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Nursing Outcomes Classification: a cross-link to assign nursing home recertification survey severity scores

Elaine K. Cook
University of Iowa

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NURSING OUTCOMES CLASSIFICATION:
A CROSS-LINK TO ASSIGN NURSING HOME RECERTIFICATION
SURVEY SEVERITY SCORES

by
Elaine K. Cook

An Abstract

Of a thesis submitted in partial fulfillment of the requirements
for the Doctor of Philosophy degree in Nursing
in the Graduate College of The University of Iowa

May 2012

Thesis Supervisor: Associate Professor Elizabeth A. Swanson

ABSTRACT

In 2009, the Government Accountability Office reported that 15% of federal nursing home (NH) recertification surveys nationwide and 25% of surveys in nine states underscored serious deficiencies in nursing care provided to 1.5 million residents residing in NHs. The state nursing home survey agencies' surveyors attributed the Centers for Medicare and Medicaid Services (CMS) administrative rules and the documents in the surveyor guidance manual as too complex and ambiguous to correctly assign deficiency severity scores. In review of nursing literature, it was noted that standardized nursing language can increase the clarity of complex systems. The premise of this exploratory study was to determine if the standardized language of the Nursing Outcomes Classification (NOC) could provide a cross-linkage of the CMS rules, indicators of substandard nursing care, and the full guidance manual used to assign deficiency severity scores. The study attempted to achieve this goal by aligning select NOC outcomes and indicators with nursing outcomes indicators in the CMS administrative rules, select documents in the surveyor guidance manual, and select documents in the Quality Indicator Survey. The data analysis suggested the relationship of the origin of the CMS rule and documents to the degree of alignment with the select NOC outcomes and indicators. It was also found that the intent of the CMS rule and select documents shared common themes. In addition, the data analysis revealed that the CMS rule and select documents aligned in various degrees with all of the selected NOC outcomes and respective indicators. The data analysis confirmed that there is sufficient evidence of a degree of alignment of select NOCs with the CMS rule and documents in the guidance manual for activities of daily living and functional status. Furthermore, the data analysis confirmed that this body of work can be a baseline for future research to develop a NOC specific to NHs as a viable cross-link to the CMS rules and guidance manual.

Abstract Approved: _____

Thesis Supervisor

Title and Department

Date

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for the Doctor of Philosophy degree in Nursing
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May 2012

Thesis Supervisor: Associate Professor Elizabeth A. Swanson

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph.D. thesis of

Elaine K. Cook

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Nursing at the May 2012 graduation.

Thesis Committee:

Elizabeth A. Swanson, Thesis Supervisor

Toni Tripp-Reimer

Kathleen C. Buckwalter

Janet K. Specht

Lelia B. Helms

To My Hero

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CHAPTER 1
NURSING OUTCOMES CLASSIFICATION: A CROSS-LINK
TO ASSIGN NURSING HOME RECERTIFICATION SURVEY
SEVERITY SCORES

Introduction

The U.S. Government Accountability Office (U.S. Government Accountability Office [GAO], 2008), at the request of Senator Herb Kohl, chairman of the Special Committee on Aging in the U.S. Senate; and Senator Charles Grassley, ranking member of the Committee on Finance of the U.S. Senate, conducted a study to evaluate the efficiency of the nursing home (NH) recertification survey process. (See Appendix A for a list of abbreviations used in the current study.) The GAO found that 15% of federal NH recertification surveys nationwide and 25% of surveys in nine states underscored serious deficiencies in nursing care provided to 1.5 million residents residing in nursing homes. In a self-reporting questionnaire of state nursing home survey agencies' (SNHSA) surveyors and administrators, the respondents attributed the Centers for Medicare and Medicaid Services (CMS) administrative rules, surveyor guidance manual, and investigative protocols as too complex and ambiguous to correctly assign deficiency severity scores (U.S. GAO, 2009a). As an example, the SNHSA surveyors referenced two CMS rules totaling more than 50 pages (U.S. GAO, 2009a). Furthermore, 44% of SNHSA directors attributed understatement of NH deficiencies to the inadequately defined and clarified indicators of actual resident harm that could be avoided with improved investigative protocols.

The purpose of CMS administrative rules is to establish outcome indicators that define minimum standards of nursing care in NHs, to delineate instructions for recertification survey investigations, and to enforce sanctions for substandard nursing practice. Although this is the designated purpose of the rules, a problem exists in determining substandard nursing care and assigning deficiency severity scores accurately

(U.S. GAO, 2009a). The SNHSA nurse surveyors and administrators reported that the difficulty in assigning severity scores accurately was due to the lack of clarity of the outcome indicators within the CMS rules (U.S. GAO, 2009b). This lack of clearly defined and measurable resident responses to nursing care reduces the usability of the CMS rules and fosters discrepancy in the understanding of the deficiency severity score guidelines. Without reliable indicators of the outcome of nursing care, the SNHSA surveyors must rely on their own gerontological nursing knowledge, nursing experience, and critical analysis to assign severity scores accurately. Also, without standardized indicators of the outcome of nursing care, SNHSA surveyor ideology and cultural expectations may inappropriately influence the significance of a resident's response to nursing care and the severity of a CMS rule violation. The lack of standardized and measurable indicators of a resident's response to nursing care, the variability in the expertise of SNHSA nurse surveyors, and the effects of personal perspectives reduce the trustworthiness of deficiency severity scores.

To further complicate the difficulty in assigning deficiency scores accurately, the NH industry influences the decision-making process of the SNHSA nurse surveyors (U.S. GAO, 2009a). According to persons within the NH industry, resident preferences, acute illness and chronic disease processes, autonomy, and a resident's freedom of choice create unexpected variables beyond the scope of NH(s) to predict, avoid, or correct (Lett, 2006). According to these NH professionals, the goal of nursing care is not only to comply with state and federal rules, but also to implement policies, procedures, and protocols to deliver the highest quality of care while reducing the risk of unexpected and unavoidable negative resident outcomes that are beyond the control of nursing practice (Lett, 2006).

Accurately assigning severity scores is critical to declaring a NH's satisfactory compliance with CMS rules. In an effort to increase the transparency of government agencies, the results of NH recertification surveys are publicized in a NH report card on

the CMS website. Public announcement of the performance of a NH recertification survey may help older Americans explore senior living options. The deficiency severity scores may impede or enhance their ability to attract new residents (Lett, 2006). From the perspective of the NHs, publically announcing the recertification survey results increases the importance of deficiency severity scores accuracy.

Efforts by NHs to achieve satisfactory recertification scores may influence nursing practice and shift nursing care away from the primary mission of resident care. The NH administrators may place undue pressure on or establish unrealistic nursing staff performance expectations (Fleming & Kayser-Jones, 2008). In addition, the pressures of achieving a positive recertification survey could negatively impact the administrator's and nursing director's relationship, lead to administrator micromanagement, or undermine the nursing director's responsibility and authority (Fleming & Kayser-Jones, 2008). These pressures set the tone for poor resident care, low staff morale, and turnover among staff, NH administrators, and directors of nursing (Fleming & Kayser-Jones, 2008).

When SNHSA nurse surveyors assign a deficiency score for substandard nursing practice, the goal of the NH is to limit punishment, such as civil money penalties, or administrative sanctions, such as the loss of nursing assistant education privileges (American Health Care Association, 2010). In an effort to protect limited resources, NH administrators frequently elect to undertake the expensive and time-consuming task of challenging recertification survey deficiencies. These challenges are referred into the Informal Dispute Resolution (IDR) and Formal Dispute Resolution (FDR) process, which ensures that a NH has the opportunity to present supporting information to defend its contention of compliance. The NH can petition for the reduction, revision, or revocation of a deficiency or penalty. But in reality, the NH's nursing directors believe that contesting sanctions through the dispute resolution process can divert limited resources away from resident care and shift financial resources toward obtaining or purchasing an

acceptable deficiency severity score (Fleming & Kayser-Jones, 2008). They also contend that using funds to argue a deficiency reduces monies that could be invested in improving resident care, purchasing new equipment, or offering staff retention programs.

The SNHSA nurse surveyors agreed that the IDR and FDR divert limited resources away from the intent of the recertification survey (U.S. GAO, 2009a). They believe that the IDR and the FDR add excessive burdens to their workload and that this further complicates the accuracy in assigning deficiency scores. In the GAO report, the SNHSA directors and surveyors expressed concern about pressure from NH stakeholders, such as the NH industry, state and federal legislators, and a biased IDR process that favors the NHs (U.S. GAO, 2009a). These external influences discourage SNHSA nurse surveyors from citing deficiencies accurately and promote severity score down-staging.

Deficiency citation and severity score assignment accuracy to avoid IDR and FDR depend on the clarity and usability of the CMS rules and the survey score assignment evidence collection tools of the surveyor guidance manual (U.S. GAO, 2009a). The surveyor guidance manual instructs surveyors to collect resident information stored in the Minimum Data Set 3.0 (MDS 3.0) and the Critical Elements Pathways (CEP), an evaluation tool used in the Quality Indicator Survey (QIS). Data collected in the MDS 3.0 and the CEP are the product of a complex network of adaptive systems that involve nonlinear interactive components and feedback loops in human and artificial intelligence computer programs that may lead to unexpected outcomes (Clancy, 2004). Computer transmission and analysis of massive amounts of NH resident information created in the MDS 3.0 and the CEP inherently contribute to the potential for error (Zimmerman, Lindberg, & Plesek, 1998).

The origin of the CMS rules, the MDS 3.0, and the CEP may also contribute to the lack of clarity and reduced usability of the deficiency evidence collection tools. The CMS rules are statements of general policy or interpretations of general applicability formulated and adopted by a federal agency (5 U.S.C. Subchapter 11, §552.1[D]). The

CMS further clarifies the rules in the definitions of the intent of the rule, the interpretative guidelines, and the procedures in the guidance to surveyor manual (CMS, 2010). For the purposes of this body of work the definition of the CMS rules will incorporate the Federal rule §483.25, the intent, interpretive guidelines and the procedures in the guidance to surveyor manual. The MDS 3.0 is a resident assessment tool created by the CMS to identify potential or actual resident problems, resident strengths, and resident preferences (CMS, 2010a). The CEP is a critical thinking tool to assist SNHSA nurse surveyors to collect resident information to determine minimum compliance with CMS rules and to assign deficiency severity scores (Kramer, 2008). An inconsistent nursing presence in the development teams that created the CMS rules, the MDS 3.0, and the CEP may have resulted in non-specific data that are not relevant or helpful to nursing practice, which ultimately may amplify the complexity in accurately assigning severity scores.

Endorsement to simplify the deficiency severity score assignment process has been approved, according to Acting Administrator for the CMS, Charlene Frezzera (U.S. GAO, 2009a). She agreed with the GAO regarding the need to create a reference between the CMS rules and the indicators of substandard nursing care as a cross-link to the full survey guidance manual (U.S. GAO, 2009a). The intent of this body of work is to explore whether the nursing practice outcomes defined in the Nursing Outcomes Classification (NOC) are able to provide the standardized means to evaluate and quantify the status of a resident (Moorhead, Johnson, Maas, & Swanson, 2008) and, thus, to possibly provide the cross-link between nursing practice and increase severity score assignment accuracy.

Using standardized nursing indicators to assign a severity score accurately may reduce the lack of clarity and increase the usability of the CMS rules, the MDS 3.0, and the CEP. The standardized nursing outcome indicators of the NOC measure and define resident outcomes that reflect variations in a patient population based on resident

characteristics that cannot be changed (Moorhead et al., 2008). Incorporating the NOC outcomes and the respective indicators in the severity score assignment process may more effectively satisfy both the SNHSA surveyor's and the NH professional's expectations of nursing practice. In addition, use of the NOC may significantly increase an SNHSA surveyor's ability to recognize a resident's response to nursing care, to correctly pinpoint residents at the highest risk (Kautz, 2008), or to clearly describe changes in resident health and psychosocial well-being (Müller-Staub, 2009). The NOC outcomes and the respective indicators may be a link to the CMS deficiency citation process, to the outcome of nursing care, and to evidence-based nursing practice (Clancy, 2006). Eliminating both the barriers that discourage SNHSA nurse surveyors from assigning deficiency scores accurately and the problem of nursing practice that is motivated by the need for acceptable recertification survey results may be accomplished through the standardization of nursing outcomes and indicators in the NOC.

