit.	
e.	**LOCOMOTION ON UNIT** How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair	
f.	**LOCOMOTION OFF UNIT** How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair	
g.	**DRESSING** How resident puts on, fastens, and takes off all items of **street clothing**, including donning/removing prosthesis	
h.	**EATING** How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition).	

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RESIDENT ASSESSMENT PROTOCOL TRIGGER LEGEND FOR REVISED RAPS (FOR MDS VERSION 2.0)

Key:
- ● = One item required to trigger
- ❷ = Two items required to trigger
- ✱ = One of these three items, plus at least one other item required to trigger
- ⓐ = When both ADL triggers present, maintenance takes precedence

Proceed to RAP Review once triggered

MDS ITEM		CODE	Delirium	Cognitive Loss/Dementia	Visual Function	Communication	ADL-Rehabilitation Trigger A ⓐ	ADL-Maintenance Trigger B ⓐ	Urinary Incontinence and Indwelling Catheter	Psychosocial Well-Being	Mood State	Behavioral Symptoms	Activities Trigger A	Activities Trigger B	Falls	Nutritional Status	Feeding Tubes	Dehydration/Fluid Maintenance	Dental Care	Pressure Ulcers	Psychotropic Drug Use	Physical Restraints	
B2a	Short term memory	1		●																			B2a
B2b	Long term memory	2		●																			B2b
B4	Decision making	1,2,3		●																			B4
B4	Decision making	4					●																B4
B5a to B5f	Indicators of delirium	2	●																	●			B5a to B5f
B6	Change in cognitive status	4	●																	●			B6
C1	Hearing	1,2,3			●																		C1
C4	Understood by others	1,2,3			●																		C4
C6	Understand others	1,2,3		●		●																	C6
C7	Changes in communication	4																		●			C7
G1	Vision	1,2,3			●																		G1
G2a	Side vision problem	✓			●																		G2a
E1a to E1p	Indicators of depression, anxiety, sad mood	1,2								●													E1a to E1p
E1n	Hopelessness	1,2																		●			E1n
E1o	Withdrawal from activities	1,2							●														E1o
E2	Mood expressions	1,2								●													E2
E3	Change in Mood	2	●																	●			E3
E4a-E4e	Wandering	1,2,3												●									E4a-E4e
E4a-E4e	Behavioral symptoms	1,2,3									●												E4a-E4e
E5	Change in behavioral symptoms	4									●												E5
E5	Change in behavioral symptoms	2	●																	●			E5
F1a	Establishes new goals	✓							●														F1a
F2a to F2d	Unsettled relationships	✓							●														F2a to F2d
F5a	Strong or past roles	✓							●														F5a
F5b	Lost roles	✓							●														F5b
F5c	Daily routine different	✓							●														F5c
G1aA - G1jA	ADL self performance	1,2,3,4				●																	G1aA - G1jA
G1aA	Bed mobility	2,3,4,5																	●				G1aA
G2A	Bathing	1,2,3,4				●																	G2A
G2B	Sides to move sitting	1,2,5																		●			G2B
G6a	Bedfast	✓																	●				G6a
G8a-h	Resident - staff balance (activity)	✓				●																	G8a-h
H1a	Bowel incontinence	1,2,3,4																	●				H1a
H1b	Bladder incontinence	2,3,4						●															H1b
H2b	Constipation	✓																		●			H2b
H2d	Fecal impaction	✓																		●			H2d
H3c-H3e	Catheter use	✓						●															H3c-H3e
H3g	Use of pads/briefs	✓						●															H3g
I1i	Hypertension	✓																		●			I1i
I1l	Peripheral vascular disease	✓																	●				I1l
I1ee	Depression	✓																		●			I1ee
I1q	Cataracts	✓			●																		I1q
I1ll	Glaucoma	✓			●																		I1ll
I2j	UTI															●							I2j
I3	Dehydration diagnosis	276.5														●							I3
J1a	Resists intervention	✓														●							J1a
J1c	Dehydrated	✓														●							J1c
J1d	Resists care, fluid	✓														●							J1d
J1f	Dizziness	✓													●					●			J1f
J1h	Rales	✓														●							J1h
J1i	Hallucinations	✓																		●			J1i
J1j	Internal bleeding	✓														●							J1j
J1k	Lung aspirations	✓																		●			J1k
J1p	Syncope	✓																		●			J1p

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RESIDENT ASSESSMENT PROTOCOL TRIGGER LEGEND FOR REVISED RAPS (FOR MDS VERSION 2.0)

Key:
- ● = One item required to trigger
- ❷ = Two items required to trigger
- ✱ = One of these three items, plus at least one other item required to trigger
- ⓐ = When both ADL triggers present, maintenance takes precedence

Proceed to RAP Review once triggered

MDS ITEM		CODE	Delirium	Cognitive Loss/Dementia	Visual Function	Communication	ADL-Rehabilitation Trigger A ⓐ	ADL-Maintenance Trigger B ⓐ	Urinary Incontinence and Indwelling Catheter	Psychosocial Well-Being	Mood State	Behavioral Symptoms	Activities Trigger A	Activities Trigger B	Falls	Nutritional Status	Feeding Tubes	Dehydration/Fluid Maintenance	Dental Care	Pressure Ulcers	Psychotropic Drug Use	Physical Restraints	
J4e	Hip fracture	1																		●			J4e
J4a,b	Fall	1													●					●			J4a,b
J4e	Hip fracture	1																		●			J4e
K1b	Swallowing problem	1																		●			K1b
K1c	Mouth pain	1																●					K1c
K3a	Weight loss	1													●								K3a
K4d	Tube dislocation	1													●								K4d
K4c	Leave 25% food	1													●								K4c
K5a	Dysphagia/feeding	1													●		●						K5a
K5b	Feeding tube	1														●	●						K5b
K5c	Mechanically altered	1													●								K5c
K5d	Syringe feeding	1													●								K5d
K5e	Therapeutic diet	1													●								K5e
J1a,c,d,e	Dental	1																●					J1a,c,d,e
O1f	Daily cleaning (teeth)	00-1																●					O1f
M2a	Pressure ulcer	2,3,4													●								M2a
M2a	Pressure ulcer	1,2,3,4																	●				M2a
M3	Previous pressure ulcer	1																	●				M3
M4e	Impaired tactile sense	1																	●				M4e
N1a	Awaken morning	2											❷										N1a
N2	Awakened overnight	0											❷										N2
N2	Involved in activities	2,3										●											N2
N5a,b	Prefers change in daily routine	1-7										●											N5a,b
O1a	Antipsychotics	1-7																		✱			O1a
O1b	Antianxiety	1-7												●						✱			O1b
O1c	Antidepressants	1-7												●						✱			O1c
O1d	Diuretic	1-7															●						O1d
P1c	Limb restraint	1,2												●							●	●	P1c
P1c	Torso restraint	1,2																	●			●	P1c
P1d	Limb restraint	1,2																			●	●	P1d
P1e	Chair prevents rising	1,2																			●	●	P1e

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MDS QUARTERLY ASSESSMENT FORM

Numeric Identifier _____

A1. RESIDENT NAME — a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)

A2. ROOM NUMBER

A3. ASSESSMENT REFERENCE DATE
a. Last day of MDS observation period — Month — Day — Year
b. Original (0) or corrected copy of form (enter number of correction)

A4a DATE OF REENTRY
Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) — Month — Day — Year

A6. MEDICAL RECORD NO.

B1. COMATOSE
(*Persistent vegetative state/no discernible consciousness*)
0. No 1. Yes (***Skip to Section G***)

B2. MEMORY
(*Recall of what was learned or known*)
a. Short-term memory OK—seems/appears to recall after 5 minutes
0. Memory OK 1. Memory problem
b. Long-term memory OK—seems/appears to recall long past
0. Memory OK 1. Memory problem

B4. COGNITIVE SKILLS FOR DAILY DECISION-MAKING
(*Made decisions regarding tasks of daily life*)
0. *INDEPENDENT*—decisions consistent/reasonable
1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only
2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required
3. *SEVERELY IMPAIRED*—never/rarely made decisions

B5. INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/AWARENESS
(*Code for behavior in the last 7 days.*) [***Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time***].
0. Behavior not present
1. Behavior present, not of recent onset
2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening)

a. EASILY DISTRACTED—(e.g., difficulty paying attention; gets sidetracked)
b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day)
c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought)
d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out)
e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space; difficult to arouse; little body movement)
f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)

C4. MAKING SELF UNDERSTOOD
(*Expressing information content—however able*)
0. *UNDERSTOOD*
1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts
2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests
3. *RARELY/NEVER UNDERSTOOD*

C6. ABILITY TO UNDERSTAND OTHERS
(*Understanding verbal information content—however able*)
0. *UNDERSTANDS*
1. *USUALLY UNDERSTANDS*—may miss some part/intent of message
2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication
3. *RARELY/NEVER UNDERSTANDS*

E1. INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD
(***Code for indicators observed in last 30 days, irrespective of the assumed cause***)
0. Indicator not exhibited in last 30 days
1. Indicator of this type exhibited up to five days a week
2. Indicator of this type exhibited daily or almost daily (6, 7 days a week)

VERBAL EXPRESSIONS OF DISTRESS
a. Resident made negative statements—e.g., "*Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die*"
b. Repetitive questions—e.g., "*Where do I go; What do I do?*"
c. Repetitive verbalizations—e.g., calling out for help, ("*God help me*")
d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received
e. Self deprecation—e.g., "*I am nothing; I am of no use to anyone*"

E1. INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD (cont.)
VERBAL EXPRESSIONS OF DISTRESS
f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others
g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack
h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions
i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/reassurance regarding schedules, meals, laundry, clothing, relationship issues

SLEEP-CYCLE ISSUES
j. Unpleasant mood in morning
k. Insomnia/change in usual sleep pattern

SAD, APATHETIC, ANXIOUS APPEARANCE
l. Sad, pained, worried facial expressions—e.g., furrowed brows
m. Crying, tearfulness
n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking

LOSS OF INTEREST
o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends
p. Reduced social interaction

E2. MOOD PERSISTENCE
One or more indicators of depressed, sad or anxious mood **were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days**
0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered

E4. BEHAVIORAL SYMPTOMS
(A) ***Behavioral*** *symptom* ***frequency in last 7 days***
0. Behavior not exhibited in last 7 days
1. Behavior of this type occurred 1 to 3 days in last 7 days
2. Behavior of this type occurred 4 to 6 days, but less than daily
3. Behavior of this type occurred daily

(B) ***Behavioral*** *symptom* ***alterability in last 7 days***
0. Behavior not present OR behavior was easily altered
1. Behavior was not easily altered

	(A)	(B)
a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety)		
b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at)		
c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused)		
d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings)		
e. RESISTS CARE (resisted taking medications/injections, ADL assistance, or eating)		

G1. (A) ADL SELF-PERFORMANCE—(***Code for resident's PERFORMANCE OVER ALL SHIFTS during last 7 days***—*Not including setup*)
0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days
1. *SUPERVISION*—Oversight, encouragement or cueing provided 3 or more times during last 7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days
2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days
3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times:
—Weight-bearing support
— Full staff performance during part (but not all) of last 7 days
4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days
8. *ACTIVITY DID NOT OCCUR* during entire 7 days

		(A)
a.	**BED MOBILITY** How resident moves to and from lying position, turns side to side, and positions body while in bed	
b.	**TRANSFER** How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)	
c.	**WALK IN ROOM** How resident walks between locations in his/her room.	
d.	**WALK IN CORRIDOR** How resident walks in corridor on unit.	
e.	**LOCOMOTION ON UNIT** How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair	
f.	**LOCOMOTION OFF UNIT** How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair	
g.	**DRESSING** How resident puts on, fastens, and takes off all items of **street clothing**, including donning/removing prosthesis	
h.	**EATING** How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition).	