Problem Statement

The lack of clarity of the CMS deficiency severity score assignment process reduces the usability of the CMS rules and evidence collection tools designed to assign severity scores accurately. This lack of clarity and reduced usability have led to inconsistency in assignment of severity scores (U.S. GAO, 2009a), resulting in dissension between the perspectives of nursing care in NHs. Discrepancy in the accuracy of the SNHSA deficiency severity scores can create situations in which NHs feel they need to resolve their differences through the IDR and FDR, resulting in reduced resources for resident care.

Purpose of the Study

Very limited published research has investigated how accuracy of the recertification survey deficiency severity score influences nursing practice. The intent of this exploratory study was to determine if the NOC outcomes and respective indicators could provide a solution to increase the clarity and the usability of the CMS rules, the

MDS 3.0, and the CEP to determine deficiency severity scores accurately. The study attempted to achieve this goal by aligning NOC outcomes and indicators with nursing outcomes indicators in the CMS rules, the MDS 3.0, and the CEP. The purpose of this exploratory study was to provide a baseline for future research to develop a NOC specific to nursing care in NHs for the end purpose of reducing the use of IDR and FDR severity score dispute resolution processes.

Research Aims

The specific aims of this study were to determine:

1. The degree of alignment of NOC outcomes and indicators with the outcomes and indicators in the CMS F-Tag 310 rule for activities of daily living-functional status.
2. The degree of alignment of NOC outcomes and indicators with the outcomes and indicators in Section G of the MDS 3.0 Resident Assessment Instrument User Guide for activities of daily living-functional status.
3. The degree of alignment of NOC outcomes and indicators with the outcomes and indicators in the CEP for Activities of Daily Living and Range of Motion.

Significance of the Study

To better understand the complexity of this phenomenon and if the NOC is a viable solution to the problem, the following discussion will describe the issues surrounding the difficulty in assigning deficiency scores accurately and the format of a CMS rule. The discussion will then address how NOC may be a viable solution.

Issues Surrounding Assignment of Severity Scores

The need for increased accuracy in the severity score assignment is stimulated by two perspectives that foster discord within the NH industry. Professionals within the NH industry defend the quality of nursing care by explaining how the complexity of multiple chronic illnesses and resident choices may influence their ability to predict and coordinate nursing care to prevent negative events. In contrast, another ideology of NH

compliance supports regulatory oversight or avoidance of sanctions for noncompliance to shape behaviors into compliance (Stevenson, 2005, 2006). This ideology entrusts government agencies to ensure the quality and safety of resident care through deficiency citation and sanctions in annual recertification surveys and complaint investigations.

The belief in the lack of clarity and the probability of errors in a deficiency severity score encourages NHs to undertake the expensive and time-consuming task of challenging deficiencies in the IDR and FDR. In the IDR and FDR, a NH has the opportunity to present supporting information to defend their contention of compliance and petition the administrative law judge (ALJ) for the reduction, revision, or revocation of a deficiency or penalty.

In this clash in perspectives, the public, NH residents and their families, special interest groups, and health care professionals rely on the recertification survey process to ensure their safety and well-being (Stevenson, 2005, 2006). To improve the quality of nursing care in NHs, consumers rely on the accuracy of deficiency severity scores to motivate improvements in nursing care to avoid sanctions. Reliance on the CMS severity assignment process to improve the quality of care, however, may have an unexpected and profound impact on the delivery of nursing practice.

Directing nursing practice by focusing on the importance of regulatory compliance may constrain leadership effectiveness and shift NH culture away from resident-centered care (Fleming & Kayser-Jones, 2008). Research suggests that the quality of nursing care improves when residents are the primary focus of nursing activity (Fleming & Kayser-Jones, 2008). Imposing sanctions as a means of mandating compliance may be counterintuitive to individualized care, innovation, and quality improvement (Lett, 2006). Also, when the outcome of a recertification survey prevails as the primary motivator in directing resident care, NH administrators may be more likely to pursue dispute resolution to ensure an acceptable deficiency severity score.

The SNHSA nurse surveyors admit to being reluctant to cite specific deficiencies and to assign high severity scores (U.S. GAO, 2009b). They also vocalize concern about the frequency of deficiency severity score reductions or deficiency retractions during the dispute resolution process (U.S. GAO, 2009b). The SNHSA nurse surveyors believe that the unclear CMS severity score assignment process, the lack of clarity in the evidence collection tools, and the subsequent defense of their severity score decision through the dispute resolution process place excessive demands on their work load. The SNHSA nurse surveyors also express concerns about how ambiguity in the severity score guidelines may unnecessarily accelerate the conflict within the NH industry (U.S. GAO, 2009a). Twenty percent of SNHSA nurse surveyors claim that their state agency either did not cite certain deficiencies or did not cite deficiencies above a certain severity. Moreover, the SNHSAs indicate that the ambiguous nature of current CMS guidance manuals and rules leads to frequent SNHSA supervisor understatement or removal of deficiencies during post-survey reviews (U.S. GAO, 2009a).

CMS Rules

The CMS rules are the foundation of the recertification survey and the deficiency citation and severity score assignment process. The rules are published in a guidance manual, “The Long Term Care Survey Manual” (LTCSM), which categorizes these expectations according to regulatory concepts. Each regulatory concept is assigned an F-Tag label. Within an F-Tag, the CMS cites the Federal legislation authorizing the rule, the interpretive guidelines that clarify and define the intent of the rule, the procedures for investigation, and the probes that guide the decision-making process for assignment of deficiency severity scores. The CMS includes additional severity score guidelines in the Long Term Care Enforcement Procedures (LTCEP) manual.

Severity Score Assignment Process

This discussion begins when an SNHSA surveyor has established evidence of substandard nursing care. The SNHSA surveyor next answers the questions in the F-Tag

procedures and probes to determine if the NH successfully completed the suggested tasks. In addition to direct observation and interviews with residents, resident families, and staff, the SNHSA surveyor also uses the evidence collected in the MDS 3.0 to evaluate the resident-specific information to establish the extent of the substandard nursing care. States participating in the Quality Indicator Survey Pilot test add the CEP as an additional layer of investigation. Following the procedures and probes guidelines in the LTCSM, an SNHSA surveyor assigns the severity score.

In situations when the collected data do not give sufficient information to assign a deficiency severity score accurately, the LTCEP manual instructs SNHSA nurse surveyors to enact the “Reasonable Person Concept” when indicated (Centers for Medicare and Medicaid Services, 2010b). The SNHSA nurse surveyors are instructed to implement this clause when a resident’s psychosocial outcome cannot be readily determined through the investigative process or when a resident’s reaction to a deficient practice is markedly incongruent with the level of reaction that a reasonable person would have to the deficient practice (CMS, 2010b). The “Reasonable Person Concept” instructs SNHSA nurse surveyors to determine what degree of actual or potential harm someone would expect a reasonable person in a similar situation to suffer as a result of the noncompliance. The CMS includes examples of circumstances where the Reasonable Person Clause may be activated, but justification to implement this clause is not limited to the circumstances cited in the instructions. The instructions grant authority to SNHSA surveyors to initiate this clause at their discretion. The “Reasonable Person Concept” may increase the probability of applying inappropriate personal biases, prejudiced beliefs, a lack of cultural sensitivity and respect for a personal philosophy, or a plethora of other human variables into the decision-making process that could influence a severity score.

The SNHSA nurse surveyors evaluate the collected data and assign a severity score. To support the SNHSA surveyor severity score decision making, the SNHSA surveyors complete The Surveyor Notes Worksheet. The Surveyor Notes Worksheet is a

narrative summary of resident data that links evidence of substandard nursing care to a CMS rule. The SNHSA administrative office assigns the final severity score using the data collected through the MDS 3.0, the RAI-UG, and the CEP as recorded in the Surveyor Notes Worksheet. Since the administrative office does not have direct access to residents or to the clinical environment, the accuracy of a severity score relies on the ability of SNHSA nurse surveyors to communicate their findings and provide supporting documentation in the Surveyor Notes Worksheet.

The SNHSA surveyors recommend a severity score to the SNHSA administrative office surveyors for final assignment of the severity scores according to the actual or potential risk for resident harm. To communicate the actual or potential risk for resident harm, the CMS created a taxonomy of severity score levels.

Level 1- no actual harm with potential for minimal harm;

Level 2- no actual harm with potential for more than minimal harm that is not immediate jeopardy;

Level 3- actual harm that is not immediate jeopardy;

Level 4- immediate jeopardy to resident health or safety and immediate corrective action is necessary because it caused, or is likely to cause, serious injury, harm, impairment, or death.

The severity scores align with sanctions ranging from civil money penalties, denial of privileges, or temporary management (CMS, 2010b)

A portion of the difficulty in assigning severity scores accurately is in the lack of clarity and the problem of ambiguity in the instructions for the F-Tag procedures and probes. For example, the F-Tag probe for Activities of Daily Living (F-310) asks the SNHSA surveyor to provide evidence that a resident could have improved if appropriate treatment and services were provided, to determine if a decline in a resident's condition is unavoidable, and to explore if a resident(s) received care to address risk factors and unique needs to maintain function (The Centers for Medicare and Medicaid Services

[CMS], 2010). The probes also ask the SNHSA surveyor to measure resident behavior(s) prior to and after receiving nursing care.

The Herculean task of correctly interpreting and applying the CMS instructions is more difficult to complete without benchmarks to define the terms of (a) improve, (b) decline, (c) appropriate, (d) unavoidable, and (e) unique needs to maintain function. The CMS relies on the gerontological nursing knowledge, nursing experience, and critical thinking skills of the SNHSA surveyors to define and apply benchmarks appropriate to each resident's condition. Incorporating the NOC as a linkage to the severity score assignment guideline, the SNHSA surveyor could use the NOC outcomes and respective indicators as a guide. For example, a resident has unilateral weakness from a cerebral vascular accident 5 years prior to admission into a NH. This resident ambulates with a walker. Using the NOC in this example, the SNHSA surveyor could use the indicators in the 0208 Mobility (0208) and 0212 Coordinated Movement NOC outcomes (Moorhead et al. 2008) as benchmarks to determine evidence of a decline in this resident's ability to ambulate.

Usability of the NOC

The components of the NOC outcomes, the indicators, and the Likert-type scale to quantify a resident's response to nursing care makes the NOC a viable option to become a cross-link for the CMS rules, the resident response to nursing care, and the surveyor guidance manual to assign severity scores. Also, simplicity of the rating scale serves the dual purpose of accurately identifying and calculating a resident's response to nursing care and serving as an effective communication tool for SNHSA surveyors to convey the severity of substandard nursing care.

The straightforwardness of NOC outcomes and the respective indicators could allow SNHSA surveyors the flexibility to evaluate the outcome of nursing care at any time during the recertification survey process with minimal addition to their workload. The NOC takes minutes to complete and the rating scale clearly communicates the

evaluator's opinion of the status of a resident's health. The NOC also allows SNHSA surveyors to complete only the outcomes that are relevant to specific issues or concerns, thus effectively evaluating the status or changes unique to each resident's health and well-being. As a comparison, a resident's response to nursing care can be easily replicated by other nurses. In addition, the NOC outcome, the indicators, and the rating scale could be a useful SNHSA nurse surveyor documentation tool. For example, a NOC may be completed at the initial identification of a problem and repeated at periodic times throughout the recertification survey. The completed NOCs may be a SNHSA surveyor team discussion tool to define and measure the specific resident's response to substandard nursing care. Using the NOC indicators measurement scale as a discussion guide to evaluate a resident's condition may mean the difference in a severity score of the potential (not yet realized) risk of harm (Level 1 severity score) and assignment of a negative outcome that has compromised a residents' ability to reach his/her highest practicable physical, mental, and psychosocial well-being (Level 4 severity score).

Incorporating NOC into the severity score assignment process may increase severity score accuracy by minimizing the gaps in gerontological nursing knowledge, nursing experience, and critical thinking skills of the SNHSA surveyors. Determining the effectiveness of individualizing nursing care intended to satisfy the multiple health concerns and personal preferences of each resident living in a NH can be very complex. A NOC specific to NHs may be a helpful reminder the SNHSA surveyors of all possible indicators of a resident's response to nursing care and reduce reliance on memory, previous experiences in similar situations, or the availability of gerontological nursing literature. Using the NOC to assign a deficiency score may be as simple as evaluating the relationship between the relevant NOC indicators according to the rating scale and the care plan goal statement. Also, the process of rating a resident's response to nursing care according to the NOC indicators may more clearly identify the key areas of concern.