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i.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes	
j.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)	
G2.	BATHING	How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) ***Code for most dependent** in self-performance.* **(A)** BATHING SELF PERFORMANCE codes appear below 0. Independent—No help provided 1. Supervision—Oversight help only 2. Physical help limited to transfer only 3. Physical help in part of bathing activity 4. Total dependence 8. Activity itself did not occur during entire 7 days	(A)

G4.	FUNCTIONAL LIMITATION IN RANGE OF MOTION	*(Code for limitations during **last 7 days** that interfered with daily functions or placed residents at risk of injury)* **(A)** *RANGE OF MOTION*: 0. No limitation; 1. Limitation on one side; 2. Limitation on both sides. **(B)** *VOLUNTARY MOVEMENT*: 0. No loss; 1. Partial loss; 2. Full loss	(A)	(B)
		a. Neck		
		b. Arm—Including shoulder or elbow		
		c. Hand—Including wrist or fingers		
		d. Leg—Including hip or knee		
		e. Foot—Including ankle or toes		
		f. Other limitation or loss		

G5.	MODES OF TRANSFER	(***Check all that apply** during **last 7 days**)*			
		Bedfast all or most of time	a.	*NONE OF ABOVE*	f.
		Bed rails used for bed mobility or transfer	b.		

H1. CONTINENCE SELF-CONTROL CATEGORIES
(***Code for resident's PERFORMANCE OVER ALL SHIFTS***)

0. *CONTINENT*—Complete control *[includes use of indwelling urinary catheter or ostomy device that does not leak urine or stool]*
1. *USUALLY CONTINENT*—BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly
2. *OCCASIONALLY INCONTINENT*—BLADDER, 2 or more times a week but not daily; BOWEL, once a week
3. *FREQUENTLY INCONTINENT*—BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week
4. *INCONTINENT*—Had inadequate control BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time

a.	BOWEL CONTINENCE	Control of bowel movement, with appliance or bowel continence programs, if employed			
b.	BLADDER CONTINENCE	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed			
H2.	BOWEL ELIMINATION PATTERN	Fecal impaction	d.	*NONE OF ABOVE*	e.
H3.	APPLIANCES AND PROGRAMS	Any scheduled toileting plan	a.	Indwelling catheter	d.
		Bladder retraining program	b.	Ostomy present	i.
		External (condom) catheter	c.	*NONE OF ABOVE*	j.
I2.	INFECTIONS	Urinary tract infection **in last 30 days**	k.	*NONE OF ABOVE*	m.

I3. OTHER CURRENT DIAGNOSES AND ICD-9 CODES (*Include **only those diseases diagnosed in the last 90 days that have a relationship** to current ADL status, cognitive status, mood or behavior status, medical treatments, nursing monitoring, or risk of death*)

a. _____ | | | | . | | |

b. _____ | | | | . | | |

J1.	PROBLEM CONDITIONS	(***Check all problems present** in **last 7 days**.*)			
		Dehydrated; output exceeds input	c.	Hallucinations	i.
				NONE OF ABOVE	p.

J2.	PAIN SYMPTOMS	(*Code the **highest level of pain** present in the **last 7 days***)	
		a. FREQUENCY with which resident complains or shows evidence of pain 0. No pain (***skip to J4***) 1. Pain less than daily 2. Pain daily	**b. INTENSITY** of pain 1. Mild pain 2. Moderate pain 3. Times when pain is horrible or excruciating

J4.	ACCIDENTS	(***Check all that apply**)*			
		Fell in past 30 days	a.	Hip fracture in **last 180 days**	c.
				Other fracture in **last 180 days**	d.
		Fell in past 31-180 days	b.	*NONE OF ABOVE*	e.

J5.	STABILITY OF CONDITIONS	Conditions/diseases make resident's cognitive, ADL, mood or behavior status unstable—(fluctuating, precarious, or deteriorating)	a.
		Resident experiencing an acute episode or a flare-up of a recurrent or chronic problem	b.
		End-stage disease, 6 or fewer months to live	c.
		NONE OF ABOVE	d.

K3.	WEIGHT CHANGE	**a. Weight loss**—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** 0. No 1. Yes	
		b. Weight gain—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** 0. No 1. Yes	

K5.	NUTRITIONAL APPROACHES	Feeding tube	b.
		On a planned weight change program	h.
		NONE OF ABOVE	i.

M1.	ULCERS (Due to any cause)	*(Record the number of ulcers at each ulcer stage—regardless of cause. If none present at a stage, record "0" (zero). Code all that apply during **last 7 days**. Code 9 = 9 or more.)* ***[Requires full body exam.]***	Number at Stage
		a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved.	
		b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater.	
		c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues - presents as a deep crater with or without undermining adjacent tissue.	
		d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.	

M2.	TYPE OF ULCER	*(For each type of ulcer, **code for the highest stage in the last 7 days** using scale in item M1—i.e., 0=none; stages 1, 2, 3, 4)*
		a. Pressure ulcer—any lesion caused by pressure resulting in damage of underlying tissue
		b. Stasis ulcer—open lesion caused by poor circulation in the lower extremities

N1.	TIME AWAKE	(***Check appropriate time periods over last 7 days***) Resident awake all or most of time (i.e., naps no more than one hour per time period) in the:			
		Morning	a.	Evening	c.
		Afternoon	b.	*NONE OF ABOVE*	d.

(If resident is comatose, skip to Section O)

N2.	AVERAGE TIME INVOLVED IN ACTIVITIES	(**When awake and not receiving treatments or ADL care**) 0. Most—more than 2/3 of time 2. Little—less than 1/3 of time 1. Some—from 1/3 to 2/3 of time 3. None
O1.	NUMBER OF MEDICATIONS	(***Record the number of different** medications used in the **last 7 days**; enter "0" if none used*)
O4.	DAYS RECEIVED THE FOLLOWING MEDICATION	(***Record the number of DAYS** during **last 7 days**; enter "0" if not used. Note—enter "1" for long-acting meds used less than weekly*) a. Antipsychotic d. Hypnotic b. Antianxiety e. Diuretic c. Antidepressant

P4.	DEVICES AND RESTRAINTS	*Use the following codes for **last 7 days**:* 0. Not used 1. Used less than daily 2. Used daily
		Bed rails a. — Full bed rails on all open sides of bed b. — Other types of side rails used (e.g., half rail, one side) c. Trunk restraint d. Limb restraint e. Chair prevents rising

Q2.	OVERALL CHANGE IN CARE NEEDS	Resident's overall level of self sufficiency has changed significantly as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change 1. Improved—receives fewer supports, needs less restrictive level of care 2. Deteriorated—receives more support

R2. SIGNATURE OF PERSON COORDINATING THE ASSESSMENT:

a. Signature of RN Assessment Coordinator (sign on above line)

b. Date RN Assessment Coordinator signed as complete ☐☐ — ☐☐ — ☐☐☐☐ (Month — Day — Year)

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Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) - *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

MDS QUARTERLY ASSESSMENT FORM
(OPTIONAL VERSION FOR RUG-III)

Numeric Identifier _____

A1.	RESIDENT NAME	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
A2.	ROOM NUMBER	
A3.	ASSESSMENT REFERENCE DATE	a. Last day of MDS observation period — Month — Day — Year b. Original (0) or corrected copy of form (enter number of correction)
A4.	DATE OF REENTRY	Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) — Month — Day — Year
A6.	MEDICAL RECORD NO.	
B1.	COMATOSE	(*Persistent vegetative state/no discernible consciousness*) 0. No 1. Yes (**Skip to Section G**)
B2.	MEMORY	(*Recall of what was learned or known*) a. Short-term memory OK—seems/appears to recall after 5 minutes 0. Memory OK 1. Memory problem b. Long-term memory OK—seems/appears to recall long past 0. Memory OK 1. Memory problem
B3.	MEMORY/ RECALL ABILITY	(**Check all** *that resident was* **normally able to recall during last 7 days**) Current season a. That he/she is in a nursing home d. Location of own room b. Staff names/faces c. *NONE OF ABOVE* are recalled e.
B4.	COGNITIVE SKILLS FOR DAILY DECISION-MAKING	(*Made decisions regarding tasks of daily life*) 0. *INDEPENDENT*—decisions consistent/reasonable 1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only 2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required 3. *SEVERELY IMPAIRED*—never/rarely made decisions
B5.	INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/ AWARENESS	(*Code for behavior in the* **last 7 days.**) **[Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time].** 0. Behavior not present 1. Behavior present, not of recent onset 2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening) a. EASILY DISTRACTED—(e.g., difficulty paying attention; gets sidetracked) b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day) c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought) d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out) e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space; difficult to arouse; little body movement) f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)
C4.	MAKING SELF UNDERSTOOD	(*Expressing information content—however able*) 0. *UNDERSTOOD* 1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts 2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests 3. *RARELY/NEVER UNDERSTOOD*
C6.	ABILITY TO UNDERSTAND OTHERS	(*Understanding verbal information content—however able*) 0. *UNDERSTANDS* 1. *USUALLY UNDERSTANDS*—may miss some part/intent of message 2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication 3. *RARELY/NEVER UNDERSTANDS*
E1.	INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD	(**Code for indicators observed in last 30 days, irrespective of the assumed cause**) 0. Indicator not exhibited in last 30 days 1. Indicator of this type exhibited up to five days a week 2. Indicator of this type exhibited daily or almost daily (6, 7 days a week)

E1.	INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD	**VERBAL EXPRESSIONS OF DISTRESS** a. Resident made negative statements—e.g., "*Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die*" b. Repetitive questions—e.g., "*Where do I go; What do I do?*" c. Repetitive verbalizations—e.g., calling out for help, ("*God help me*") d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received e. Self deprecation—e.g., "*I am nothing; I am of no use to anyone*" f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/ reassurance regarding schedules, meals, laundry, clothing, relationship issues **SLEEP-CYCLE ISSUES** j. Unpleasant mood in morning k. Insomnia/change in usual sleep pattern **SAD, APATHETIC, ANXIOUS APPEARANCE** l. Sad, pained, worried facial expressions—e.g., furrowed brows m. Crying, tearfulness n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking **LOSS OF INTEREST** o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends p. Reduced social interaction
E2.	MOOD PERSISTENCE	**One or more indicators** of depressed, sad or anxious mood **were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days** 0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered

E4.	BEHAVIORAL SYMPTOMS	(A) ***Behavioral*** *symptom* ***frequency in last 7 days*** 0. Behavior not exhibited in last 7 days 1. Behavior of this type occurred 1 to 3 days in last 7 days 2. Behavior of this type occurred 4 to 6 days, but less than daily 3. Behavior of this type occurred daily (B) ***Behavioral*** *symptom* ***alterability in last 7 days*** 0. Behavior not present OR behavior was easily altered 1. Behavior was not easily altered	(A)	(B)
		a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety)		
		b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at)		
		c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused)		
		d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings)		
		e. RESISTS CARE (resisted taking medications/injections, ADL assistance, or eating)		

G1.		(A) ADL SELF-PERFORMANCE—(***Code for resident's PERFORMANCE OVER ALL SHIFTS during last 7 days***—*Not including setup*) 0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days 1. SUPERVISION—Oversight, encouragement or cueing provided 3 or more times during last7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days 2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days 3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times: —Weight-bearing support — Full staff performance during part (but not all) of last 7 days 4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days 8. *ACTIVITY DID NOT OCCUR* during entire 7 days		
		(B) ADL SUPPORT PROVIDED—(***Code for MOST SUPPORT PROVIDED OVER ALL SHIFTS during last 7 days; code regardless*** *of resident's self-performance classification*) 0. No setup or physical help from staff 1. Setup help only 2. One person physical assist 3. Two+ persons physical assist 8. ADL activity itself did not occur during entire 7 days	(A) SELF-PERF	(B) SUPPORT
a.	BED MOBILITY	How resident moves to and from lying position, turns side to side, and positions body while in bed		
b.	TRANSFER	How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)		

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G1.			(A)	(B)
c.	WALK IN ROOM	How resident walks between locations in his/her room		
d.	WALK IN CORRIDOR	How resident walks in corridor on unit		
e.	LOCOMOTION ON UNIT	How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair		
f.	LOCOMOTION OFF UNIT	How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair		
g.	DRESSING	How resident puts on, fastens, and takes off all items of **street clothing**, including donning/removing prosthesis		
h.	EATING	How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition)		
i.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes		
j.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)		

G2. BATHING — How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) ***Code for most dependent** in self-performance.*

(A) BATHING SELF PERFORMANCE codes appear below — (A)

0. Independent—No help provided
1. Supervision—Oversight help only
2. Physical help limited to transfer only
3. Physical help in part of bathing activity
4. Total dependence
8. Activity itself did not occur during entire 7 days

G3. TEST FOR BALANCE (see training manual) — (*Code for ability during test in the **last 7 days***)

0. Maintained position as required in test
1. Unsteady, but able to rebalance self without physical support
2. Partial physical support during test; or stands (sits) but does not follow directions for test
3. Not able to attempt test without physical help

a.	Balance while standing	
b.	Balance while sitting—position, trunk control	

G4. FUNCTIONAL LIMITATION IN RANGE OF MOTION — (*Code for limitations during **last 7 days** that interfered with daily functions or placed residents at risk of injury*)

(A) *RANGE OF MOTION*: 0. No limitation; 1. Limitation on one side; 2. Limitation on both sides

(B) *VOLUNTARY MOVEMENT*: 0. No loss; 1. Partial loss; 2. Full loss

		(A)	(B)
a.	Neck		
b.	Arm—including shoulder or elbow		
c.	Hand—including wrist or fingers		
d.	Leg—including hip or knee		
e.	Foot—including ankle or toes		
f.	Other limitation or loss		

G6. MODES OF TRANSFER — (***Check all that apply** during **last 7 days***)

Bedfast all or most of time [a.] — NONE OF ABOVE [f.]