Conclusion

Accurately identifying key areas of resident concern may also increase the accuracy and significantly improve the reliability, validity, and reproducibility of the deficiency severity scores. To this end, incorporating the NOC as a standardized measurement of the outcome of nursing care could reduce NHs appeal for dispute resolution. Incorporating the NOC into the SNHSA survey report, as a standardized language of the outcome of nursing care, may better communicate to nurses working in NHs the expectations of nursing care as defined by the CMS in the administrative rules. The NOC, as a shared standardized language, has the potential to more clearly communicate SNHSA surveyor findings that may shift the NH culture away from a defensive posture into a culture more focused on resident-centered care.

It may be possible to eliminate both the barriers that discourage SNHSA from accurately assigning deficiency severity scores and the problem of nursing care being motivated by the need for acceptable recertification survey scores through the NOC. The incorporation of the NOC as a standardized language to communicate the resident response to nursing care as well as its use as a critical thinking tool for assigning severity scores may be a viable solution to successfully reverse the complexity of the CMS deficiency citation process.

Overview of Research Methods

This study proposed to determine the alignment of selected NOC outcomes and respective indicators with the nursing outcome indicators in the CMS F-Tag 310 rule, the MDS 3.0, and the CEP for activities of daily living-functional status. Analyses of the documents ranked the alignment as (a) an exact word alignment with the NOC, (b) intent alignment with the selected NOC, and (c) no word or intent alignment with NOC. Completion of an analysis using NVivo 9 determined the degree of alignment and gaps in the NOC outcomes and respective indicators with the outcome indicators in the text items of the CMS F-Tag 310 rule, the MDS, and the CEP.

Definition of Terms

Administrative Rules: Administrative rules are the CMS delineation of the meaning of Congressional legislation for NH care (Public Law 100-203. 42 CFR, Subpart B).

CMS Evidence Collection Tools: The CMS evidence collection tools used in this study are the MDS 3.0 and the CEP.

Critical Elements Pathway: The CEP is an SNHSA surveyor investigation instrument used to evaluate resident care during the QIS to assist in assigning a deficiency score assignment decision-making process.

Deficiency Citation Process: The deficiency citation process is the evaluation of substandard nursing care to determine potential or actual physical, mental, or psychosocial injury to or deterioration of a resident, including violation of the resident's rights or lack of (or the potential for lack of) reaching the highest practicable level of physical, mental, or psychosocial well-being (CMS, 2010a).

Formal Dispute Resolution: Formal dispute resolution is the process where a NH may appeal deficiencies and enforcement actions before the Department of Health and Human Services Department of Appeals Board, Civil Remedies Division adjudicates the claim.

Informal Dispute Resolution: Informal dispute resolution is the process where a NH challenges the accuracy of a deficiency citation or severity score in an informal setting. SNHSA staff not directly involved in the survey will determine the accuracy of factual survey findings, through adjudication or mediation that may result in the elimination, modification, or no change to a deficiency citation score. Upon request, the NH may request IDR through another federal agency for adjudication or mediation.

Minimum Data Set 3.0: The MDS 3.0 is an interdisciplinary assessment instrument, mandated by CMS for use in all certified NHs, to identify potential or actual

problems, strengths, and resident preferences to assist NH staff to generate an individualized plan of care (CMS 2010).

Nursing Outcomes Classification: The NOC is a standardized terminology for nursing-sensitive outcomes to assist nurses to evaluate and quantify patient status after interventions and to monitor progress (Moorhead et al., 2008).

Nursing Outcomes Classification (NOC) Outcome: A NOC outcome is a standardized terminology that describes a nursing concept that reflects a patient, caregiver, family, or community actual state, perception, or behavior (Moorhead et al., 2008).

Nursing Outcomes Classification Indicator: A NOC indicator is a nursing-sensitive, non-evaluative, standardized terminology to describe a specific patient state that is most sensitive to nursing interventions and for which measurement procedures can be defined (Moorhead et al., 2008).

Quality Indicator Survey: The QIS is an artificial intelligence computer-supported recertification survey process for deficiency identification and assigning severity scores using larger, more diverse NH resident samples (Kramer, 2008).

Resident Assessment Instrument: The RAI is composed of three sections of the MDS 3.0, the Care Areas Assessment, and the Utilization Guide.

Resident Assessment Instrument Utilization Guide: The RAI-UG is a manual containing instructions for completing the MDS 3.0 nursing assessment instrument.

Severity Score: The severity score is a measure of the seriousness of substandard nursing care in relation to a resident(s) health and well-being (CMS, 2010a).

Surveyor Guidance Manual: The Surveyor Guidance Manual, also called the Long Term Care Survey manual (LTCSM), is the recertification survey instruction guide for SNHSA nurse surveyors.

Assumptions of the Study

1. There are always a number of meanings in text analysis that involve a degree of interpretation.
2. There is no assumption that the frequency of use of specific words, sentence fragments, or sentences in the CMS F-Tag 310 rule, the MDS 3.0, or the CEP is an indication of the importance of the text. The frequency of text use will be a benchmark for future research projects.
3. The researcher recognizes the NOC as a standard nursing language for comparison with the CMS F-Tag 310 rule, the MDS 3.0, and the CEP.
4. The researcher recognizes that the CMS rules, the RAI-UG, and the CEP have a logical basis and grounding that endorses their use in this study.
5. The CMS rules, the MDS 3.0, and the CEP are the product of separate independent interdisciplinary teams of health care professionals, and, as a result, are written in a complex language that reflects the viewpoint of experts from multiple health care professions.

Conclusion

The consequences of underestimating the severity of a deficiency impact both the SNHSA and the NH. From the perspective of NHs, inaccurate assignment of severity scores may mar the reputation of a NH or deter or increase new admissions. The lack of standardized indicators for determining the severity of substandard nursing care can stimulate an antagonistic relationship between the SNHSA and the NHs that may increase the desire of NHs to undertake the expensive dispute resolution process. In addition, this antagonistic relationship could influence nursing care by focusing on the importance of regulatory compliance, divert the NH culture away from resident care, and constrain nursing leadership effectiveness (Fleming & Kayser-Jones, 2008). In an effort to understand the difficulty in correctly interpreting CMS recertification survey rules and evidence collection tools, this study explored the NOC outcome and indicator alignment

with the F-Tag 310 CMS recertification survey rule, the MDS 3.0 assessment tool, and the CEP.

The next chapter, using a framework designed specifically for this body of work, will provide an overview of the CMS rule, the RAI-UG, and the CEP and the implications of inaccurate severity scores. The chapter will conclude with a discussion of the characteristics of NOC that may make it a viable cross-link for the CMS rules and indicators of substandard care.

CHAPTER 2

REVIEW OF LITERATURE

Interest in understanding the process of state nursing home agency (SNHSA) surveyor severity score assignment has been an evolutionary process. (See Appendix B for a chronological listing of recertification survey oversight initiatives.) Initially, the focus of investigation centered on reliable identification of substandard nursing home (NH) care and deficiency sanction enforcement. It became evident in 2003, through the efforts of the Government Accounting Office (GAO), that the SNHSA surveyors lacked the capability to systematically distinguish a resident's response to minor lapses and more serious problems in nursing care. Specifically, the GAO (2003) attributed this difficulty in determining the severity of a deficiency to the lack of a clear link between the CMS rule, nursing practice, and documented harm to a resident within SNHSA surveyor documentation. In 2004, the Centers for Medicare and Medicaid Services (CMS) released an operational improvement plan to clarify the rule through issuing interpretative guidelines and to resolve the discrepancy in deficiency severity scoring (CMS, 2004). But in 2009, the GAO concluded that the CMS improvement plan had failed to clarify the interpretative guidelines or resolve the discrepancy in deficiency severity scoring. As a solution to the problem, the GAO (2009a) advised the CMS to further clarify and revise the existing surveyor guidance to make it more concise, and simplify application in the field to reduce confusion (U.S. GAO, 2009a). The CMS responded to this request with three proposals for improvement.

In response to the GAO request, the CMS first proposed an increase in CMS Regional Office oversight of the SNHSA recertification survey process as a potential solution to improve the accuracy of deficiency severity scores. Based on a CMS subcontracted research study, it was found that more experienced Regional Office managers had a higher level of agreement in the identification of a deficiency and the severity score than junior SNHSA surveyors (Lee, Gajewski, & Thompson, 2006). Lee

et al. (2006) also found that the more experienced Regional Office managers may downgrade a deficiency severity score due to insufficient evidence in SNHSA surveyor documentation to support the preliminary severity score that was assigned during the survey process in the NH. It was observed throughout this study that the SNHSA surveyors would frequently seek the expertise of regional managers for assistance and advice on severity score decision making (Lee et al., 2006). Regional managers were more knowledgeable about the correct interpretation of the regulations, yet they were not present in the NH to personally assess residents' conditions (Lee et al., 2006). Without the regional manager's presence in the NH, the value of managerial advice relied on the experience and knowledge of the SNHSA surveyor to accurately collect and communicate the condition of the resident under review.

As the second proposed solution to the problem, the CMS reported that the new Quality Indicator Survey (QIS) would streamline the analysis and decision-making pathways, and as a result, improve the quality of the recertification survey (U.S. GAO, 2009). The QIS was co-developed by Karen Schoeneman, M.P.A., past Deputy Director of the Division of Nursing Homes, and led by Andrew Kramer, MD, Professor of Medicine at the Division of Health Care Policy and Research at the University of Colorado. The Center for Health Systems Research and Analysis (CHSRA) at the University of Wisconsin Medical Center completed the research triad to evaluate the QIS (Schoeneman, 2011). The QIS computer software facilitated evaluation of data from a wider range of care areas that resulted in more deficiencies being identified than through the traditional survey process (Hamilton, 2008). Initial results of the validity and reliability testing of the QIS and companion Critical Elements Pathway (CEP) assessment tool failed to improve the recertification survey process (Hamilton, 2008). In addition, the reliability and validity testing of the QIS lacked sufficient rigor to produce defensible data to support or refute the effectiveness of the QIS. There was also no evidence that using the CEP as an investigative tool influenced the frequency or severity of deficiency

citations. The Hamilton (2008) study found that the SNHSA surveyors submitted more documentation supporting their deficiency citation and severity scores, but that there was no improvement in the quality of the documentation to support the deficiency citation, severity score, or linkage to the CMS rules. Hamilton (2008) cited variability in SNHSA surveyor expertise and decision making, and the absence of specific instructions and standardized observational protocol (Schnelle et al., 2009) as contributing to an under-detection of serious quality of care issues. The initial impressions of the QIS survey protocol suggested that it might not resolve the inaccuracy in assigning deficiency severity scores.

In the final response to the GAO request, the CMS expressed a willingness to explore a cross-linkage of the CMS rules, the indicators of substandard nursing care, and the full guidance manual (U. S. GAO, 2009a). An extensive literature search was conducted that found no government documents, state documents, or nursing research that proposed a viable cross-linkage solution. The closest content connection to this proposed cross-link was the suggestion that a standardized language (Clancy, 2006) could be used that may increase the clarity of the CMS documents to assist the SNHSA surveyors to determine a deficiency severity score more accurately. Drawing from that third and final proposal, this work will explore using the language of the Nursing Outcomes Classification (NOC) as a potential linkage; a conceptual framework incorporating this element was designed from a review of the nursing literature to frame the work for this study).

Using this framework as a guide, this chapter will give an overview of the influence of severity scores on the SNHSA surveyors, the NHs, and severity score dispute resolution. The complexity of the CMS guidelines used by the SNHSA surveyors to assign a deficiency severity score will be discussed. The chapter will conclude with a brief overview of the unique characteristics of NOC and the rationale for why it is the

best suited to examine as a potential solution to the difficulty in assigning deficiency severity scores accurately.

Influence on Severity Score Assignment

The consequences of noncompliance with the CMS rules command immediate attention from NH administrators and directors of nurses. An unacceptable deficiency citation triggers immediate corrections in nursing care. At the same time, they may choose to use the lack of clarity and usability of the CMS rules and deficiency citation documents to dispute the presumed overstatement of the deficiency and severity score. A fundamental difference in the perspective and the severity of a negative resident response to nursing care leads to conflict. One perspective relies upon the avoidance of sanctions to motivate improvements in the quality of nursing care in NHs (Stevenson, 2005, 2006) and want assurance that the deficiency is not underscored. Another perspective suggests that variability in residents' response to illness and unique personality characteristics that shape lifestyle choices influence the outcome of nursing care (Lett, 2006). The forthcoming discussion will describe the influences on the SNHSA deficiency citation process and how a deficiency and severity score may influence the delivery and quality of nursing care.

Influence on SNHSA

In the years 2000 through 2011, an average of six NH deficiencies was assigned to NHs (AHCA and Alliance for Quality Nursing Home Care, 2011). To ensure the safety and well-being of elders living in NHs, consumer interest groups and members of Congressional oversight committees rely on stringent identification of more deficiencies or a higher severity score to force NHs to comply with state and federal regulations (Grassley, 2008). However, there have been concerns that these deficiency citations were not a true representation of nursing care provided in NHs (U.S. GAO, 2010) and that defenseless residents were at-risk of injury or harm from poor quality nursing care. Also, a failure to accurately assign deficiency severity scores may misrepresent the level of

compliance with federal and state regulations and allow a NH that provides substandard nursing care to receive Medicare and Medicaid payments (Lee et al., 2006).

In 2008, the CMS conducted 1,227 comparative recertification surveys in six states to evaluate the ability of SNHSA surveyors to identify substandard nursing care and assign deficiency severity scores accurately (AHCA and the Alliance for Quality Nursing Home Care, 2011). The findings of the comparative survey of the CMS Regional Office surveyors found an understatement of deficiencies. When the data were reexamined, the scope and severity increased from 12.3% to 14.1% when combined with missed serious deficiencies (U.S. GAO, 2010). These deficiencies were understated in the area of poor quality of care, such as ensuring proper nutrition and hydration, and prevention of pressure sores (U.S. GAO, 2008).

The SNHSA surveyors identified the source of the discrepancy in the comparative surveys to an ineffective recertification survey process. In addition, the SNHSA surveyors reported a burdensome survey process requiring excessive task completion and a general weakness in the clarity of CMS rules and guidance manual (GAO, 2009). They also noted the poor quality of the CMS training on the interpretation and use of the CMS guidance manual (GAO 2009b). Forty-four percent of the SNHSA directors attributed the understatement of the NH deficiencies to the inadequately defined and clarified indicators of actual resident harm that could have been avoided with improvements in the CMS guidance manual (U.S. GAO, 2009b). The SNHSA directors substantiated this statement by referencing two CMS rules totaling more than 50 pages. The SNHSA surveyors also voiced concern about the frequency of deficiency severity score reduction or retraction during the dispute resolution process and felt the time invested in defending an assigned score unduly increased their workload (GAO, 2009). As a result, the SNHSA surveyors reported reluctance to cite specific deficiencies or severity (U.S. GAO, 2009).

The discrepancy in assigning deficiency scores accurately may be reduced with specific outcome criteria that define the key causes of the direct and indirect influences on residents' health and well-being. Lee et al. (2006) found that differences in outcome expectations between SNHSA surveyors increased the difficulty of survey teams agreeing on the most accurate deficiency severity score. In addition, variability in defining the expected outcome of nursing practice and detection bias influenced SNHSA surveyors' evaluation of nursing care (Lee et al., 2006). Also, when SNHSA surveyors looked at the same evidence with different outcome expectations, disagreements in the aggressiveness and timeliness of nursing care resulted in variations in severity scores (Castle & Ferguson, 2010). To resolve a disagreement, the SNHSA survey teams consulted regional managers.

The practice of consulting regional managers suggests that disagreements in determining the severity of a deficiency and surveyor bias will not be resolved until the SNHSA surveyors have more specific criteria for decision making (Lee et al., 2006) This lack of clearly defined outcome indicators in the CMS rules and documents caused the SNHSA surveyors' evaluation of nursing practice to shift toward the implementation of the "right" intervention, how quickly the intervention was implemented, and if enough different interventions were performed by nursing staff in caring for a resident (Lee et al., 2006; Levenson, 2009b). Until more specific decision-making tools are available, the original OBRA '87 premise of allowing the nurses working in NHs to demonstrate the rationale for resident care based on resident's outcomes will continue to be violated (Levenson, 2009b).

Influence on Nursing Homes (NH)

Nursing plans of care coordinate services by ensuring the effectiveness of the nursing process to achieve the best possible outcome within restrictions of each resident's health concerns, desires and expectations. Focusing on resident needs and desires rather than generic regulatory expectations that demand identical care for every individual with

the same condition or illness ensures identification of the key causes of health and well-being (Levenson, 2009a). Key causes of direct and indirect influences on the health and well-being of residents fall into three dimensions: physical, functional, and psychosocial (Levenson, 2009a). The physical dimension represents the coordinated physiological activity of the human body. Individual activities to meet personal needs and desires represent the functional dimension. The psychosocial dimension is an individual's relationship with family and society (Levenson, 2009a). Accurate deficiency citation and severity score assignment relies on the skill of SNHSA surveyors to identify and assign significance to the key causes of direct and indirect influences on the health and well-being of residents, then link their findings to a CMS rule and provide sufficient documentation to support their findings.

Inconsistency in the identification and supporting documentation of substandard nursing care, as well as inaccuracy in determining the severity score, reduces the value of the survey process to nursing managers working in NHs. Nursing managers should be using the results of a recertification survey to improve the quality of nursing care (Lee et al., 2006). When nurses working in NHs lack confidence in the SNHSA surveyors' ability to measure the outcome of nursing practice, it undermines the certainty that the changes made in nursing care at the request of the SNHSA survey team will satisfy the criteria of another SNHSA survey team (Lee et al., 2006). As a result, the NH managers may implement short-term deficiency citation correction of nursing interventions to achieve a satisfactory score in the next recertification survey. Also, the fear of SNHSA surveyor disapproval of long-term changes in nursing care may deter NH managers from investing sufficient effort into implementing new nursing protocols.

The CMS rules require immediate implementation of new nursing protocols to correct substandard nursing care that is found during a recertification survey (CMS, 2010, 2012). The combined effect of time constraints imposed by the CMS rules and the uncertainty that the changes will meet SNHSA approval influences the mindfulness of

nurses working in nursing homes. Mindfulness is an active awareness of the continual creation and refinement of ideas and new information, and the willingness to view contexts from multiple perspectives (Levinthal & Rerup, 2006). When the mission statement of an organization was in congruence with regulatory oversight, nurses working in NHs were more likely to view recertification surveys as an opportunity for improvement, and resident-centered problem-solving mindfulness increased (Colon-Emeric et al., 2010). For example, nurses reported that the completion of regulatory documents helped them identify issues and solutions that they would have otherwise missed (Colon-Emeric et al., 2010). It was also noted that nurses reported that completion of the required CMS documentation facilitated communication among the nursing staff, which also led to increased morale and mindfulness (Colon-Emeric et al., 2010). In the NHs with few deficiencies of low severity, nursing staff were perceived as an invaluable resource to achieving the organization's mission of providing quality resident care (Forbes-Thompson, 2007). Also, keeping the resident as the central focus of nursing care increased the cohesiveness among nursing staff, reduced job turn-over, and strengthened the relationship with employees in ancillary NH departments (Forbes-Thompson, 2007).

Anxiety from inconsistent recertification survey reduces mindfulness and places a NH at risk of shifting the focus of nursing care away from a resident-centered approach and toward less effective care (Colon-Emeric et al., 2010). Care plans can become less specific to resident needs, and there may be an increase in redundant documentation to avoid sanction if they fail to meet the written goal (Colon-Emeric et al., 2010). Internal pressures for satisfactory recertification survey results, fear of the next recertification survey, and apprehension regarding the consequences of a survey demoralize nursing staff, reduce their job satisfaction, diminish their sense of job security (Forbes-Thompson, 2007; Levenson, 2009a, 2009b), and reduce the quality of nursing care.

The quality of nursing care, as defined through recertification survey deficiency citations and severity scores, corresponds with a NH's reputation and ability to attract new residents. As older Americans explore various senior living options, performance in a recertification survey may impede or enhance marketing and promotional programs intended to increase occupancy rates. In 2006, the median NH occupancy rate was at 89.7%; nationally, the median 2011 NH occupancy rate has decreased to 86.7% (American Health Care Association Reimbursement and Research Department, 2011). The ease of accessing deficiency citation and severity score information through the CMS report card program helps older Americans select a NH.

The NHs rely upon the accuracy of the deficiency citation and severity scores to promote mindful nursing staff who will improve the quality of nursing care and attract new residents. In an effort to increase the mindfulness of nursing staff and protect their reputation, NHs pressure the SNHSA and surveyors to be more accurate and consistent in the identification of substandard nursing care and assign severity scores accurately. Inconsistency in the SNHSA surveyor's ability to consistently and reliably assign deficiency and severity scores increases the probability that a NH will challenge and win in dispute resolution.

SNHSA and NH Perspective Conflict Resolution

Lack confidence in the SNHSA surveyor's ability to accurately identify deficiencies and assign severity scores stimulate NH administrators to exercise their right to challenge the citation in Informal Dispute Resolution (IDR) and Formal Dispute Resolution (FDR). Defending SNHSA surveyor decisions in the IDR and FDR increases the SNHSA and surveyor work load. To lessen their workload, underscoring the severity of substandard nursing care may appeal to the SNHSA surveyors. Also, state legislators exert political pressure on the SNHSA surveyors to overlook or underscore deficiencies that may cast a shadow on NHs in their legislative districts (Office of Inspector General, 2003).

Also, the lack of a clear linkage between the CMS rule, nursing practice, and documentation of resident harm or potential for harm intensifies the need for accurate deficiency severity scores to avoid dispute resolution.

In 2007, the GAO analyzed the fiscal years 2000 through 2005 enforcement and deficiency history of 63 of 74 NHs in four states (California, Michigan, Pennsylvania, and Texas) that informed the conclusions in their March 1999 report. The reviewed NHs received 147 deficiencies for actual harm or immediate jeopardy. The GAO (2007) claimed that the NH administrators learned that arguing the reliability of deficiencies and severity scores in an attempt to delay deficiency sanctions gave their nurses additional time to correct substandard nursing care. This pattern of legal maneuvering led to a “yo-yo pattern” of cycling in and out of compliance (U.S. GAO, 2007a). The GAO (2007a) found that in 31 NHs, improvements in nursing care resulting from sanctions lasted only 6 months and that some NHs cycled in and out of compliance as many as nine times. The GAO, however, was unable to substantiate their claim that the NHs manipulated the IDR process to their advantage.

Further investigation into the survey history of NHs is necessary to identify the source of “yo-yo” compliance. Is “yo-yo” compliance a product of NH administrative legal maneuvering to circumvent CMS sanctions or is it the result of inconsistency in the SNHSA surveyor deficiency citation and severity score assignment process? Perhaps the recertification survey and severity score assignment process failed to recognize resident issues without using clearly defined and measurable criteria that satisfy the intent of the CMS rules (Levenson, 2009a). Lee et al. (2006) found SNHSA surveyor confusion in interpreting the regulations in conjunction with insufficient and inexperienced SNHSA staff as the reason for inaccurate deficiency severity scores. More specifically, Lee et al. (2006) found the recertification survey process reliable in assessing aggregate results, but unreliable in identifying the key causes of direct and indirect influences on the health and well-being of individual residents accurately.

In review, inaccuracy in the deficiency identification and severity score assignment process ultimately creates an antagonistic environment between the CMS and the NHs. The SNHSA surveyors, in their efforts to accurately identify and measure the quality of nursing care in NHs, are central to the dispute. The SNHSA surveyors and academic studies suggest that the CMS rules and evidence collection tools do not effectively communicate indicators that describe minimum requirements for the outcomes of nursing practice. As a result, the SNHSA surveyors do not clearly document the evidence supporting their claim of substandard nursing care, which in turn forces the Regional Office Managers to underscore the severity of the deficiency. At the same time, NHs use the SNHSA surveyor's difficulty in assigning severity scores accurately as an opportunity to defend their organization's nursing care through dispute resolution. The increased usage of dispute resolution to challenge the accuracy of deficiency severity scores triggers Congressional oversight investigations that ultimately place increasing pressure on the SNHSA surveyors to critically evaluate nursing care and identify more deficiencies with higher severity scores. The inconsistency in assigning severity scores leads to greater insecurity in nursing practice in NHs, and ultimately to less mindfulness and resident-centered care.