Bed rails used for bed mobility or transfer [b.]

G7. TASK SEGMENTATION — Some or all of ADL activities were broken into subtasks during last 7 days so that resident could perform them. 0. No 1. Yes

H1. CONTINENCE SELF-CONTROL CATEGORIES (***Code for resident's PERFORMANCE OVER ALL SHIFTS***)

0. *CONTINENT*—Complete control *[includes use of indwelling urinary catheter or ostomy device that does not leak urine or stool]*
1. *USUALLY CONTINENT*—BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly
2. *OCCASIONALLY INCONTINENT*—BLADDER, 2 or more times a week but not daily; BOWEL, once a week
3. *FREQUENTLY INCONTINENT*—BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week
4. *INCONTINENT*—Had inadequate control BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time

a.	BOWEL CONTINENCE	Control of bowel movement, with appliance or bowel continence programs, if employed	
b.	BLADDER CONTINENCE	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed	

H2. BOWEL ELIMINATION PATTERN — Diarrhea [c.]; Fecal impaction [d.]; NONE OF ABOVE [e.]

H3. APPLIANCES AND PROGRAMS

Any scheduled toileting plan	a.	Indwelling catheter	d.
Bladder retraining program	b.	Ostomy present	i.
External (condom) catheter	c.	*NONE OF ABOVE*	j.

Check only those diseases that have a relationship to current ADL status, cognitive status, mood and behavior status, medical treatments, nursing monitoring, or risk of death. (Do not list inactive diagnoses)

I1. DISEASES — (***If none apply, CHECK the NONE OF ABOVE box***)

MUSCULOSKELETAL		Multiple sclerosis	w.
Hip fracture	m.	Quadriplegia	z.
NEUROLOGICAL		**PSYCHIATRIC/MOOD**	
Aphasia	r.	Depression	ee.
Cerebral palsy	s.	Manic depressive (bipolar disease)	ff.
Cerebrovascular accident (stroke)	t.	**OTHER**	
Hemiplegia/Hemiparesis	v.	*NONE OF ABOVE*	rr.

I2. INFECTIONS — (***If none apply, CHECK the NONE OF ABOVE box***)

Antibiotic resistant infection (e.g., Methicillin resistant staph)	a.	Septicemia	g.
		Sexually transmitted diseases	h.
Clostridium difficile (c. diff.)	b.	Tuberculosis	i.
Conjunctivitis	c.	Urinary tract infection **in last 30 days**	j.
HIV infection	d.	Viral hepatitis	k.
Pneumonia	e.	Wound infection	l.
Respiratory infection	f.	NONE OF ABOVE	m.

I3. OTHER CURRENT DIAGNOSES AND ICD-9 CODES — (*Include **only those diseases diagnosed in the last 90 days that have a relationship** to current ADL status, cognitive status, mood or behavior status, medical treatments, nursing monitoring, or risk of death*)

a. _____ | | | | . | |

b. _____ | | | | . | |

J1. PROBLEM CONDITIONS — (***Check all problems present** in **last 7 days** unless other time frame is indicated*)

INDICATORS OF FLUID STATUS

Weight gain or loss of 3 or more pounds within a 7 day period [a.]

Inability to lie flat due to shortness of breath [b.]

Dehydrated; output exceeds input [c.]

Insufficient fluid; did **NOT** consume all/almost all liquids provided during **last 3 days** [d.]

OTHER

Delusions	e.	Hallucinations	i.
Edema	g.	Internal bleeding	j.
Fever	h.	Recurrent lung aspirations in **last 90 days**	k.
Shortness of breath	l.	Unsteady gait	n.
		Vomiting	o.
		NONE OF ABOVE	p.

J2. PAIN SYMPTOMS — (*Code the **highest level of pain** present in the **last 7 days***)

a. FREQUENCY with which resident complains or shows evidence of pain

0. No pain (***skip to J4***)
1. Pain less than daily
2. Pain daily

b. INTENSITY of pain

1. Mild pain
2. Moderate pain
3. Times when pain is horrible or excrutiating

J4. ACCIDENTS — (***Check all that apply***)

Fell in **past 30 days** [a.]

Fell in **past 31-180 days** [b.]

Hip fracture in **last 180 days** [c.]

Other fracture in **last 180 days** [d.]

NONE OF ABOVE [e.]

J5. STABILITY OF CONDITIONS

Condition/diseases make resident's cognitive, ADL, mood or behavior status unstable—(fluctuating, precarious, or deteriorating)	a.
Resident experiencing an acute episode or a flare-up of a recurrent or chronic problem	b.
End-stage disease, 6 or fewer months to live	c.
NONE OF ABOVE	d.

K1. ORAL PROBLEMS

Chewing problem	a.
Swallowing problem	b.
NONE OF ABOVE	d.

K2. HEIGHT AND WEIGHT — *Record (a.) **height in inches** and (b.) **weight in pounds**. Base weight on most recent measure in **last 30 days**; measure weight consistently in accord with standard facility practice—e.g., in a.m. after voiding, before meal, with shoes off, and in nightclothes*

a. HT (in.) ___ ___ b. WT (lb.) ___ ___ ___

K3. WEIGHT CHANGE

a. **Weight loss**—5 % or more in last **30 days**; or 10 % or more in last **180 days**
0. No 1. Yes

b. **Weight gain**—5 % or more in last **30 days**; or 10 % or more in last **180 days**
0. No 1. Yes

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K5. NUTRITIONAL APPROACHES — (*Check all that apply in last 7 days*)

- Parenteral/IV
- Feeding tube
- a. On a planned weight change program
- b. *NONE OF ABOVE*
- h.
- i.

M1. ULCERS (Due to any cause) — (*Record the number of ulcers at each ulcer stage—regardless of cause. If none present at a stage, record "0" (zero). Code all that apply during last 7 days. Code 9 = 9 or more.*) **[Requires full body exam.]** — Number at Stage

- a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved.
- b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater.
- c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues - presents as a deep crater with or without undermining adjacent tissue.
- d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.

M2. TYPE OF ULCER — (*For each type of ulcer, code for the highest stage in the last 7 days using scale in item M1—i.e., 0=none; stages 1, 2, 3, 4*)

- a. Pressure ulcer—any lesion caused by pressure resulting in damage of underlying tissue
- b. Stasis ulcer—open lesion caused by poor circulation in the lower extremities

M4. OTHER SKIN PROBLEMS OR LESIONS PRESENT — (*Check all that apply during last 7 days*)

- Abrasions, bruises — a.
- Burns (second or third degree) — b.
- Open lesions other than ulcers, rashes, cuts (e.g., cancer lesions) — c.
- Rashes—e.g., intertrigo, eczema, drug rash, heat rash, herpes zoster — d.
- Skin desensitized to pain or pressure — e.
- Skin tears or cuts (other than surgery) — f.
- Surgical wounds — g.
- *NONE OF ABOVE* — h.

M5. SKIN TREATMENTS — (*Check all that apply during last 7 days*)

- Pressure relieving device(s) for chair — a.
- Pressure relieving device(s) for bed — b.
- Turning/repositioning program — c.
- Nutrition or hydration intervention to manage skin problems — d.
- Ulcer care — e.
- Surgical wound care — f.
- Application of dressings (with or without topical medications) other than to feet — g.
- Application of ointments/medications (other than to feet) — h.
- Other preventative or protective skin care (other than to feet) — i.
- *NONE OF ABOVE* — j.

M6. FOOT PROBLEMS AND CARE — (*Check all that apply during last 7 days*)

- Resident has one or more foot problems—e.g., corns, callouses, bunions, hammer toes, overlapping toes, pain, structural problems — a.
- Infection of the foot—e.g., cellulitis, purulent drainage — b.
- Open lesions on the foot — c.
- Nails/calluses trimmed during last 90 days — d.
- Received preventative or protective foot care (e.g., used special shoes, inserts, pads, toe separators) — e.
- Application of dressings (with or without topical medications) — f.
- *NONE OF ABOVE* — g.

N1. TIME AWAKE — (*Check appropriate time periods over last 7 days*)

Resident awake all or most of time (i.e., naps no more than one hour per time period) in the:

- Morning — a.
- Afternoon — b.
- Evening — c.
- *NONE OF ABOVE* — d.

(If resident is comatose, skip to Section O)

N2. AVERAGE TIME INVOLVED IN ACTIVITIES — (When awake and not receiving treatments or ADL care)

0. Most—more than 2/3 of time
1. Some—from 1/3 to 2/3 of time
2. Little—less than 1/3 of time
3. None

O1. NUMBER OF MEDICATIONS — (*Record the number of different medications used in the last 7 days; enter "0" if none used*)

O3. INJECTIONS — (*Record the number of DAYS injections of any type received during the last 7 days; enter "0" if none used*)

O4. DAYS RECEIVED THE FOLLOWING MEDICATION — (*Record the number of DAYS during last 7 days; enter "0" if not used. Note—enter "1" for long-acting meds used less than weekly*)

- a. Antipsychotic
- b. Antianxiety
- c. Antidepressant
- d. Hypnotic
- e. Diuretic

P1. SPECIAL TREATMENTS, PROCEDURES, AND PROGRAMS

a. **SPECIAL CARE**—*Check treatments or programs received during the last 14 days*

TREATMENTS

- Chemotherapy — a.
- Dialysis — b.
- IV medication — c.
- Intake/output — d.
- Monitoring acute medical condition — e.
- Ostomy care — f.
- Oxygen therapy — g.
- Radiation — h.
- Suctioning — i.
- Tracheostomy care — j.
- Transfusions — k.
- Ventilator or respirator — l.