Complex CMS Guidelines

Assigning a deficiency severity score is a complex process using the combination of data collection, data analysis, and comparison of nursing care with the minimum standards for quality as described in the CMS rules. During a recertification survey, SNHSA surveyors collect data from a series of documents. This includes but may not be limited to the Minimum Data Set 3.0 (MDS) and the Critical Elements Pathways (CEP) used in the QIS (CMS, 2010a). The resident information in the MDS 3.0 and the CEP are created in a complex combination of interactive components in human and artificial intelligence computer software that may influence how the SNHSA surveyors interpret the information and make conclusions on the quality of nursing care. When evidence of

substandard nursing care is found, SNHSA surveyors use this information to support their conclusions and suggest severity scores according to the standard of nursing care defined in the CMS rules. The upcoming discussion will describe the origins of the CMS rules and surveyor guidance and interpretive guidelines. The discussion will continue with an overview of the development of the CEP and the MDS 3.0.

CMS Rules

The CMS rules are federal regulations as authorized by the U.S. Congress including Medicare legislation P.L. 89-97 Social Security Act (1965) as revised and amended P.L. 105-33 Balance Budget Act (1997). Rules for NHs may be found at 42 CFR 483, Subpart B, Revised as of 1898 unless otherwise noted. In this legislation, the CMS, as the federal agency, is empowered to (a) interpret the Federal (Administrative Procedure Act of 1946, 5 U.S.C., Subchapter 11, § 553); (b) to develop rules and create guidelines to assist surveyors in implementing these rules. Further CMS is authorized to enforce the federal regulations that govern the administrative actions of those working in NHs (Administrative Procedure Act of 1946. 5 U.S.C., Subchapter 11, §558) through various forms of discipline including fine, sanction, force to close, or jail violators of the federal regulation (Administrative Procedure Act of 1946. 5 U.S.C., Subchapter 11, §558; 42 CFR 488, Subpart E, §558, Revised as of 1994 unless otherwise noted.

In the CMS, the Division of Nursing Homes (DNH), a subdivision of the Survey and Certification Division and the Office of Standards and Quality, writes the initial language of the rule and any subsequent guidance for surveyors. To further refine the rule, the CMS subcontracts with an external agency or formulates a team of independent medical and clinical experts. The membership of this CMS independent team is contingent on the topic, the network of CMS contacts, and the availability or willingness of medical and clinical experts to participate. When the rule satisfactorily completes the secondary phase of the CMS development process, it is distributed to the SNHSAs and 30 industry specialty, clinician, and NH advocate organizations such as the American

Health Care Association (AHCA), the Long-Term Care Ombudsman Program, and the Pioneer Network (K. C. Schoeneman, personal communication, January, 8, 2012). The SNHSAs and specialty organizations critique the proposed rule and then offer comments and suggestions for reconsideration or modification to the CMS during an open forum comment period. The CMS DNH agency, however, has complete discretionary power to accept or reject the suggestions for reconsideration or modification. After these deliberations, a final version of the rule is sent to the Office of General Council-Survey and Certification Division for approval prior to the final stage of grammar and printing corrections. At the same time, an advance copy of the new rule is posted on the CMS website for the NHs (K. C. Schoeneman, personal communication, January, 8, 2012).

On completion of the rule-making process, the AHCA, with the approval of the CMS, publishes information on the survey process, certification and enforcement regulatory policy, and the rules in “The Long-Term Care Survey” (LTCS) manual. The LTCS manual contains SNHSA guidance, CMS recertification survey forms, and cross-referenced indexes to provide accurate and authoritative information to increase understanding of the rules (CMS, 2010a). The AHCA designed the F-Tag classification system to make the manual contents more readily accessible to SNHSA surveyors.

As the AHCA prepares the rule for publication in the guidance manual, an advance copy of a new rule is also sent to the SNHSA for surveyor education and training. The CMS regional offices oversee the SNHSA surveyor education and training of a new rule to reduce disparity in surveyor preparation and in the interpretation and implementation of new rules. Each SNHSA determines the amount, education, and qualifications of their employees. As a general rule, the SNHSA’s surveyors, Bureau Chiefs, Compliance Officers, Training Officers, and Administrators are licensed registered nurses. For example, in the SNHSA Iowa Department of Inspections and Appeals (DIA), the Bureau Chiefs, the Special Services Bureau, the Compliance Officers,

the Training Officers, and the Program Coordinators are generally licensed registered nurses (DIA.gov).

Minimum Data Set 3.0 (MDS 3.0)

The Resident Assessment Instrument (RAI) consists of three components: the Minimum Data Set 3.0 (MDS 3.0), the Care Area Assessment (CAA), and the RAI Utilization Guideline (RAI-UG). The MDS 3.0 is a multidisciplinary screening, clinical, and functional status assessment tool that standardizes communication about resident problems and conditions (CMS, 2011). The CMS contracted the development of the MDS 3.0 and CAA to the Rand Health Corporation to reduce the complexity of the data collection process. To ensure the clarity and usability of the RAI, the Rand Health Corporation enlisted the clinical expertise of social workers, physicians, NH medical directors, and 10 nurses as members of the MDS 3.0 research and development team (CMS, 2011). The RAI 3.0 represents CMS's efforts to simplify the collection and correlation of resident data in a logical format and reduce computer software and human error in complex systems. This blend of human and artificial intelligence in the RAI data collection process involves multiple steps within a complex computer system and NH culture. The complexity of the data collection and entry systems in NHs may cause feedback loops that can cause unexpected nonlinear outcomes (Clancy, 2004).

The MDS 3.0 software was designed to correlate vast amounts of resident information and increase the accuracy of the resident assessment outcomes. A multidisciplinary health care team of nurses and other health care professionals, such as social workers, physical therapists, activity directors and nurse assistants, collect resident clinical and functional status information and then enter it into the MDS 3.0 computer software. To enter the data into the MDS 3.0, the health team aligns the unique resident specific health information with predetermined indicators in the computer software for conversion into a numerical coding identifier. Using the artificial intelligence in the computer software, the MDS 3.0 compiles the numerically coded resident data, predicts

at-risk conditions in a resident's health or well-being, and then calls attention to these areas of concern in the CAA. The at-risk resident conditions in the CAA require further assessment and evaluation. In addition, the CAA assists the nurse assessor to systematically interpret the information in the MDS 3.0 for the care plan. The SNHSA surveyors rely on the accuracy of the resident information in the MDS 3.0 and areas of concern in the CAA to facilitate identification of substandard nursing care and assign deficiency severity scores.

The third component of the RAI, the RAI-UG, provides instruction on when and how to complete the MDS 3.0 and CAA (CMS, 2011). The RAI-UG defines the MDS 3.0 concepts and explains the numerical coding system for each query. Additional instruction is provided through case studies and test coding samples. The intent of the CMS RAI-UG is to increase the clinical relevancy, data accuracy, and clarity and to improve the resident voice in the assessment process (CMS, 2011). The CMS DNH developed the RAI-UG manual with the help of a multidisciplinary team of geriatric experts. Fifty percent of the team members acknowledged by CMS as contributors to development of the RAI-UG manual were expert nurse clinicians and researchers. In addition, nurses who were employed by NH organizations and special interest group stakeholders such as the American Association of Homes & Services for the Aging, the American Nurses Association, and the National Association of Directors of Nursing Administration/Long-Term Care, participated in the development of the RAI-UG.

Critical Elements Pathway (CEP)

The CEP is the investigative tool of the QIS. The goal of the CEP is to use a structured process to improve the consistency and accuracy of the documentation (Hamilton, 2008) that supports deficiency citations and provides timely feedback to nurses practicing in NHs (Kansas Department of Aging, 2010). The intent of the CEP is also to increase the volume of resident information collected during a recertification survey and consolidate unique resident characteristics according to the CMS F-Tags.

Using the queries in the CEP, surveyors evaluate the quality of nursing care through direct observation as well as resident, family, and nursing staff interviews. Using the collected resident information, the computer artificial intelligence replicates the decision making of “the best surveyor in the country” (K. C. Schoeneman, personal communication, January 8, 2012) to determine a deficiency and assign a severity score.

The organization of the definition of the outcomes of nursing practice in the CEP differs from the taxonomy used by CMS in the Surveyor Guidance Manual and F-Tag classification system. The CEP incorporates the definition of nursing practice outcomes for functional status into the Activities of Daily Living and Range of Motion.

In summary, there are strengths and weaknesses of the defined tools, companion pieces, and process of severity score assignment. These elements may add to the lack of clarity and usability in the deficiency severity score assignment process. The intent of the words and concepts that are well recognized by health care providers, such as physicians or social workers, may not be recognized as having the same meaning for nurses. The increased volume of nursing documentation by the SNHSA surveyors to substantiate the deficiency severity score in the CEP without improving the quality of documentation to support their decision (Hamilton, 2008) suggests that the language used in the CMS rules, the MDS 3.0, and the CEP may not satisfactorily align with the language used by nurses. Subsequently, this body of work explored the degree of alignment of NOC with the CMS rules, the RAI-UG, and the CEP.

Nursing Outcome Classification as a Viable Solution

A NH recertification survey is a retrospective evaluation of prospective nursing care (K. C. Schoeneman, personal communication, January 8, 2012). Prospective ideology of nursing care in NHs identifies and anticipates resident issues and health concerns, and then plans interventions to prevent or minimize the occurrence of the negative effects of an anticipated or actual event. In turn, the outcome indicators measure a resident’s response to the effectiveness of the nursing action in achieving the targeted

goal. Nurses working in NHs believe that negative resident outcomes may be unavoidable due to unanticipated or uncontrollable variables in residents' health conditions that are beyond the scope of nursing practice (Lett, 2006). In the retrospective ideology, the task of SNHSA surveyors is to use resident response to nursing care as described in the CMS rules, the MDS 3.0, and the CEP to retrospectively evaluate the appropriateness and timeliness of the chosen nursing action in preventing or minimizing the occurrence of negative effects.

The CMS recertification survey protocol relies on the gerontological knowledge, expertise, and decision-making abilities of the SNHSA surveyors to accurately determine whether decline in a residents' condition is beyond the scope of nursing practice to control or avoid. Without standardized and measurable indicators of the outcome of nursing practice that link and clarify the CMS rules to substandard nursing care, the conflict between prospective nursing care and retrospective recertification survey ideologies may not be resolved. The standardized and measurable outcome indicators, in combination with the unique characteristic of the NOC language, may give it a higher probability of being a viable solution as a CMS link than other standardized nursing outcome languages.

The purpose of standardized nursing language is to (a) provide effective communication to the health care team; (b) direct a patient's continuation of care; (c) evaluate a patient's progress and health outcome over time; and (d) document precisely what nurses do (Jefferies, 2010), and be measured and coded (Rutherford, 2008). Many of the nursing languages are designed for hospital-based specialty nursing practice or home and community health nursing care. The Internal Classification for Nursing Practice (ICNP), the Omaha System, and the NOC are languages that may be appropriate for NHs. In the forthcoming discussion, an overview of these three languages will support the contention that the unique characteristics of the outcomes, the respective indicators, and the Likert-type rating scale of the NOC has the highest probability of

becoming a compatible linkage system for the CMS rules, the indicators of substandard nursing care, and the full CMS guidance manual to assign severity scores.

The International Classification of Nursing Practice (ICNP)

The ICNP is a unified language to describe and compare terms and existing terminologies for local, regional, and international nursing care (ICNP, 2011). The ICNP categorizes nursing language by Nursing Phenomena (diagnosis), Nursing Actions, and Nursing Outcomes. The language of outcome indicators in the ICNP includes a description of nursing practice that is useful for individual residents and aggregate populations. The conceptual framework in the ICNP does not interfere with theoretical frameworks or models of nursing used in NHs.

The negative aspects of the ICNP outweigh the potential for its use as a linkage for the CMS. First the ICNP is created as an international language written so the meaning and intent cannot be altered or lost in translation (Clark, 1998). The language, however, may not align with sufficient specificity for the unique language of nursing care in U.S. NHs. Second, the ICNP outcome definitions are complex and may require the same degree of gerontological knowledge, critical thinking, and decision-making skills as the process currently used by the CMS.

The Omaha System

The Omaha System is a multidisciplinary language for problem classification, intervention scheme, and problem rating to enhance nursing practice, nursing documentation, and information management (Omaha System, 2011). The Omaha System is a patient-focused reliable and valid system that generates data that can be shared with patients and their families (Martin, Monsen, & Bowles, 2011). The primary purpose for the Omaha System is to standardize community health care documentation across the continuum of patient care with multiple health care providers. The outcome indicators (Problem Rating Scale for Outcomes) five-point Likert-type scale measures a patient's Knowledge, Behavior, and Status (Martin et al., 2011; Westra, Solomon, &

Ashley, 2006). Using a matrix design similar to rubrics used by educators to communicate expectations of student performance, the Problem Rating Scale provides a listing of outcome indicators by rank order. The health care provider documents the patient response to nursing care in the appropriate box that best describes the rated patient outcome.

The Omaha System would be a candidate to become the linkage for CMS except for two areas. First, this system is designed for multidisciplinary home and community health care agencies. Second, the Omaha System requires the health care providers to document the justification of their outcome assessment in each outcome domain. Documentation of the resident response to nursing care in the Omaha System, like the ICNP, requires gerontological knowledge, experience, critical thinking, and decision-making skills to complete. Redundant documentation to record a resident's response to nursing care increases the workload of the SNHSA surveyors. Also, SNHSA surveyor documentation should be reserved for the Surveyor Notes Worksheet used in the CMS recertification survey to justify a deficiency citation and the severity score.

Nursing Outcome Classification (NOC)

The NOC is similar to other standardized languages; however, the labels (named outcomes in this body of work) and respective indicators position the NOC as the most viable nursing language to align with the CMS rules and evidence collection tools (see Appendix C). The fundamental difference between the NOC, the ICNP, and the Omaha system is the concise outcome definition and the comprehensive listing of indicators that describe a resident's response to nursing care. The NOC outcomes define specific states, behaviors, or perceptions of a resident's condition that measure the outcome of nursing practice (Moorhead et al., 2008). The indicators define resident outcomes that can be measured on a positive or negative continuum to establish a baseline for determining how close the resident is from achieving a goal at a particular point in time (Moorhead et al., 2008). The Likert-type scales quantify resident conditions that can be measured to

capture the effects of a nursing intervention in achieving the desired goal. If a goal is not met, the indicators will detect and measure specific aspects of nursing care that contribute to the progress or decline of a resident's health and well-being. The NOC outcomes also facilitate resident identification and analysis for specific populations. Using the NOC is a simple process of choosing the appropriate outcome, then rating the resident's response to nursing care on the appropriate indicator(s) Likert-type 5-point scale.

The NOC indicators offer a standardization of the outcome of nursing practice in several ways. The indicators are a comprehensive list of the literature-based resident responses to nursing care. Using the list of indicators for identification of substandard nursing care may alleviate the problem of differences in SNHSA education, gerontological nursing knowledge, nursing experience, and critical thinking skills. In addition, ranking a resident's response to nursing care using the Likert-type scale may be an effective communication tool to assist a SNHSA surveyor to convey a deficiency severity score to the recertification survey team.

It may also be possible to use the NOC outcomes and respective indicators to more effectively document in the Surveyor Notes Worksheet the linkage of the CMS rules, indicators of substandard nursing care, and the CMS guidance manual. As an example of the NOC use in a recertification survey, the SNHSA nurse surveyor would identify an area of concern through the CEP, the MDS 3.0, or other data collection techniques. The SNHSA surveyor would then select the appropriate outcome according to the type of concern, such as a nursing or medical diagnosis or health problem, a resident's characteristics, or a resident's capacities (Moorhead et al., 2008). After selecting the appropriate outcome, the SNHSA surveyor would contemplate the significance of each indicator listed in the outcome and designate the severity of the resident's condition on the outcome rating scale. The visual representation of the completed NOC outcome and indicators may be a critical thinking and decision-making tool or become a guide for further investigation. When the survey team determines that a

resident has received substandard nursing care, the NOC outcome and indicators could assist the SNHSA surveyor to investigate the status of other residents who may have a negative response to the same or similar nursing care.

Using the residents' cumulative outcome ranking, the SNHSA surveyor may more effectively assign a severity score and document the supporting evidence in the Surveyor Notes Worksheet. The standardized language of NOC may also reduce SNHSA surveyor workload as it more effectively and concisely communicates the outcome of substandard nursing care in a smaller volume of documentation. In addition, the standardization of the NOC outcomes and respective ranked indicators clearly communicates the rationale of the SNHSA surveyor's severity score to the survey team and the regional officers for assignment of the final severity score. Furthermore, using the NOC outcomes and respective ranked indicators to substantiate the justification for a deficiency and severity score definitively conveys the areas of nursing practice that need improvement.

In summation, the specificity of the NOC outcomes and indicators to exactly identify and measure a resident's health and well-being may be useful to document support evidence of substandard nursing care. As a documentation tool, the NOC outcomes and respective indicators may assist the SNHSA surveyors to clearly and concisely describe the specific components of nursing care that resulted in a negative resident outcome. Clear and concise documentation that accurately communicates the precise component of nursing care that led to a deficiency, and the equivalent resident response, may increase the usability of the CMS rules, the MDS 3.0, and the CEP. Incorporating the NOC as a linkage system for the CMS rules may provide nurses in NHs enhanced confidence in the SNHSA survey team and minimize the need to question the deficiency and severity score in dispute resolution. Also, increased accuracy in linking the substandard nursing care to a CMS rule may shift the relationship of SNHSA surveyors with NHs away from the use of IDR and FDR to resolve disputes into a culture of quality improvement. Consistency in the identification of substandard nursing care and

increased accuracy in assigning a severity score may increase the value of the recertification survey.

Conclusion

As has been previously noted, the CMS rules, the MDS 3.0 and companion RAI-UG, and the CEP have different origins. The CMS rules were written by the CMS Division of Nursing Homes with varying contributions of gerontological nursing experts. The MDS 3.0 was developed by the Rand Health Corporation. Fifty percent of the MDS-UG development team members were gerontological nurse researchers, clinicians, or nurse employees of geriatric specialty interest groups. In addition, the variability in language usage and intent of the CMS rules, the MDS 3.0, and the CEP may contribute to the lack of clarity and usability of these tools in the recertification survey process. Inaccuracy and inconsistency in deficiency citations and severity scores can influence the work environment of the SNHSA surveyors and nurses working in NHs. As a result, the focus of nursing care in NHs may shift away from resident-centered care to the action of limiting deficiencies and sanctions. The NOC, due its unique characteristics, may have the greatest probability of being a viable solution as a linkage between the CMS rules, the indicators of substandard nursing care, and the guidance manual to assign deficiency severity scores.

The next chapter will present the NOC outcome and indicator alignment coding taxonomy, the coding rules, and reliability testing. It will describe how the researcher reviewed the CMS F-Tag 310 rule for Activities of Daily Living, Section G of the RAI-UG for Activities of Daily Living and Functional Status, and the Activities of Daily Living and Range of Motion CEP, and how they were be linked to NOC to establish the alignment of these CMS documents to nursing practice.

CHAPTER 3

METHODOLOGY

The purpose of this chapter is to present the methods that were used to explore the viability of using the Nursing Outcomes Classification (NOC) to assist the state nursing home survey agency (SNHSA) surveyors to assign deficiency severity scores accurately. Specifically, this chapter provides a description of the method used to align the selected NOC outcomes and respective indicators with the text in the CMS F-Tag 310 rule (42 CFR §483.25(a), Subpart B, Oct.7, 2005), the Resident Assessment Instrument-Users Guide (RAI-UG), and the Critical Elements Pathway (CEP) for activities of daily living and functional status. This chapter will present the alignment coding taxonomy, the coding rules, and the reliability testing. This chapter will also present the analysis of the research approach used to describe the degree of alignment of the NOC with the text in the CMS F-Tag 310 rule, the RAI-UG, and the CEP.

Alignment Methodology

The University of Iowa Institutional Review Board (IRB) concluded that this body of work “did not meet the regulatory definition of human subjects research and did not require review by the IRB because the project did not involve collection of individually identifiable information from living individuals” (J. K. Williams, personal communication, January 13, 2011). Upon authorization of the IRB, a variation of Radow, Hardie, Fair, and McPhee’s (2000) methodology was used as a template to create the alignment coding structure for qualitative content analysis (Mayring, 2000) of text items to answer these questions:

1. What is the degree of alignment of select NOC outcomes and respective indicators with the text in the CMS F-Tag 310 rule for activities of daily living and functional status?

2. What is the degree of alignment of select NOC outcomes and respective indicators with the text in Section G of the RAI-UG for activities of daily living and functional status?
3. What is the degree of alignment of select NOC outcomes and respective indicators with the text in the CEP for Activities of Daily Living and Range of Motion?

NOC Outcomes Selection

The process of selecting the NOC outcomes used in this body of work was conducted through an analysis of the definition of each domain, class, and outcome published in the 4th edition of the Nursing Outcomes Classification. The chosen NOC outcomes were selected from the domains that (a) describe capacity for and performance of basic tasks of life; (b) describe physiologic functioning; (c) describe attitudes, comprehension, and actions with respect to health and illness; and (d) describe impressions of an individual's health and health care (Moorhead et al., 2008). Within these domains, only the NOC outcomes that correspond with functional status, activities of daily living, and range of motion were chosen.

Document Selection

The CMS periodically amends the CMS rules, the MDS 3.0, and the companion RAI-UG. For this reason, it is important to conduct exploratory research to discover the viability of NOC as a linkage to the deficiency severity score assignment process using CMS rules and documents that are not scheduled for modification. The CMS F-tag 310 rule or Section G of the MDS 3.0 for activities of daily living and functional status are not scheduled for revision. Due to the richness of data that the Resident Assessment Instrument Utilization Guide (RAI-UG) contains in the concept definitions and training examples, the RAI-UG will be used in this study as representative of the MDS 3.0.

The CMS F-Tag 310 rule is located in section PP of the Long Term Care Survey Manual (LTCSM) published on the CMS.gov website (CMS, 2010). The RAI-UG for

functional status and activities of daily living is located in Section G of Chapter 3 of the Minimum Data Set 3.0 published on the CMS.gov website (CMS, 2011). The CEP for Activities of Daily Living and Range of Motion is a care area investigation key of the Quality Indicator Survey (QIS) published on the Kansas Department of Aging website (Kansas Department of Aging, 2010).

Document Preparation

The text in the CMS F-Tag 310 rule, the RAI-UG, and the CEP were transcribed to a standardized format to be compatible with the NVivo 9 computer software. The transcribed text consisted of a combination of words, sentence fragments, or sentences that for the remainder of this body of work will be identified as text item(s).

Degree of Alignment

As previously described in Chapters 1 and 2, the CMS F-Tag 310 rule, the RAI-UG, and the CEP are multipurpose documents that (a) instruct the SNHSA surveyors to conduct a recertification survey, (b) instruct the SNHSA surveyors to assign deficiency severity scores, (c) teach nurses how to assess resident's health and well-being to complete the MDS 3.0, and (d) define the minimum standard of nursing practice (CMS, 2010). To achieve these objectives, the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP contained content pertaining to nursing inputs, nursing processes, and nursing outcomes. Only the text items in the three CMS documents that defined the outcome of nursing practice were analyzed. The text items that defined nursing input and nursing process were coded as having no alignment with the selected NOC outcomes and the respective indicators.

The first step to determine the degree of alignment of text items in the CMS F-Tag 310 rule, the RAI-UG and the CEP was to read the entire document and isolate the text items that defined the outcome of nursing practice. Using the degree of alignment coding rules, the text items were analyzed to discover connotation, main idea, or intent and put them into a coding category (Mayring, 2000).