PROGRAMS

- Alcohol/drug treatment program — m.
- Alzheimer's/dementia special care unit — n.
- Hospice care — o.
- Pediatric unit — p.
- Respite care — q.
- Training in skills required to return to the community (e.g., taking medications, house work, shopping, transportation, ADLs) — r.
- *NONE OF ABOVE* — s.

b. **THERAPIES** - *Record the number of days and total minutes each of the following therapies was administered (for at least 15 minutes a day) in the last 7 calendar days (Enter 0 if none or less than 15 min. daily)*
[Note—count only post admission therapies]

(A) = # of days administered for **15 minutes or more**
(B) = total # of minutes provided in **last 7 days**

	DAYS (A)	MIN (B)
a. Speech - language pathology and audiology services		
b. Occupational therapy		
c. Physical therapy		
d. Respiratory therapy		
e. Psychological therapy (by any licensed mental health professional)		

P3. NURSING REHABILITATION/ RESTORATIVE CARE — *Record the NUMBER OF DAYS each of the following rehabilitation or restorative techniques or practices was provided to the resident for more than or equal to 15 minutes per day in the last 7 days (Enter 0 if none or less than 15 min. daily.)*

- a. Range of motion (passive)
- b. Range of motion (active)
- c. Splint or brace assistance

TRAINING AND SKILL PRACTICE IN:

- d. Bed mobility
- e. Transfer
- f. Walking
- g. Dressing or grooming
- h. Eating or swallowing
- i. Amputation/prosthesis care
- j. Communication
- k. Other

P4. DEVICES AND RESTRAINTS — *Use the following codes for last 7 days:*
0. Not used
1. Used less than daily
2. Used daily

Bed rails

- a. — Full bed rails on all open sides of bed
- b. — Other types of side rails used (e.g., half rail, one side)
- c. Trunk restraint
- d. Limb restraint
- e. Chair prevents rising

P7. PHYSICIAN VISITS — In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) examined the resident? (*Enter 0 if none*)

P8. PHYSICIAN ORDERS — In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) changed the resident's orders? *Do not include order renewals without change.* (*Enter 0 if none*)

Q2. OVERALL CHANGE IN CARE NEEDS — Resident's overall level of self sufficiency has changed significantly as compared to status of **90 days ago** (or since last assessment if less than 90 days)

0. No change
1. Improved—receives fewer supports, needs less restrictive level of care
2. Deteriorated—receives more support

R2. SIGNATURE OF PERSON COORDINATING THE ASSESSMENT:

a. Signature of RN Assessment Coordinator (sign on above line)

b. Date RN Assessment Coordinator signed as complete — Month ___ Day ___ Year ____

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Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) - *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

MDS QUARTERLY ASSESSMENT FORM
(OPTIONAL VERSION FOR RUG-III 1997 Update)

Numeric Identifier _____

A1.	RESIDENT NAME	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
A2.	ROOM NUMBER	
A3.	ASSESSMENT REFERENCE DATE	a. Last day of MDS observation period — Month — Day — Year b. Original (0) or corrected copy of form (enter number of correction)
A4a.	DATE OF REENTRY	Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) — Month — Day — Year
A6.	MEDICAL RECORD NO.	
B1.	COMATOSE	(*Persistent vegetative state/no discernible consciousness*) 0. No 1. Yes (***Skip to Section G***)
B2.	MEMORY	(*Recall of what was learned or known*) a. Short-term memory OK—seems/appears to recall after 5 minutes 0. Memory OK 1. Memory problem b. Long-term memory OK—seems/appears to recall long past 0. Memory OK 1. Memory problem
B3.	MEMORY/ RECALL ABILITY	(***Check all*** *that resident was* ***normally able to recall during last 7 days***) Current season a. Location of own room b. That he/she is in a nursing home d. Staff names/faces c. *NONE OF ABOVE* are recalled e.
B4.	COGNITIVE SKILLS FOR DAILY DECISION-MAKING	(*Made decisions regarding tasks of daily life*) 0. *INDEPENDENT*—decisions consistent/reasonable 1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only 2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required 3. *SEVERELY IMPAIRED*—never/rarely made decisions
B5.	INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/ AWARENESS	(*Code for behavior in the* ***last 7 days.***) [***Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time***]. 0. Behavior not present 1. Behavior present, not of recent onset 2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening) a. EASILY DISTRACTED—(e.g., difficulty paying attention; gets sidetracked) b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day) c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought) d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out) e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space; difficult to arouse; little body movement) f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)
C4.	MAKING SELF UNDERSTOOD	(*Expressing information content—however able*) 0. *UNDERSTOOD* 1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts 2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests 3. *RARELY/NEVER UNDERSTOOD*
C5.	ABILITY TO UNDERSTAND OTHERS	(*Understanding verbal information content—however able*) 0. *UNDERSTANDS* 1. *USUALLY UNDERSTANDS*—may miss some part/intent of message 2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication 3. *RARELY/NEVER UNDERSTANDS*
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E1.	INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD	**VERBAL EXPRESSIONS OF DISTRESS** a. Resident made negative statements—e.g., "*Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die*" b. Repetitive questions—e.g., "*Where do I go; What do I do?*" c. Repetitive verbalizations—e.g., calling out for help, ("*God help me*") d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received e. Self deprecation—e.g., "*I am nothing; I am of no use to anyone*" f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/ reassurance regarding schedules, meals, laundry, clothing, relationship issues **SLEEP-CYCLE ISSUES** j. Unpleasant mood in morning k. Insomnia/change in usual sleep pattern **SAD, APATHETIC, ANXIOUS APPEARANCE** l. Sad, pained, worried facial expressions—e.g., furrowed brows m. Crying, tearfulness n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking **LOSS OF INTEREST** o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends p. Reduced social interaction
E2.	MOOD PERSISTENCE	**One or more indicators** of depressed, sad or anxious mood **were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days** 0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered
E4.	BEHAVIORAL SYMPTOMS	(A) ***Behavioral*** *symptom* ***frequency in last 7 days*** 0. Behavior not exhibited in last 7 days 1. Behavior of this type occurred 1 to 3 days in last 7 days 2. Behavior of this type occurred 4 to 6 days, but less than daily 3. Behavior of this type occurred daily (B) ***Behavioral*** *symptom* ***alterability in last 7 days*** 0. Behavior not present OR behavior was easily altered 1. Behavior was not easily altered (A) (B) a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety) b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at) c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused) d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings) e. RESISTS CARE (resisted taking medications/injections, ADL assistance, or eating)
G1.		(A) ADL SELF-PERFORMANCE—(***Code for resident's PERFORMANCE OVER ALL SHIFTS during last 7 days***—*Not including setup*) 0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days 1. SUPERVISION—Oversight, encouragement or cueing provided 3 or more times during last7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days 2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days 3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times: —Weight-bearing support — Full staff performance during part (but not all) of last 7 days 4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days 8. *ACTIVITY DID NOT OCCUR* during entire 7 days (B) ADL SUPPORT PROVIDED—(***Code for MOST SUPPORT PROVIDED OVER ALL SHIFTS during last 7 days; code regardless*** *of resident's self-performance classification*) 0. No setup or physical help from staff 1. Setup help only 2. One person physical assist 3. Two+ persons physical assist 8. ADL activity itself did not occur during entire 7 days (A) SELF-PERF (B) SUPPORT
a.	BED MOBILITY	How resident moves to and from lying position, turns side to side, and positions body while in bed
b.	TRANSFER	How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)

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G1.			(A)	(B)
c.	WALK IN ROOM	How resident walks between locations in his/her room		
d.	WALK IN CORRIDOR	How resident walks in corridor on unit		
e.	LOCOMOTION ON UNIT	How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair		
f.	LOCOMOTION OFF UNIT	How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair		
g.	DRESSING	How resident puts on, fastens, and takes off all items of **street clothing**, including donning/removing prosthesis		
h.	EATING	How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition)		
i.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes		
j.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)		

G2. BATHING — How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) ***Code for most dependent** in self-performance.*

(A) BATHING SELF PERFORMANCE codes appear below — (A)

0. Independent—No help provided
1. Supervision—Oversight help only
2. Physical help limited to transfer only
3. Physical help in part of bathing activity
4. Total dependence
8. Activity itself did not occur during entire 7 days

G3. TEST FOR BALANCE (see training manual) — (*Code for ability during test in the **last 7 days***)

0. Maintained position as required in test
1. Unsteady, but able to rebalance self without physical support
2. Partial physical support during test; or stands (sits) but does not follow directions for test
3. Not able to attempt test without physical help

		(A)	(B)
a.	Balance while standing		
b.	Balance while sitting—position, trunk control		

G4. FUNCTIONAL LIMITATION IN RANGE OF MOTION — (*Code for limitations during **last 7 days** that interfered with daily functions or placed residents at risk of injury*)

(A) *RANGE OF MOTION*: 0. No limitation; 1. Limitation on one side; 2. Limitation on both sides

(B) *VOLUNTARY MOVEMENT*: 0. No loss; 1. Partial loss; 2. Full loss

		(A)	(B)
a.	Neck		
b.	Arm—including shoulder or elbow		
c.	Hand—including wrist or fingers		
d.	Leg—including hip or knee		
e.	Foot—including ankle or toes		
f.	Other limitation or loss		

G6. MODES OF TRANSFER — (***Check all that apply** during **last 7 days***)

Bedfast all or most of time [a.] — *NONE OF ABOVE* [f.]

Bed rails used for bed mobility or transfer [b.]

G7. TASK SEGMENTATION — Some or all of ADL activities were broken into subtasks during **last 7** days so that resident could perform them (0. No 1. Yes)

H1. CONTINENCE SELF-CONTROL CATEGORIES (***Code for resident's PERFORMANCE OVER ALL SHIFTS***)

0. *CONTINENT*—Complete control *[includes use of indwelling urinary catheter or ostomy device that does not leak urine or stool]*
1. *USUALLY CONTINENT*—BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly
2. *OCCASIONALLY INCONTINENT*—BLADDER, 2 or more times a week but not daily; BOWEL, once a week
3. *FREQUENTLY INCONTINENT*—BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week
4. *INCONTINENT*—Had inadequate control BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time

a.	BOWEL CONTINENCE	Control of bowel movement, with appliance or bowel continence programs, if employed	
b.	BLADDER CONTINENCE	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed	

H2. BOWEL ELIMINATION PATTERN — Diarrhea [c.] — *NONE OF ABOVE* [e.]; Fecal impaction [d.]

H3. APPLIANCES AND PROGRAMS

Any scheduled toileting plan	a.	Indwelling catheter	d.
Bladder retraining program	b.	Ostomy present	i.
External (condom) catheter	c.	*NONE OF ABOVE*	j.

Check only those diseases that have a relationship to current ADL status, cognitive status, mood and behavior status, medical treatments, nursing monitoring, or risk of death. (Do not list inactive diagnoses)

I1. DISEASES — (***If none apply, CHECK the NONE OF ABOVE box***)

ENDOCRINE/METABOLIC/ NUTRITIONAL		Hemiplegia/Hemiparesis	v.
		Multiple sclerosis	w.
Diabetes mellitus	a.	Quadriplegia	z.
MUSCULOSKELETAL		**PSYCHIATRIC/MOOD**	
Hip fracture	m.	Depression	ee.
NEUROLOGICAL		Manic depressive (bipolar disease)	ff.
Aphasia	r.		
Cerebral palsy	s.	**OTHER**	
Cerebrovascular accident (stroke)	t.	*NONE OF ABOVE*	rr.

I2. INFECTIONS — (***If none apply, CHECK the NONE OF ABOVE box***)

Antibiotic resistant infection (e.g., Methicillin resistant staph)	a.	Septicemia	g.
		Sexually transmitted diseases	h.
Clostridium difficile (c. diff.)	b.	Tuberculosis	i.
Conjunctivitis	c.	Urinary tract infection **in last 30 days**	j.
HIV infection	d.	Viral hepatitis	k.
Pneumonia	e.	Wound infection	l.
Respiratory infection	f.	NONE OF ABOVE	m.

I3. OTHER CURRENT DIAGNOSES AND ICD-9 CODES — (*Include **only those diseases diagnosed in the last 90 days that have a relationship** to current ADL status, cognitive status, mood or behavior status, medical treatments, nursing monitoring, or risk of death*)

a. _____ . ___

b. _____ . ___

J1. PROBLEM CONDITIONS — (***Check all problems present** in **last 7 days** unless other time frame is indicated*)

INDICATORS OF FLUID STATUS		**OTHER**	
		Delusions	e.
Weight gain or loss of 3 or more pounds within a 7 day period		Edema	g.
	a.	Fever	h.
		Hallucinations	i.
Inability to lie flat due to shortness of breath	b.	Internal bleeding	j.
		Recurrent lung aspirations in **last 90 days**	k.
Dehydrated; output exceeds input	c.	Shortness of breath	l.
		Unsteady gait	n.
Insufficient fluid; did **NOT** consume all/almost all liquids provided during **last 3 days**	d.	Vomiting	o.
		NONE OF ABOVE	p.

J2. PAIN SYMPTOMS — (*Code the **highest level of pain** present in the **last 7 days***)

a. FREQUENCY with which resident complains or shows evidence of pain
0. No pain (***skip to J4***)
1. Pain less than daily
2. Pain daily

b. INTENSITY of pain
1. Mild pain
2. Moderate pain
3. Times when pain is horrible or excruciating

J4. ACCIDENTS — (***Check all that apply***)

Fell in **past 30 days** [a.] — Hip fracture in **last 180 days** [c.]

Fell in **past 31-180 days** [b.] — Other fracture in **last 180 days** [d.]; *NONE OF ABOVE* [e.]

J5. STABILITY OF CONDITIONS

Conditions/diseases make resident's cognitive, ADL, mood or behavior status unstable—(fluctuating, precarious, or deteriorating)	a.
Resident experiencing an acute episode or a flare-up of a recurrent or chronic problem	b.
End-stage disease, 6 or fewer months to live	c.
NONE OF ABOVE	d.

K1. ORAL PROBLEMS

Chewing problem	a.
Swallowing problem	b.
NONE OF ABOVE	d.

K2. HEIGHT AND WEIGHT — *Record **(a.) height in inches** and **(b.) weight in pounds**. Base weight on most recent measure in **last 30 days**; measure weight consistently in accord with standard facility practice—e.g., in a.m. after voiding, before meal, with shoes off, and in nightclothes*

a. HT (in.) ___ b. WT (lb.) ___

K3. WEIGHT CHANGE

a. Weight loss—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** (0. No 1. Yes)

b. Weight gain—5 % or more in **last 30 days**; or 10 % or more in **last 180 days** (0. No 1. Yes)

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K5.	NUTRITIONAL APPROACHES	(*Check all that apply in last 7 days*) Parenteral/IV [a.] On a planned weight change program [b.] Feeding tube [ ] NONE OF ABOVE	h. i.
K6.	PARENTERAL OR ENTERAL INTAKE	(*Skip to Section M if neither 5a nor 5b is checked*) a. Code the proportion of **total calories** the resident received through parenteral or tube feedings in the **last 7 days**: 0. None; 1. 1% to 25%; 2. 26% to 50%; 3. 51% to 75%; 4. 76% to 100%. b. Code the average **fluid intake** per day by IV or tube in **last 7 days**: 0. None; 1. 1 to 500 cc/day; 2. 501 to 1000 cc/day; 3. 1001 to 1500 cc/day; 4. 1501 to 2000 cc/day; 5. 2001 or more cc/day	
M1.	ULCERS (Due to any cause)	(*Record the number of ulcers at each ulcer stage—regardless of cause. If none present at a stage, record "0" (zero). Code all that apply during **last 7 days**. Code 9 = 9 or more.*) **[Requires full body exam.]**	Number at Stage
		a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved.	
		b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater.	
		c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues - presents as a deep crater with or without undermining adjacent tissue.	
		d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.	
M2.	TYPE OF ULCER	(*For each type of ulcer, **code for the highest stage in the last 7 days** using scale in item M1—i.e., 0=none; stages 1, 2, 3, 4*) a. Pressure ulcer—any lesion caused by pressure resulting in damage of underlying tissue b. Stasis ulcer—open lesion caused by poor circulation in the lower extremities	
M4.	OTHER SKIN PROBLEMS OR LESIONS PRESENT (*Check all that apply during **last 7 days***)	Abrasions, bruises a. Burns (second or third degree) b. Open lesions other than ulcers, rashes, cuts (e.g., cancer lesions) c. Rashes—e.g., intertrigo, eczema, drug rash, heat rash, herpes zoster d. Skin desensitized to pain or pressure e. Skin tears or cuts (other than surgery) f. Surgical wounds g. NONE OF ABOVE h.	
M5.	SKIN TREATMENTS (*Check all that apply during **last 7 days***)	Pressure relieving device(s) for chair a. Pressure relieving device(s) for bed b. Turning/repositioning program c. Nutrition or hydration intervention to manage skin problems d. Ulcer care e. Surgical wound care f. Application of dressings (with or without topical medications) other than to feet g. Application of ointments/medications (other than to feet) h. Other preventative or protective skin care (other than to feet) i. NONE OF ABOVE j.	
M6.	FOOT PROBLEMS AND CARE (*Check all that apply during **last 7 days***)	Resident has one or more foot problems—e.g., corns, callouses, bunions, hammer toes, overlapping toes, pain, structural problems a. Infection of the foot—e.g., cellulitis, purulent drainage b. Open lesions on the foot c. Nails/calluses trimmed during **last 90 days** d. Received preventative or protective foot care (e.g., used special shoes, inserts, pads, toe separators) e. Application of dressings (with or without topical medications) f. NONE OF ABOVE g.	
N1.	TIME AWAKE	(*Check appropriate time periods over last 7 days*) Resident awake all or most of time (i.e., naps no more than one hour per time period) in the: Morning [a.] Evening c. Afternoon [b.] NONE OF ABOVE d.	
	(If resident is comatose, skip to Section O)		
N2.	AVERAGE TIME INVOLVED IN ACTIVITIES	(**When awake and not receiving treatments or ADL care**) 0. Most—more than 2/3 of time; 1. Some—from 1/3 to 2/3 of time; 2. Little—less than 1/3 of time; 3. None	
O1.	NUMBER OF MEDICATIONS	(*Record the number of **different** medications used in the **last 7 days**; enter "0" if none used*)	
O3.	INJECTIONS	(*Record the number of **DAYS** injections of any type received during the **last 7 days**; enter "0" if none used*)	
O4.	DAYS RECEIVED THE FOLLOWING MEDICATION	(*Record the number of **DAYS** during **last 7 days**; enter "0" if not used. Note—enter "1" for long-acting meds used less than weekly*) a. Antipsychotic; b. Antianxiety; c. Antidepressant; d. Hypnotic; e. Diuretic	

P1.	SPECIAL TREATMENTS, PROCEDURES, AND PROGRAMS	a. **SPECIAL CARE**—*Check treatments or programs received during the last 14 days*	
		TREATMENTS: Chemotherapy [a.]; Dialysis [b.]; IV medication [c.]; Intake/output [d.]; Monitoring acute medical condition [e.]; Ostomy care [f.]; Oxygen therapy [g.]; Radiation [h.]; Suctioning [i.]; Tracheostomy care [j.]; Transfusions [k.]; Ventilator or respirator l.	
		PROGRAMS: Alcohol/drug treatment program m.; Alzheimer's/dementia special care unit n.; Hospice care o.; Pediatric unit p.; Respite care q.; Training in skills required to return to the community (e.g., taking medications, house work, shopping, transportation, ADLs) r.; NONE OF ABOVE s.	
		b. **THERAPIES** - *Record the number of days and total minutes each of the following therapies was administered (for at least 15 minutes a day) in the **last 7 calendar days** (Enter 0 if none or less than 15 min. daily)* **[Note—count only post admission therapies]** **(A) = # of days** administered for **15 minutes or more**; **(B) = total # of minutes** provided in **last 7 days**	DAYS (A); MIN (B)
		a. Speech - language pathology and audiology services; b. Occupational therapy; c. Physical therapy; d. Respiratory therapy; e. Psychological therapy (by any licensed mental health professional)	
P3.	NURSING REHABILITATION/ RESTORATIVE CARE	*Record the NUMBER OF DAYS each of the following rehabilitation or restorative techniques or practices was **provided to the resident for more than or equal to 15 minutes per day in the last 7 days** (Enter 0 if none or less than 15 min. daily.)* a. Range of motion (passive); b. Range of motion (active); c. Splint or brace assistance; **TRAINING AND SKILL PRACTICE IN:** d. Bed mobility; e. Transfer; f. Walking; g. Dressing or grooming; h. Eating or swallowing; i. Amputation/prosthesis care; j. Communication; k. Other	
P4.	DEVICES AND RESTRAINTS	*Use the following codes for **last 7 days**:* 0. Not used; 1. Used less than daily; 2. Used daily. Bed rails: a. — Full bed rails on all open sides of bed; b. — Other types of side rails used (e.g., half rail, one side); c. Trunk restraint; d. Limb restraint; e. Chair prevents rising	
P7.	PHYSICIAN VISITS	In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) examined the resident? (*Enter 0 if none*)	
P8.	PHYSICIAN ORDERS	In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) changed the resident's orders? *Do not include order renewals without change.* (*Enter 0 if none*)	
Q2.	OVERALL CHANGE IN CARE NEEDS	Resident's overall level of self sufficiency has changed significantly as compared to status of **90 days ago** (or since last assessment if less than 90 days) 0. No change; 1. Improved—receives fewer supports, needs less restrictive level of care; 2. Deteriorated—receives more support	
R2.	SIGNATURE OF PERSON COORDINATING THE ASSESSMENT:		
		a. Signature of RN Assessment Coordinator (sign on above line)	
		b. Date RN Assessment Coordinator signed as complete — Month — Day — Year	

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FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

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FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

***DISCHARGE TRACKING FORM* [*do not use for temporary visits home*]**

SECTION AA. IDENTIFICATION INFORMATION

1.	RESIDENT NAME ⊙	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
2.	GENDER ⊙	1. Male 2. Female
3.	BIRTHDATE ⊙	Month — Day — Year
4.	RACE/ ETHNICITY ⊙	1. American Indian/Alaskan Native 2. Asian/Pacific Islander 3. Black, not of Hispanic origin 4. Hispanic 5. White, not of Hispanic origin
5.	SOCIAL SECURITY ⊙ AND MEDICARE NUMBERS ⊙ [C in 1st box if non med. no.]	a. Social Security Number b. Medicare number (or comparable railroad insurance number)
6.	FACILITY PROVIDER NO. ⊙	a. State No. b. Federal No.
7.	MEDICAID NO. ["+" *if pending, "N" if not a Medicaid recipient*] ⊙	
8.	REASONS FOR ASSESS-MENT	[Note—Other codes do not apply to this form] a. Primary reason for assessment 6. Discharged—return not anticipated 7. Discharged—return anticipated 8. Discharged prior to completing initial assessment

9. Signatures of Persons who Completed a Portion of the Accompanying Assessment or Tracking Form

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with applicable Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that residents receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Sections	Date
a.		
b.		
c.		

SECTION AB. DEMOGRAPHIC INFORMATION

[*Complete only for stays less than 14 days*] (AA8a=8)

1.	DATE OF ENTRY	*Date the stay began. Note — Does not include readmission if record was closed at time of temporary discharge to hospital, etc. In such cases, use prior admission date* Month — Day — Year
2.	ADMITTED FROM (AT ENTRY)	1. Private home/apt. with no home health services 2. Private home/apt. with home health services 3. Board and care/assisted living/group home 4. Nursing home 5. Acute care hospital 6. Psychiatric hospital, MR/DD facility 7. Rehabilitation hospital 8. Other

SECTION A. IDENTIFICATION AND BACKGROUND INFORMATION

6.	MEDICAL RECORD NO.	

SECTION R. ASSESSMENT/DISCHARGE INFORMATION

3.	DISCHARGE STATUS	a. *Code for resident disposition upon discharge* 1. Private home/apartment with no home health services 2. Private home/apartment with home health services 3. Board and care/assisted living 4. Another nursing facility 5. Acute care hospital 6. Psychiatric hopital, MR/DD facility 7. Rehabilitation hospital 8. Deceased 9. Other b. *Optional State Code*
4.	DISCHARGE DATE	*Date of death or discharge* Month — Day — Year

⊙ = Key items for computerized resident tracking

☐ = When box blank, must enter number or letter [a.] = When letter in box, check if condition applies

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FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

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FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

REENTRY TRACKING FORM

SECTION AA. IDENTIFICATION INFORMATION

1.	RESIDENT NAME ⊙	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
2.	GENDER ⊙	1. Male 2. Female
3.	BIRTHDATE ⊙	Month — Day — Year
4.	RACE/ ETHNICITY ⊙	1. American Indian/Alaskan Native 2. Asian/Pacific Islander 3. Black, not of Hispanic origin 4. Hispanic 5. White, not of Hispanic origin
5.	SOCIAL SECURITY ⊙ AND MEDICARE NUMBERS ⊙ [C in 1st box if non med. no.]	a. Social Security Number — — b. Medicare number (or comparable railroad insurance number)
6.	FACILITY PROVIDER NO. ⊙	a. State No. b. Federal No.
7.	MEDICAID NO. ["+" if pending, "N" if not a Medicaid recipient] ⊙	
8.	REASONS FOR ASSESS-MENT	[Note—Other codes do not apply to this form] a. Primary reason for assessment 9. Reentry

9. Signatures of Persons who Completed a Portion of the Accompanying Assessment or Tracking Form

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with applicable Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that residents receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Sections	Date
a.		
b.		
c.		