The degree of alignment between the selected NOC outcomes and the respective indicators and the three CMS documents was established when the connotation, main idea, or intent was equivalent to one of the following three categories: (a) the presence of an exact word alignment, (b) the presence of an intent alignment, or (c) no alignment (Radow et al., 2000). An exact word alignment between the selected NOC outcomes indicators and the CMS F-Tag 310 rule, the CEP, and the RAI-UG was defined as the use of identical words, identical sentence fragments, or identical sentences. Intent alignment in this study was defined as the use of words, sentence fragments, or sentences that have the same meaning or connotation. There was no alignment between the words, sentence fragments, or sentences of the selected NOC outcome and respective indicators and the CMS F-Tag 310 rule, the RAI-UG, and the CEP if the exact words, sentence fragments, or sentences were not identical or did not convey the same intent.

NVivo 9 Coding Taxonomy

The NVivo 9 qualitative data analysis computer software was selected for use in this body of work for its ability to replicate the NOC taxonomy. To categorize the degree of word alignment between the selected NOC outcomes and respective indicators with the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP, a working document entitled NVivo 9 coding taxonomy was created for each CMS document. The NVivo 9 coding taxonomy contained the three degree of alignment categories of Exact Alignment, Intent Alignment, and No Alignment. Within the three primary categories, the NVivo 9 coding taxonomy contained a secondary category that included the outcome title and numerical identification for each selected NOC outcome. A tertiary category contained the definition and numerical identification for all indicators of a selected NOC outcome. The “No Alignment” category was a repository for text items from the three CMS documents that did not align with NOC outcomes or indicators. The same taxonomy was designed for the Exact Alignment and Intent Alignment categories for the CMS F-Tag 310 rule, the RAI-UG and the CEP. For example:

Exact Alignment

1. NOC Outcome
 - a. NOC Indicator

Intent Alignment

1. NOC Outcome
 - a. NOC Indicator

No Alignment

1. CMS document nursing text items that did not align with NOC outcomes or indicators.

Degree of Alignment Rules

To provide consistency in the researcher's approach and decision making, coding rules to determine the degree of alignment of the text items in the three CMS documents with the selected NOC outcomes and respective indicators were developed. The following rules were utilized:

1. The connotation, meaning, or intent of each text item was evaluated as a representation of a resident's perspective, the resident's family or responsible party, or the SNHSA surveyor who was acting as the resident's advocate.
2. The text items that described nursing process, nursing input, or instructions to SNHSA surveyors were coded into the "No Alignment" category.
3. Words and sentence fragments separated by punctuation, grammar, or sentence structure were coded individually.
4. If more than one connotation was incorporated into a sentence fragment or sentence, each connotation was coded individually.
5. Text items were coded into only one primary coding category of (a) exact alignment, (b) intent alignment, or (c) no alignment.

6. Within the primary coding category, text items were aligned to multiple selected NOC outcomes in the secondary or in the tertiary category of NOC indicators.
7. Duplicate text items were aligned and coded to the selected NOC outcomes or indicators.

Intercoder Reliability

To ensure the reliability of the coding process, nursing experts in geriatrics and the NOC evaluated the accuracy of the researcher's text item alignment. The goal of the reliability testing was to achieve 100% agreement using a two-stage process (Weber, 1990).

In the first stage, the researcher coded 10% of the CMS F-Tag 310 rule, the RAI-UG, and the CEP. To ensure consistency in the researcher's interpretation of the connotation, meaning, and intent of the NOC, and the text items in the three CMS documents, the experts checked each of the researcher's alignment decisions (Weber, 1990). The nursing experts rated all coding alignment decisions as (a) in agreement or (b) in disagreement. If the experts disagreed with a researcher's decision, the expectation was that an alternative alignment was to be given in stage two.

When the experts completed their evaluation of the researcher's coding decisions, the data were entered into NVivo 9 for a Cohen's Kappa coding comparison (Weber, 1990). When the researcher and experts share extensive knowledge of the research topic, the inter-coder reliability of .7 Cohen's Kappa is sufficient (Mayring, 2000). For the purpose of this body of work, an acceptable reliability value of .8 Cohen's Kappa was applied. If the percentage of the coding comparison was less than .8 Kappa coefficient for the CMS F-Tag 310 rule, the RAI-UG, or the CEP, it was expected that another 10% of the document in question would be coded by the researcher and again confirmed by the experts.

In 10% of each CMS document, the nurse experts coded a total of 1566 text items in the CMS F-Tag 310 rule, 1606 text items in the RAI-UG, and 1564 text items in the CEP. To facilitate the representation of the coding comparison, the following discussion and table displays the total percentage of the selected NOC outcomes and indicators. Kappa coefficient results were ranked according to 0-.20, .21-.40, .41-.60, .61-.80, and .81-1 categories (see Table 1). The nurse experts agreed with 83.78% of the CMS F-Tag 310 rule, 92.42% of the RAI-UG, and 94.63% of the CEP researcher's coding decisions. For example, the nurse experts agreed that the RAI-UG text item, "able to assist by bending his knees and pushing with legs," aligned with the NOC indicator "160305- Performs activities of daily living consistent with tolerance" in the outcome 1603 Health Seeking Behavior. The nurse experts did not agree with the alignment of the RAI-UG text item, "transferring from bed to chair," with the NOC outcome 021204-Smooth movement" in the outcome 0212 Coordinated Movement.

Table 1. Cohen's Kappa Percent Agreement Reliability Test

Cohen's Kappa Ranking	0-.20	.21-.40	.41-.60	.61-.80	.81-1
Percent Agreement of Cohen's Kappa					
F-310 Rule	0	2.22	3.06	10.40	83.78
RAI-UG	3.57	0.25	1.88	1.88	92.42
CEP	3.59	0	0.19	1.59	94.63

Since the Cohen's Kappa coding comparison exceeded the 80% agreement standard, no additional document text was coded by the researcher for expert verification. In stage two of the reliability testing, the coding discrepancy for each NOC outcome and indicator were reviewed by the researcher and nurse experts until 100% agreement was achieved (Weber, 1990). On completion of the reliability testing and achievement of the 100% agreement standard, the remainder of the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP were analyzed and coded by the researcher.

Research Analysis Approach

The following section of this chapter describes the research analysis approach used to explore the degree of alignment between the selected NOC outcomes and the CMS F-Tag 310 rule, the RAI-UG, and the CEP. The data analysis for the exact alignment, the intent alignment, and the no alignment categories for each CMS document was evaluated separately. The data presented in Chapter 4 to answer the research questions will be described as demographic data and frequency distributions for the exact alignment and intent alignment categories. Also, a qualitative analysis of the “No Alignment” category will be presented for each CMS document.

Select NOC Outcome Description, Exact Alignment, Intent Alignment, and No Alignment Analysis

Word Frequency Distribution. An NVivo 9 analysis query described the total word count, the word use frequency, and the word use percentage of words used more than two times in the CMS F-Tag 310 rule, the RAI-UG, and the CEP. The demographic data also included a listing of the selected NOC outcomes illustrated by the NOC domain, the NOC class, the NOC outcome, and the number of indicators in each outcome. An NVivo 9 analysis query described the total word count, the word use frequency, and the word use percentage of the NOC outcomes selected for analysis in this study.

Exact Alignment Analysis. Upon completion of the coding process, the CMS F-Tag 310 rule, the RAI-UG, and the CEP data were sorted to describe the text items that were in exact alignment with the indicators in the selected NOC outcomes. The rank order frequency distribution chart for each CMS document displayed (a) the NOC outcome title and numerical identification, (b) the NOC indicator definition and numerical identifier, (c) the CMS text items that were in exact alignment with a NOC indicator, and (d) the frequency of the CMS text items that exactly aligned with the respective NOC indicator.

Intent Alignment Analysis. A frequency distribution, to illustrate in rank order according to the frequency of the CMS text items that aligned in intent match with the selected NOC outcomes and indicators, was created for the CMS F-Tag 310, the RAI-UG, and the CEP. To facilitate exploration of the degree of alignment between the selected NOC outcomes and indicators with the text items in the CMS documents, the frequency distribution displayed the following elements: (a) the NOC outcome title and numerical identification, (b) the percentage of text items that aligned with the intent of NOC indicators in relation to the total number of indicators in a NOC outcome, (c) the number of text items that aligned with the intent of NOC indicators, (d) the frequency of text items that aligned with the intent of the NOC indicators, and (e) the percentage of the total CMS text items in relation to the respective NOC indicators.

No Alignment Analysis. The data in the No Alignment category contained text items that represented nursing inputs, nursing processes, and nursing outcomes. The text items that reflected the outcomes of nursing practice were isolated for analysis. No further analysis was conducted on the text items that communicated nursing input and nursing process. The text items that communicated nursing outcome expectations were analyzed to describe potential conceptual gaps or inconsistencies in the indicator syntax of the NOC.

Summary

This chapter described the exploratory content analysis methodology used in this study. The research questions explored the degree of alignment of select NOC outcomes and respective indicators with the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP for functional status-activities of daily living. The CMS document preparation, the NOC outcome selection criteria, and coding taxonomy were described. In addition, this chapter described the degree of alignment rules and the reliability test results. The research analysis approach for the exact alignment match, the intent alignment match, and the no alignment text item analysis categories was also described.

The next chapter will present the results of the study, to be followed in Chapter 5 with recommendations for future study.

CHAPTER 4

DATA ANALYSIS

The purpose of this chapter is to describe the degree of word alignment of the selected Nursing Outcomes Classification (NOC) outcomes and indicators with the text items in the CMS F-Tag 310 rule; the selected NOC outcomes and indicators with the text items in the Resident Assessment Instrument Users Guide (RAI-UG); and the selected NOC outcomes and indicators with the text items in the Critical Elements Pathway (CEP) for activities of daily living-functional status. The chapter will begin with a demographic explanation of the selected NOCs. The degree of alignment will further be described through frequency distribution charts; discussions; and example text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP. The final section of this chapter will discuss the weighted word frequency of the most common words used more than two times in the NOC, the CMS F-Tag 310 rule, the RAI-UG, and the CEP. To effectively represent the degree of alignment, the structure of the tables and discussion will vary according to the frequency, percentage, and degree of alignment of the CMS F-Tag 310 rule, the RAI-UG, and the CEP text items with the NOC indicators.

Selected NOC Description

A total of 93 NOC outcomes were selected for review, representing the four NOC domains of Functional Health, Physiologic Health, Health Knowledge and Behavior, and Perceived Health (see Table 2). Of the 93 selected NOCs, the domain of Functional Health contained 18 NOC outcomes with 231 indicators in the classes of Energy Maintenance, Mobility, and Self-Care. In the Physiologic Health domain, there were 389 indicators in 28 NOC outcomes in the classes of Elimination, Neurocognitive, Digestion & Nutrition, Tissue Integrity, and Sensory Function. Twenty-seven NOC outcomes in the Health Knowledge and Behavior domain contained 427 indicators in the classes of Health Behavior, Health Beliefs, Health Knowledge, and Risk Control and Safety.