SECTION A. IDENTIFICATION AND BACKGROUND INFORMATION

4a.	DATE OF REENTRY	Date of reentry: Month — Day — Year
4b.	ADMITTED FROM (AT REENTRY)	1. Private home/apt. with no home health services 2. Private home/apt. with home health services 3. Board and care/assisted living/group home 4. Nursing home 5. Acute care hospital 6. Psychiatric hospital, MR/DD facility 7. Rehabilitation hospital 8. Other
6.	MEDICAL RECORD NO.	

⊙ = Key items for computerized resident tracking

☐ = When box blank, must enter number or letter a. ☐ = When letter in box, check if condition applies

Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) - *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

W2 inactive on reentry

W3 inactive on reentry

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FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

Correction Request Form

Use this form (1) to request correction of error(s) in an MDS assessment record or error(s) in an MDS Discharge or Reentry Tracking form record that has been previously accepted into the State MDS database, (2) to identify the inaccurate record, and (3) to attest to the correction request. A correction request can be made to either MODIFY or INACTIVATE a record.

TO MODIFY A RECORD IN THE STATE DATABASE:
1. Complete a new corrected assessment form or tracking form. Include all the items on the form, not just those in need of correction;
2. Complete and attach this Correction Request Form to the corrected assessment or tracking form;
3. Create a new electronic record including the corrected assessment or tracking form AND the Correction Request Form; and
4. Electronically submit the new record (as in #3) to the MDS database at the State.

TO INACTIVATE A RECORD IN THE STATE DATABASE:
1. Complete this correction request form;
2. Create an electronic record of the Correction Request Form; and
3. Electronically submit this Correction Request record to the MDS database at the State.

PRIOR RECORD SECTION.
THIS SECTION IDENTIFIES THE ASSESSMENT OR TRACKING FORM THAT IS IN ERROR. (*In this section, reproduce the information EXACTLY as it appeared in the erroneous record, even if the information is wrong. This information is necessary in order to locate the record in the State database.*)

Prior AA1.	RESIDENT NAME	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
Prior AA2.	GENDER	1. Male 2. Female
Prior AA3.	BIRTHDATE	Month — Day — Year
Prior AA5.	SOCIAL SECURITY	a. Social Security Number
Prior AA8.	REASONS FOR ASSESSMENT	a. Primary reason for assessment ASSESSMENT (Complete Prior Date item Prior A3a *ONLY*) 1. Admission assessment (required by day 14) 2. Annual assessment 3. Significant change in status assessment 4. Significant correction of prior full assessment 5. Quarterly review assessment 10. Significant correction of prior quarterly assessment 0. *NONE OF ABOVE* DISCHARGE TRACKING (Complete Prior Date item Prior R4 *ONLY*) 6. Discharged—return not anticipated 7. Discharged—return anticipated 8. Discharged prior ro completing initial assessment REENTRY TRACKING (Complete Prior Date item Prior A4a *ONLY*) 9. Reentry **b. *Codes for assessments required for Medicare PPS or the State*** *1. Medicare 5 day assessment* *2. Medicare 30 day assessment* *3. Medicare 60 day assessment* *4. Medicare 90 day assessment* *5. Medicare readmission/return assessment* *6. Other state required assessment* *7. Medicare 14 day assessment* *8. Other Medicare required assessment*
	PRIOR DATE	(***Complete one only***) Complete Prior A3a if Primary Reason (Prior AA8a) equals 1, 2, 3, 4, 5, 10, or 0. Complete Prior R4 if Primary Reason (Prior AA8a) equals 6, 7, or 8. Complete Prior A4a if Primary Reason (Prior AA8a) equals 9.
Prior A3.	ASSESSMENT REFERENCE DATE	a. *Last day of MDS observation period* Month — Day — Year
Prior R4.	DISCHARGE DATE	*Date of discharge* Month — Day — Year
Prior A4a.	DATE OF REENTRY	*Date of reentry* Month — Day — Year

CORRECTION ATTESTATION SECTION.
COMPLETE THIS SECTION TO EXPLAIN AND ATTEST TO THE CORRECT REQUEST

AT1.	ATTESTATION SEQUENCE NUMBER	(*Enter total number of attestations for this record, including the present one*)
AT2.	ACTION REQUESTED	1. MODIFY record in error (*Attach and submit a COMPLETE assessment or tracking form. Do NOT submit the corrected items ONLY.* ***Proceed to item AT3 below.***) 2. INACTIVE record in error. (*Do NOT submit an assessment or tracking form. Submit the correction request only.* ***Skip to item AT4.***)

AT3.	REASONS FOR MODIFICATION	(***If AT2=1, check at least one of the following reasons; check all that apply, then skip to AT5***) a. Transcription error b. Data entry error c. Software product error d. Item coding error e. Other error *If "Other" checked, please specify:* _____
AT4.	REASONS FOR INACTIVATION	(***If AT2=2, check at least one of the following reasons; check all that apply***) a. Test record submitted as production record b. Event did not occur c. Inadvertent submission of inappropriate record d. Other reason requiring inactivation *If "Other" checked, please specify:* _____

RN COORDINATOR ATTESTATION OF COMPLETION

AT5.	ATTESTING INDIVIDUAL NAME	a. (First) b. (Last) c. (Title)
	SIGNATURE	
AT6.	ATTESTATION DATE	Month — Day — Year

AT7. ATTESTATION OF ACCURACY AND SIGNATURES OF PERSONS WHO CORRECT A PORTION OF ASSESSMENT OR TRACKING INFORMATION

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with applicable Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that residents receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Attestation Date
a.	
b.	
c.	
d.	
e.	
f.	

SECTION U. MEDICATIONS—CASE MIX DEMO

List all medications that the resident **received** during the last 7 days. Include scheduled medications that are used regularly, but less than weekly .

1. **Medication Name and Dose Ordered.** Record the name of the medication and dose ordered.
2. **Route of Administration (RA).** Code the Route of Administration using the following list:

1=by mouth (PO)	5=subcutaneous (SQ)	8=inhalation
2=sub lingual (SL)	6=rectal (R)	9=enteral tube
3=intramuscular (IM)	7=topical	10=other
4=intravenous (IV)		

3. **Frequency.** Code the number of times per day, week, or month the medication is administered using the following list:

PR=(PRN) as necessary	2D=(BID) two times daily	QO=every other day
1H=(QH) every hour	(includes every 12 hrs)	4W=4 times each week
2H=(Q2H) every two hours	3D=(TID) three times daily	5W=five times each week
3H=(Q3H) every three hours	4D=(QID) four times daily	6W=six times each week
4H=(Q4H) every four hours	5D=five times daily	1M=(Q month) once every month
6H=(Q6H) every six hours	1W=(Q week) once each wk	2M=twice every month
8H=(Q8H) every eight hours	2W=two times every week	C=continuous
1D=(QD or HS) once daily	3W=three times every week	O=other

4. **Amount Administered (AA).** Record the number of tablets, capsules, suppositories, or liquid (any route) **per dose** administered to the resident. Code 999 for topicals, eye drops, inhalants and oral medications that need to be dissolved in water..
5. **PRN-number of days (PRN-n).** If the frequency code for the medication is "PR", record the number of times during the last 7 days each PRN medication was given. Code STAT medications as PRNs given once.
6. **NDC Codes.** Enter the National Drug Code for each medication given. Be sure to enter the correct NDC code for the drug name, strength , and form. The NDC code must match the drug dispensed by the pharmacy.

1. Medication Name and Dose Ordered	2. RA	3. Freq	4. AA	5. PRN-n	6. NDC Codes

Numeric Identifier_____

MINIMUM DATA SET (MDS) — *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

BASIC ASSESSMENT TRACKING FORM

SECTION AA. IDENTIFICATION INFORMATION

1.	RESIDENT NAME ⊙	a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)
2.	GENDER ⊙	1. Male 2. Female
3.	BIRTHDATE ⊙	Month — Day — Year
4.	RACE/ETHNICITY ⊙	1. American Indian/Alaskan Native 2. Asian/Pacific Islander 3. Black, not of Hispanic origin 4. Hispanic 5. White, not of Hispanic origin
5.	SOCIAL SECURITY AND MEDICARE NUMBERS ⊙ [C in 1st box if non med. no.]	a. Social Security Number b. Medicare number (or comparable railroad insurance number)
6.	FACILITY PROVIDER NO. ⊙	a. State No. b. Federal No.
7.	MEDICAID NO. ["+" if pending, "N" if not a Medicaid recipient] ⊙	
8.	REASONS FOR ASSESSMENT	[Note—Other codes do not apply to this form] a. Primary reason for assessment 1. Admission assessment (required by day 14) 2. Annual assessment 3. Significant change in status assessment 4. Significant correction of prior full assessment 5. Quarterly review assessment 10. Significant correction of prior quarterly assessment 0. *NONE OF ABOVE* b. ***Codes for assessments required for Medicare PPS or the State*** *1. Medicare 5 day assessment* *2. Medicare 30 day assessment* *3. Medicare 60 day assessment* *4. Medicare 90 day assessment* *5. Medicare readmission/return assessment* *6. Other state required assessment* *7. Medicare 14 day assessment* *8. Other Medicare required assessment*

9. Signatures of Persons who Completed a Portion of the Accompanying Assessment or Tracking Form

I certify that the accompanying information accurately reflects resident assessment or tracking information for this resident and that I collected or coordinated collection of this information on the dates specified. To the best of my knowledge, this information was collected in accordance with applicable Medicare and Medicaid requirements. I understand that this information is used as a basis for ensuring that residents receive appropriate and quality care, and as a basis for payment from federal funds. I further understand that payment of such federal funds and continued participation in the government-funded health care programs is conditioned on the accuracy and truthfulness of this information, and that I may be personally subject to or may subject my organization to substantial criminal, civil, and/or administrative penalties for submitting false information. I also certify that I am authorized to submit this information by this facility on its behalf.

Signature and Title	Sections	Date
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		
k.		
l.		

GENERAL INSTRUCTIONS

Complete this information for submission with all full and quarterly assessments (Admission, Annual, Significant Change, State or Medicare required assessments, or Quarterly Reviews, etc.)

⊙ = Key items for computerized resident tracking

☐ = When box blank, must enter number or letter a. = When letter in box, check if condition applies

MDS 2.0 September, 2000

MDS MEDICARE PPS ASSESSMENT FORM
(VERSION JULY 2002)

Numeric Identifier _____

A0b. RESIDENTIAL HISTORY 5 YEARS PRIOR TO ENTRY — *(Check all settings resident lived in during 5 years prior to date of entry)*

- a. Prior stay at this nursing home
- b. Stay in other nursing home
- c. Other residential facility—board and care home, assisted living, group home
- d. MH/psychiatric setting
- e. MR/DD setting
- f. *NONE OF ABOVE*

A1. RESIDENT NAME — a. (First) b. (Middle Initial) c. (Last) d. (Jr/Sr)

A2. ROOM NUMBER

A3. ASSESSMENT REFERENCE DATE — a. Last day of MDS observation period (Month — Day — Year)

A4a DATE OF REENTRY — Date of reentry from most recent temporary discharge to a hospital in last 90 days (or since last assessment or admission if less than 90 days) (Month — Day — Year)

A5. MARITAL STATUS — 1. Never married 2. Married 3. Widowed 4. Separated 5. Divorced

A6. MEDICAL RECORD NO.

A10. ADVANCED DIRECTIVES — *(For those items with supporting **documentation** in the medical record, check all that apply)*

b. Do not resuscitate ☐ c. Do not hospitalize ☐

B1. COMATOSE — *(Persistent vegetative state/no discernible consciousness)* 0. No 1. Yes ***(If Yes, skip to Section G)***

B2. MEMORY — *(Recall of what was learned or known)*

- a. Short-term memory OK—seems/appears to recall after 5 minutes — 0. Memory OK 1. Memory problem
- b. Long-term memory OK—seems/appears to recall long past — 0. Memory OK 1. Memory problem

B3. MEMORY/RECALL ABILITY — *(Check all that resident was normally able to recall during last 7 days)*

- a. Current season
- b. Location of own room
- c. Staff names/faces
- d. That he/she is in a nursing home
- e. *NONE OF ABOVE* are recalled

B4. COGNITIVE SKILLS FOR DAILY DECISION-MAKING — *(Made decisions regarding tasks of daily life)*

0. *INDEPENDENT*—decisions consistent/reasonable
1. *MODIFIED INDEPENDENCE*—some difficulty in new situations only
2. *MODERATELY IMPAIRED*—decisions poor; cues/supervision required
3. *SEVERELY IMPAIRED*—never/rarely made decisions

B5. INDICATORS OF DELIRIUM—PERIODIC DISORDERED THINKING/AWARENESS — *(Code for behavior in the last 7 days.)* **[Note: Accurate assessment requires conversations with staff and family who have direct knowledge of resident's behavior over this time].**

0. Behavior not present
1. Behavior present, not of recent onset
2. Behavior present, over last 7 days appears different from resident's usual functioning (e.g., new onset or worsening)

- a. EASILY DISTRACTED—(e.g., difficulty paying attention; gets sidetracked)
- b. PERIODS OF ALTERED PERCEPTION OR AWARENESS OF SURROUNDINGS—(e.g., moves lips or talks to someone not present; believes he/she is somewhere else; confuses night and day)
- c. EPISODES OF DISORGANIZED SPEECH—(e.g., speech is incoherent, nonsensical, irrelevant, or rambling from subject to subject; loses train of thought)
- d. PERIODS OF RESTLESSNESS—(e.g., fidgeting or picking at skin, clothing, napkins, etc; frequent position changes; repetitive physical movements or calling out)
- e. PERIODS OF LETHARGY—(e.g., sluggishness; staring into space; difficult to arouse; little body movement)
- f. MENTAL FUNCTION VARIES OVER THE COURSE OF THE DAY—(e.g., sometimes better, sometimes worse; behaviors sometimes present, sometimes not)

C4. MAKING SELF UNDERSTOOD — *(Expressing information content—however able)*

0. *UNDERSTOOD*
1. *USUALLY UNDERSTOOD*—difficulty finding words or finishing thoughts
2. *SOMETIMES UNDERSTOOD*—ability is limited to making concrete requests
3. *RARELY/NEVER UNDERSTOOD*

C6. ABILITY TO UNDERSTAND OTHERS — *(Understanding verbal information content—however able)*

0. *UNDERSTANDS*
1. *USUALLY UNDERSTANDS*—may miss some part/intent of message
2. *SOMETIMES UNDERSTANDS*—responds adequately to simple, direct communication
3. *RARELY/NEVER UNDERSTANDS*

D1. VISION — *(Ability to see in adequate light and with glasses if used)*

0. *ADEQUATE*—sees fine detail, including regular print in newspapers/books
1. *IMPAIRED*—sees large print, but not regular print in newspapers/books
2. *MODERATELY IMPAIRED*—limited vision; not able to see newspaper headlines, but can identify objects
3. *HIGHLY IMPAIRED*—object identification in question, but eyes appear to follow objects
4. *SEVERELY IMPAIRED*—no vision or sees only light, colors, or shapes; eyes do not appear to follow objects

E1. INDICATORS OF DEPRESSION, ANXIETY, SAD MOOD — *(Code for indicators observed in last 30 days, irrespective of the assumed cause)*

0. Indicator not exhibited in last 30 days
1. Indicator of this type exhibited up to five days a week
2. Indicator of this type exhibited daily or almost daily (6, 7 days a week)

VERBAL EXPRESSIONS OF DISTRESS

- a. Resident made negative statements—e.g., *"Nothing matters; Would rather be dead; What's the use; Regrets having lived so long; Let me die"*
- b. Repetitive questions—e.g., *"Where do I go; What do I do?"*
- c. Repetitive verbalizations—e.g., calling out for help, *("God help me")*
- d. Persistent anger with self or others—e.g., easily annoyed, anger at placement in nursing home; anger at care received
- e. Self deprecation—e.g., *"I am nothing; I am of no use to anyone"*
- f. Expressions of what appear to be unrealistic fears—e.g., fear of being abandoned, left alone, being with others
- g. Recurrent statements that something terrible is about to happen—e.g., believes he or she is about to die, have a heart attack
- h. Repetitive health complaints—e.g., persistently seeks medical attention, obsessive concern with body functions
- i. Repetitive anxious complaints/concerns (non-health related) e.g., persistently seeks attention/reassurance regarding schedules, meals, laundry, clothing, relationship issues

SLEEP-CYCLE ISSUES

- j. Unpleasant mood in morning
- k. Insomnia/change in usual sleep pattern

SAD, APATHETIC, ANXIOUS APPEARANCE

- l. Sad, pained, worried facial expressions—e.g., furrowed brows
- m. Crying, tearfulness
- n. Repetitive physical movements—e.g., pacing, hand wringing, restlessness, fidgeting, picking

LOSS OF INTEREST

- o. Withdrawal from activities of interest—e.g., no interest in long standing activities or being with family/friends
- p. Reduced social interaction

E2. MOOD PERSISTENCE — **One or more indicators of depressed, sad or anxious mood were not easily altered by attempts to "cheer up", console, or reassure the resident over last 7 days**

0. No mood indicators 1. Indicators present, easily altered 2. Indicators present, not easily altered

Resident Identifier _____ Numeric Identifier _____

E4. BEHAVIORAL SYMPTOMS

(A) *Behavioral symptom frequency in last 7 days*
0. Behavior not exhibited in last 7 days
1. Behavior of this type occurred 1 to 3 days in last 7 days
2. Behavior of this type occurred 4 to 6 days, but less than daily
3. Behavior of this type occurred daily

(B) *Behavioral symptom alterability in last 7 days*
0. Behavior not present OR behavior was easily altered
1. Behavior was not easily altered

	(A)	(B)
a. WANDERING (moved with no rational purpose, seemingly oblivious to needs or safety)		
b. VERBALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were threatened, screamed at, cursed at)		
c. PHYSICALLY ABUSIVE BEHAVIORAL SYMPTOMS (others were hit, shoved, scratched, sexually abused)		
d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIORAL SYMPTOMS (made disruptive sounds, noisiness, screaming, self-abusive acts, sexual behavior or disrobing in public, smeared/threw food/feces, hoarding, rummaged through others' belongings)		
e. RESISTS CARE (resisted taking medications/injections, ADL assistance, or eating)		

G1. (A) ADL SELF-PERFORMANCE—*(Code for resident's **PERFORMANCE OVER ALL SHIFTS during last 7 days**—Not including setup)*

0. *INDEPENDENT*—No help or oversight —OR— Help/oversight provided only 1 or 2 times during last 7 days
1. *SUPERVISION*—Oversight, encouragement or cueing provided 3 or more times during last 7 days —OR— Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days
2. *LIMITED ASSISTANCE*—Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times —OR—More help provided only 1 or 2 times during last 7 days
3. *EXTENSIVE ASSISTANCE*—While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times:
—Weight-bearing support
— Full staff performance during part (but not all) of last 7 days
4. *TOTAL DEPENDENCE*—Full staff performance of activity during entire 7 days
8. *ACTIVITY DID NOT OCCUR* during entire 7 days

(B) ADL SUPPORT PROVIDED—*(Code for MOST SUPPORT PROVIDED OVER ALL SHIFTS during last 7 days; code regardless of resident's self-performance classification)*

0. No setup or physical help from staff
1. Setup help only
2. One person physical assist
3. Two+ persons physical assist
8. ADL activity itself did not occur during entire 7days

			(A) SELF-PERF	(B) SUPPORT
a.	BED MOBILITY	How resident moves to and from lying position, turns side to side, and positions body while in bed		
b.	TRANSFER	How resident moves between surfaces—to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet)		
c.	WALK IN ROOM	How resident walks between locations in his/her room		
d.	WALK IN CORRIDOR	How resident walks in corridor on unit		
e.	LOCOMOTION ON UNIT	How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair		
f.	LOCOMOTION OFF UNIT	How resident moves to and returns from off unit locations (e.g., areas set aside for dining, activities, or treatments). **If facility has only one floor**, how resident moves to and from distant areas on the floor. If in wheelchair, self-sufficiency once in chair		
g.	DRESSING	How resident puts on, fastens, and takes off all items of **clothing**, including donning/removing prosthesis		
h.	EATING	How resident eats and drinks (regardless of skill). Includes intake of nourishment by other means (e.g., tube feeding, total parenteral nutrition)		
i.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfer on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes		
j.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)		

G2. BATHING — How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) *Code for most dependent in self-performance.*

(A) BATHING SELF PERFORMANCE codes appear below — (A)

0. Independent—No help provided
1. Supervision—Oversight help only
2. Physical help limited to transfer only
3. Physical help in part of bathing activity
4. Total dependence
8. Activity itself did not occur during entire 7 days

G3. TEST FOR BALANCE (see training manual) — *(Code for ability during test in the last 7 days)*

0. Maintained position as required in test
1. Unsteady, but able to rebalance self without physical support
2. Partial physical support during test; or stands (sits) but does not follow directions for test
3. Not able to attempt test without physical help

a. Balance while standing	
b. Balance while sitting—position, trunk control	

G4. FUNCTIONAL LIMITATION IN RANGE OF MOTION — *(Code for limitations during **last 7 days** that interfered with daily functions or placed residents at risk of injury)*

(A) *RANGE OF MOTION*: 0. No limitation; 1. Limitation on one side; 2. Limitation on both sides

(B) *VOLUNTARY MOVEMENT*: 0. No loss; 1. Partial loss; 2. Full loss

	(A)	(B)
a. Neck		
b. Arm—Including shoulder or elbow		
c. Hand—Including wrist or fingers		
d. Leg—Including hip or knee		
e. Foot—Including ankle or toes		
f. Other limitation or loss		

G5. MODES OF LOCOMOTION — *(Check if applied during last 7 days)*

b. Wheeled self ☐

G6. MODES OF TRANSFER — *(Check all that apply during last 7 days)*

a. Bedfast all or most of time ☐
b. Bed rails used for bed mobility or transfer ☐

G7. TASK SEGMENTATION — Some or all of ADL activities were broken into subtasks during **last 7 days** so that resident could perform them
0. No 1. Yes

H1. CONTINENCE SELF-CONTROL CATEGORIES
(Code for resident's PERFORMANCE OVER ALL SHIFTS)

0. *CONTINENT—Complete control [includes use of indwelling urinary catheter or ostomy device that does not leak urine or stool]*
1. *USUALLY CONTINENT*—BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly
2. *OCCASIONALLY INCONTINENT*—BLADDER, 2 or more times a week but not daily; BOWEL, once a week
3. *FREQUENTLY INCONTINENT*—BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week
4. *INCONTINENT*—Had inadequate control BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time

a.	BOWEL CONTINENCE	Control of bowel movement, with appliance or bowel continence programs, if employed	
b.	BLADDER CONTINENCE	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed	

H2. BOWEL ELIMINATION PATTERN

c. Diarrhea	
d. Fecal impaction	

H3. APPLIANCES AND PROGRAMS

a. Any scheduled toileting plan		d. Indwelling catheter	
b. Bladder retraining program		i. Ostomy present	
c. External (condom) catheter			

For Section I : check only those diseases that have a relationship to current ADL status, cognitive status, mood and behavior status, medical treatments, nursing monitoring, or risk of death. (Do not list inactive diagnoses)

I1. DISEASES

a. Diabetes mellitus		v. Hemiplegia/Hemiparesis	
d. Arteriosclerotic heart disease (ASHD)		w. Multiple sclerosis	
f. Congestive heart failure		x. Paraplegia	
j. Peripheral vascular disease		z. Quadriplegia	
m. Hip fracture		ee. Depression	
r. Aphasia		ff. Manic depressive (bipolar disease)	
s. Cerebral palsy		gg. Schizophrenia	
t. Cerebrovascular accident (stroke)		hh. Asthma	
		ii. Emphysema/COPD	

I2. INFECTIONS — *(If none apply, CHECK the NONE OF ABOVE box)*

a. Antibiotic resitant infection **(e.g. Methicillin resistant staph)**		g. Septicemia	
b. Clostridium difficile (c. diff.)		h. Sexually transmitted diseases	
c. Conjunctivitis		i. Tuberculosis	
d. HIV infection		j. Urinary tract infection **in last 30 days**	
e. Pneumonia		k. Viral hepatitis	
f. Respiratory infection		l. Wound infection	
		m. NONE OF ABOVE	

Resident Identifier _____ Numeric Identifier _____

I3. OTHER CURRENT DIAGNOSES AND ICD-9 CODES

a. _____ | | | | . | |

b. _____ | | | | . | |

J1. PROBLEM CONDITIONS *(Check all problems present in last 7 days unless other time frame is indicated)*

INDICATORS OF FLUID STATUS

a. Weight gain or loss of 3 or more pounds within a 7-day period

b. Inability to lie flat due to shortness of breath

c. Dehydrated; output exceeds input

d. Insufficient fluid; did **NOT** consume all/almost all liquids provided during last 3 days

OTHER

e. Delusions

g. Edema

h. Fever

i. Hallucinations

j. Internal bleeding

k. Recurrent lung aspirations in last 90 days

l. Shortness of breath

n. Unsteady gait

o. Vomiting

J2. PAIN SYMPTOMS *(Code the highest level of pain present in the last 7 days)*

a. **FREQUENCY** with which resident complains or shows evidence of pain

0. No pain *(skip to J4)*
1. Pain less than daily
2. Pain daily

b. **INTENSITY** of pain

1. Mild pain
2. Moderate pain
3. Times when pain is horrible or excruciating

J4. ACCIDENTS *(Check all that apply)*

a. Fell in **past 30 days**

b. Fell in **past 31-180 days**

c. Hip fracture in **last 180 days**

d. Other fracture in **last 180 days**

e. *NONE OF ABOVE*

J5. STABILITY OF CONDITIONS

a. Conditions/diseases make resident's cognitive, ADL, mood or behavior patterns unstable—(fluctuating, precarious, or deteriorating)

b. Resident experiencing an acute episode or a flare-up of a recurrent or chronic problem

c. End-stage disease, 6 or fewer months to live

d. *NONE OF ABOVE*

K1. ORAL PROBLEMS

a. Chewing problem

b. Swallowing problem

K2. HEIGHT AND WEIGHT *Record (a.) height in inches and (b.) **weight in pounds.** Base weight on most recent measure in **last 30 days**; measure weight consistently in accord with standard facility practice—e.g., in a.m. after voiding, before meal, with shoes off, and in nightclothes*

a. HT (in.) | | | b. WT (lb.) | | |

K3. WEIGHT CHANGE

a. **Weight loss**—5 % or more in **last 30 days**; or 10 % or more in **last 180 days**

0. No 1. Yes

b. **Weight gain**—5 % or more in **last 30 days**; or 10 % or more in **last 180 days**

0. No 1. Yes

K5. NUTRITIONAL APPROACHES *(Check all that apply in last 7 days)*

a. Parenteral/IV

b. Feeding tube

h. On a planned weight change program

K6. PARENTERAL OR ENTERAL INTAKE *(Skip to Section M if neither 5a nor 5b is checked)*

a. Code the proportion of **total calories** the resident received through parenteral or tube feedings in the **last 7 days**

0. None
1. 1% to 25%
2. 26% to 50%
3. 51% to 75%
4. 76% to 100%

b. Code the average **fluid intake** per day by IV or tube in **last 7 days**

0. None
1. 1 to 500 cc/day
2. 501 to 1000 cc/day
3. 1001 to 1500 cc/day
4. 1501 to 2000 cc/day
5. 2001 or more cc/day

M1. ULCERS (Due to any cause) *(Record the number of ulcers at each ulcer stage—regardless of cause. If none present at a stage, record "0" (zero). Code all that apply during **last 7 days**. Code 9 = 9 or more.) **[Requires full body exam.]***

Number at Stage

a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved.

b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater.

c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues - presents as a deep crater with or without undermining adjacent tissue.

d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle or bone.

M2. TYPE OF ULCER *(For each type of ulcer, code for the highest stage in the last 7 days using scale in item M1—i.e., 0=none; stages 1, 2, 3, 4)*

a. Pressure ulcer—any lesion caused by pressure resulting in damage of underlying tissue

b. Stasis ulcer—open lesion caused by poor circulation in the lower extremities

M3. HISTORY OF RESOLVED ULCERS Resident had an ulcer that was resolved or cured **in LAST 90 DAYS**

0. No 1. Yes

M4. OTHER SKIN PROBLEMS OR LESIONS PRESENT *(Check all that apply during last 7 days)*

a. Abrasions, bruises

b. Burns (second or third degree)

c. Open lesions other than ulcers, rashes, cuts (e.g., cancer lesions)

d. Rashes—e.g., intertrigo, eczema, drug rash, heat rash, herpes zoster

e. Skin desensitized to pain or pressure

f. Skin tears or cuts (other than surgery)

g. Surgical wounds

h. *NONE OF ABOVE*

M5. SKIN TREATMENTS *(Check all that apply during last 7 days)*

a. Pressure relieving device(s) for chair

b. Pressure relieving device(s) for bed

c. Turning/repositioning program

d. Nutrition or hydration intervention to manage skin problems

e. Ulcer care

f. Surgical wound care

g. Application of dressings (with or without topical medications) other than to feet

h. Application of ointments/medications (other than to feet)

i. Other preventative or protective skin care (other than to feet)

j. *NONE OF ABOVE*

M6. FOOT PROBLEMS AND CARE *(Check all that apply during last 7 days)*

a. Resident has one or more foot problems—e.g., corns, callouses, bunions, hammer toes, overlapping toes, pain, structural problems

b. Infection of the foot—e.g., cellulitis, purulent drainage

c. Open lesions on the foot

d. Nails/calluses trimmed during **last 90 days**

e. Received preventative or protective foot care (e.g., used special shoes, inserts, pads, toe separators)

f. Application of dressings (with or without topical medications)

g. *NONE OF ABOVE*

N1. TIME AWAKE *(Check appropriate time periods over last 7 days)*

Resident awake all or most of time (i.e., naps no more than one hour per time period) in the:

a. Morning

b. Afternoon

c. Evening

d. *NONE OF ABOVE*

(If resident is comatose, skip to Section O)

N2. AVERAGE TIME INVOLVED IN ACTIVITIES *(When awake and not receiving treatments or ADL care)*

0. Most—more than 2/3 of time
1. Some—from 1/3 to 2/3 of time
2. Little—less than 1/3 of time
3. None

O1. NUMBER OF MEDICATIONS *(Record the number of different medications used in the last 7 days; enter "0" if none used)*

O3. INJECTIONS *(Record the number of DAYS injections of any type received during the last 7 days; enter "0" if none used)*

O4. DAYS RECEIVED THE FOLLOWING MEDICATION *(Record the number of DAYS during last 7 days; enter "0" if not used. Note—enter "1" for long-acting meds used less than weekly)*

a. Antipsychotic

b. Antianxiety

c. Antidepressant

d. Hypnotic

e. Diuretic

P1. SPECIAL TREATMENTS, PROCEDURES, AND PROGRAMS

a. **SPECIAL CARE**—*Check treatments or programs received during the last 14 days*

TREATMENTS

a. Chemotherapy
b. Dialysis
c. IV medication
d. Intake/output
e. Monitoring acute medical condition
f. Ostomy care
g. Oxygen therapy
h. Radiation
i. Suctioning
j. Tracheostomy care
k. Transfusions
l. Ventilator or respirator

PROGRAMS

m. Alcohol/drug treatment program
n. Alzheimer's/dementia special care unit
o. Hospice care
p. Pediatric unit
q. Respite care
r. Training in skills required to return to the community (e.g., taking medications, house work, shopping, transportation, ADLs)
s. *NONE OF THE ABOVE*

Resident Identifier _____ Numeric Identifier _____

P1. SPECIAL TREATMENTS, PROCEDURES, AND PROGRAMS

b. **THERAPIES** - *Record the number of days and total minutes each of the following therapies was administered (for at least 15 minutes a day) in the* ***last 7 calendar days*** *(Enter 0 if none or less than 15 min. daily)*
[Note — count only post admission therapies]
(A) = **# of days** administered for **15 minutes or more**
(B) = **total # of minutes** provided in **last 7 days**

	DAYS (A)	MIN (B)
a. Speech - language pathology and audiology services		
b. Occupational therapy		
c. Physical therapy		
d. Respiratory therapy		
e. Psychological therapy (by any licensed mental health professional)		

P3. NURSING REHABILITATION/ RESTORATIVE CARE

Record the NUMBER OF DAYS each of the following rehabilitation or restorative techniques or practices was ***provided to the residents for more than or equal to 15 minutes per day in the last 7 days*** *(ENTER 0 if none or less than 15 min. daily.)*

a. Range of motion (passive)		f. Walking	
b. Range of motion (active)		g. Dressing or grooming	
c. Splint or brace assistance		h. Eating or swallowing	
TRAINING AND SKILL PRACTICE IN:		i. Amputation/prosthesis care	
d. Bed mobility		j. Communication	
e. Transfer		k. Other	

P4. DEVICES AND RESTRAINTS

Use the following codes for ***last 7 days:***
0. Not used
1. Used less than daily
2. Used daily

Bed rails
a. —Full bed rails on all open sides of bed
b. —Other types of side rails used (e.g., half rail, one side)
c. Trunk restraint
d. Limb restraint
e. Chair prevents rising

P7. PHYSICIAN VISITS

In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) examined the resident? *(Enter 0 if none)*

P8. PHYSICIAN ORDERS

In the **LAST 14 DAYS** (or since admission if less than 14 days in facility) how many days has the physician (or authorized assistant or practitioner) changed the resident's orders? *Do not include order renewals without change. (Enter 0 if none)*

Q1. DISCHARGE POTENTIAL

a. Resident expresses/indicates preference to return to the community
0. No 1. Yes

c. Stay projected to be of a short duration—discharge projected **within 90 days** (do not include expected discharge due to death)
0. No 2. Within 31-90 days
1. Within 30 days 3. Discharge status uncertain

Q2. OVERALL CHANGE IN CARE NEEDS

Resident's overall level of self sufficiency has changed significantly as compared to status of **90 days ago** (or since last assessment if less than 90 days)
0. No change 1. Improved—receives fewer supports, needs less restrictive level of care 2. Deteriorated—receives more support

R2. SIGNATURE OF PERSON COORDINATING THE ASSESSMENT:

a. Signature of RN Assessment Coordinator (sign on above line)
b. Date RN Assessment Coordinator signed as complete Month ___ Day ___ Year ____

T1. SPECIAL TREATMENTS AND PROCEDURES

Skip unless this is a Medicare 5 day or Medicare readmission/return assessment

b. **ORDERED THERAPIES**—*Has physician ordered any of the following therapies to begin in FIRST 14 days of stay—physical therapy, occupational therapy, or speech pathology service?*
0. No 1. Yes

c. Through day15, provide an estimate of the number of days when at least 1 therapy service can be expected to have been delivered.

d. Through day15, provide an estimate of the number of therapy minutes (across the therapies) that can be expected to be delivered.

T3. CASE MIX GROUP

Medicare _____ State _____

Resident _____ Numeric Identifier _____

MINIMUM DATA SET (MDS) - *VERSION 2.0*

FOR NURSING HOME RESIDENT ASSESSMENT AND CARE SCREENING

SECTION W. SUPPLEMENTAL MDS ITEMS

1.	National Provider ID	Enter for all assessments and tracking forms, if available. ☐☐☐☐☐☐☐☐☐☐	
If the ARD of this assessment or the discharge date of this discharge tracking form is between July 1 and September 30, skip to W3.			
2.	Influenza Vaccine	a. Did the resident receive the influenza vaccine in this facility for this year's influenza season (October 1 through March 31)? 0. No (If No, go to item W2b) 1. Yes (If Yes, go to item W3) b. If influenza vaccine not received, state reason: 1. Not in facility during this year's flu season 2. Received outside of this facility 3. Not eligible 4. Offered and declined 5. Not offered 6. Inability to obtain vaccine	
3.	Pneumo-coccal Vaccine	a. Is the resident's PPV status up to date? 0. No (If No, go to item W3b) 1. Yes (If Yes, skip item W3b) b. If PPV not received, state reason: 1. Not eligible 2. Offered and declined 3. Not offered	

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