Table 2. Domain, Class, Outcome, and Indicators of Selected NOCs

Domain	Class	Outcome	Indicators
Functional Health	Energy Maintenance	0005 Activity Tolerance	15
		0006 Psychomotor Energy	12
	Mobility	0200 Ambulation	16
		0201 Ambulation: Wheelchair	8
		0202 Balance	10
		0203 Body Positioning: Self-Initiated	12
		0204 Immobility Consequences: Physiological	22
		0208 Mobility	12
		0210 Transfer Performance	8
		0212 Coordinated Movement	12
	Self-Care	0300 Self-Care: Activities of Daily Living	11
		0301 Self-Care: Bathing	14
		0302 Self-Care: Dressing	14
		0303 Self-Care: Eating	16
		0305 Self-Care: Hygiene	15
		0308 Self-Care: Oral Hygiene	7
		0310 Self-Care: Toileting	13
0313 Self-Care Status		14	
Physiologic Health	Elimination	0500 Bowel Continence	20
		0501 Bowel Continence	17
		0502 Continence	19
		0503 Urinary Elimination	21
		Neurocognitive	0900 Cognition
	0902 Communication		9
	0903 Communication: Expressive		8
	0904 Communication: Receptive		6
	0905 Concentration		14
	0906 Decision Making		11
	09011 Neurological Status: Central Motor Control		11
	0913 Neurological Status: Cranial Sensory/Motor Function		23
	0918 Heedfulness of Affected Side		12
	Digestion & Nutrition		1004 Nutritional Status
		1008 Nutritional Status: Food & Fluid Intake	5
		1010 Swallowing Status	20
		1011 Swallowing Status: Esophageal Phase	16
		1012 Swallowing Status: Oral Phase	13
		1013 Swallowing Status: Pharyngeal Phase	13
		1014 Appetite	9
		Tissue Integrity	1100 Oral Hygiene
	1101 Tissue Integrity: Skin & Mucous Membranes		21

Table 2 (continued)

	Sensory Function	2400 Sensory Function: Cutaneous	11
		2401 Sensory Function: Hearing	17
		2402 Sensory Function: Proprioception	12
		2403 Sensory Function: Taste & Smell	9
		2404 Sensory Function: Vision	23
		2405 Sensory Function	7
Health Knowledge & Behavior	Health Behavior	1601 Compliance Behavior	13
		1602 Health Promoting Behavior	23
		1603 Health Seeking Behavior	11
		1605 Pain Control	11
		1606 Participation in Health Care Decisions	15
		1608 Symptom Control	11
		1609 Treatment Behavior: Illness or Injury	17
		1610 Hearing Compensation Behavior	12
		1611 Vision Compensation Behavior	12
		1613 Self-Direction of Care	9
		1614 Personal Autonomy	12
		1616 Body Mechanics Performance	12
	Health Beliefs	1703 Health Beliefs: Perceived Resources	16
	Health Knowledge	1804 Knowledge: Energy Conservation	13
		1805 Knowledge: Health Behavior	17
		1811 Knowledge: Prescribed Activity	15
		1813 Knowledge: Treatment Regimen	12
		1814 Knowledge: Treatment Procedure	10
		1823 Knowledge: Health Promotion	20
		1824 Knowledge: Illness Care	9
		1827 Knowledge: Body Mechanics	15
		1828 Knowledge: Fall Prevention	21
		1831 Knowledge: Arthritis Management	28
		1843 Knowledge: Pain Management	41
	Risk Control & Safety	1909 Fall Prevention Behavior	19
		1911 Personal Safety Behavior	24
		1918 Aspiration Prevention	9
Perceived Health	Health & Life Quality	2008 Comfort Status	12
		2010 Comfort Status: Physical	24
		2012 Comfort Status: Sociocultural	15
	Symptom Status	2101 Pain: Disruptive Effects	22
		2102 Pain Level	22
		2103 Symptom Severity	15
		2109 Discomfort Level	37
	Client Satisfaction with Care	3000 Client Satisfaction: Access to Care	13
		3001 Client Satisfaction: Caring	23
		3002 Client Satisfaction: Communication	18

Table 2 (continued)

		3004 Client Satisfaction: Cultural Needs Fulfillment	13
		3005 Client Satisfaction: Functional Assistance	15
		3006 Client Satisfaction: Physical Care	21
		3010 Client Satisfaction: Safety	13
		3011 Client Satisfaction: Symptom Control	14
		3012 Client Satisfaction: Teaching	21
		3013 Client Satisfaction: Technical Aspects of Care	15
		3014 Client Satisfaction	25
		3015 Client Satisfaction: Case Management	34
		3016 Client Satisfaction: Pain Management	17

The domain of Perceived Health contained 389 indicators in 20 NOC outcomes in the classes of Health and Life Quality, Symptom Status, and Client Satisfaction with Care (Moorhead et al., 2008). Of the selected NOC outcomes, a total of 1,436 indicators were represented.

Not all of the NOC indicators were relevant to the purpose of this study. The indicator “300011-Wait times for getting an appointment,” the indicator “300012-Wait times to be seen at an appointment,” and the indicator “300013-Access to support group” in the 3000 Client Satisfaction: Access to Care Resources outcome did not apply to functional status and activities of daily living (Moorhead et al., 2008). Also, the indicators, “101018- “Swallow study findings”, and “101011-Changes in voice quality”, in the 1010 Swallowing Status outcome (Moorhead et al., 2008), did not apply to functional status and activities of daily living. In addition, the indicator “191130-Avoids operating motor vehicle when using substances that impair function,” the indicator “191120- Observes speed limits/rules of the road,” and the indicator “191111- Uses machinery correctly” in the 1911 Personal Safety Behavior outcome (Moorhead et al., 2008), did not apply to functional status and activities of daily living. Further evaluation

of the NOC outcomes and indicators that did not align with RAI-UG text items beyond describing the percentage and frequency did not answer the research question of this exploratory study.

The remaining sections of this chapter will present the data, which are organized by research questions.

Research Question One

1. What is the degree of alignment of select NOC outcomes and respective indicators with the text in the CMS F-Tag 310 rule for activities of daily living-functional status?

Exact Alignment

The CMS rule contained eight text items that aligned exactly with eight NOC indicators. The CMS rule and NOC indicators aligned exactly in the concepts of eating, tube feeding, and personal hygiene. Words such as washing face, washing hands, and perineum hygiene, and personal appearance tasks such as combing hair, shaving, and applying makeup, aligned exactly. Although the content alignment was in agreement, there was a variation in word usage. For example, the NOC indicator 030113 in the outcome 0301 Self Care: Bathing used the words “washes face” (Moorhead et al., 2008), whereas the CMS used the words “washing/drying face” (CMS, 2010). In another example, the NOC indicator 030511 in the outcome 0305 Self Care: Hygiene used the words “applies makeup” (Moorhead et al., 2008), and the CMS used the words “applying makeup” (CMS, 2010). These grammatical differences are attributed to necessary sentence structure in the CMS rule to convey the intent of the regulation. In addition, the verb tense used within the NOC and its indicators is necessary to align with the definition and evaluation scales (see Table 3).

Table 3. CMS F-Tag 310 Rule Text Items with Exact Alignment with NOC Indicators

NOC Outcome	NOC Indicator	CMS F-Tag 310 Rule Text Items	Frequency of CMS F-Tag 310 Rule Text Items in Exact Alignment with NOC Indicators
1008 Nutritional Status: Food & Fluid Intake	100802 Tube feeding intake	Tube feeding	1
0300 Self-Care: Activities of Daily Living	030001 Eating	Eating	1
0301 Self-Care: Bathing	030113 Washes face	Washing/drying face	1
0305 Self-Care: Hygiene	030501 Washes hands	Wash hands	1
	030503 Cleans perineal area	Cleans perineum	1
	030509 Combs or brushes hair	Combing hair	1
	030510 Shaves	Shaving	1
	030511 Applies makeup	Applying make-up	1

Intent Alignment

Data analysis revealed three patterns of intent alignment of the CMS F-Tag 310 rule with the NOC outcomes and indicators. In the first intent alignment pattern, a CMS rule text item aligned in intent match with all of the indicators of a NOC outcome. In the second type of intent alignment pattern, multiple CMS rule text items aligned in intent match with all of the indicators of a NOC outcome. In the third intent alignment pattern, multiple CMS rule text items aligned in intent match with some of the indicators of a NOC outcome. The data in the third intent alignment pattern are delineated in 10% increments to facilitate analysis and clustering to reveal data relationships. The following discussion will provide examples of each type of intent alignment pattern.

In the first intent alignment pattern, 24 text items in the CMS rule aligned in intent match with all of the indicators of 12 NOC outcomes. One such example, the NOC outcome 0902 Communication, aligned with a total of 73 text items in the CMS rule. Of those 73 text items, six or 8.21% aligned in intent match with all of the indicators of the

outcome. Also, the CMS rule contained a total of 106 text items that aligned with the intent of the indicators of the 0212 Coordinated Movement outcome. Of those items, five or 4.71% aligned in intent match with all of the indicators of the NOC outcome. The CMS rule contained two text items that aligned in intent match with all the indicators of the NOC outcomes 2403 Sensory Function: Taste & Smell and 1918 Aspiration Prevention. In addition, seven NOC outcomes contained one CMS F-Tag 310 rule text item that aligned in intent match with all of the indicators of the outcomes: (a) 3002 Client Satisfaction: Communication, (b) 0208 Mobility, (c) 0903 Communication: Expressive, (d) 1610 Hearing Compensation Behavior, (e) 1004 Nutritional Status, (f) 1616 Body Mechanics Performance, and (g) 1100 Oral Hygiene. Table 4 is a synopsis of the text in the CMS rule that aligned with all of the indicators in the NOC outcomes.

Table 4. CMS F-Tag 310 Rule Text Item with Intent Alignment with All Indicators in NOC Outcomes

NOC Outcome	% of CMS F-310 Rule Text Items that Aligned with NOC Indicators	Frequency of CMS F-Tag 310 Rule Text Items that Aligned with NOC Indicators (Total Text Items that aligned with NOC indicator)
0902 Communication	8.21	6 (n-73)
0212 Coordinated Movement	4.71	5 (n-106)
2403 Sensory Function: Taste & Smell	7.69	2 (n-26)
1918 Aspiration Prevention	0.66	2 (n-30)
1014 Appetite	8.33	2 (n-24)
3002 Client Satisfaction: Communication	2.08	1 (n-48)
0208 Mobility	4.34	1 (n-23)
0903 Communication: Expressive	4.16	1 (n-24)
1610 Hearing Compensation Behavior	5.88	1 (n-17)
1004 Nutritional Status	7.14	1 (n-14)
1616 Body Mechanics Performance	5.00	1 (n-20)
1100 Oral Hygiene	2.56	1 (n-39)

As an example of the CMS rule text, the following statement, "...does the resident have specific difficulties in transmitting messages, comprehending messages, and/or using a variety of communication skills such as questions and commands..." (CMS, 2010), aligned in intent with all of the indicators of the NOC outcome 0902 Communication. The following are specific examples of indicators that aligned with this CMS rule text example: (a) "090201-Use of written language," (b) "090202-Use of spoken language," (c) "090210-Accurate interpretation of messages received," and (d) "090208-Exchanges messages accurately with others" (Moorhead et al., 2008).

The second pattern of intent alignment that was generated from the data showed that the CEP contained various text items that aligned with the intent of the indicators of the NOC outcomes. Due to the number of CMS rule text items, only the highest and lowest frequency of CMS rule text items that aligned with NOC indicators will be discussed. A complete listing of CMS F-Tag 310 rule text that aligned in intent match with the indicators of the NOC outcomes is presented in Table 5.

In reviewing the NOC indicators, the NOC outcome 3013 Client Satisfaction: Technical Aspects of Care contained the highest frequency (124 text items or 4.88%) of the CMS rule text that aligned in intent match with all of the indicators of this NOC. In contrast, the NOC outcome 1008 Nutritional Status: Food and Fluid Status contained the lowest frequency (six text items or 0.24%) of the CMS rule text that aligned in intent match with only five indicators of the NOC.

Table 5 contains a complete description of the remaining NOC outcomes that have text items that aligned in intent match with the indicators of a NOC outcome. The columns of the chart correspond to the percentage of CMS F-Tag 310 rule text items that aligned with the intent of NOC indicators, the corresponding number of CMS rule text items that aligned with the intent of NOC indicators, the frequency of CMS rule text items that aligned with the intent of the CMS rule items, and the percentage of the total CMS rule text items that aligned with the intent of the NOC outcomes.

Table 5. CMS F-Tag 310 Rule Text Items with 100% Intent Alignment with NOC Indicators

NOC Outcome	% of CMS F-Tag 310 Rule Text Items that Aligned with the Intent of NOC Indicators (Total Indicators)	Number CMS F-Tag 310 Rule Text Items that Aligned with the intent of NOC Indicators	Frequency of CMS F-Tag 310 Rule Text Items that Aligned with the Intent of NOC Indicators	% of Total CMS F-Tag 310 Rule Text Items
3013 Client Satisfaction: Technical Aspects of Care	100.00 (n-15)	15	124	4.88
0212 Coordinated Movement	100.00 (n-12)	12	106	4.17
0902 Communication	100.00 (n-9)	9	73	2.91
0204 Immobility Consequences: Physiological	100.00 (n-21)	21	68	2.68
1613 Self-Direction of Care	100.00 (n-9)	9	56	2.36
0303 Self-Care: Eating	100.00 (n-16)	16	55	2.16
2402 Sensory Function: Proprioception	100.00 (n-12)	12	48	1.89
3002 Client Satisfaction: Communication	100.00 (n-18)	18	47	1.85
2405 Sensory Function	100.00 (n-7)	7	44	1.61
1100 Oral Hygiene	100.00 (n-21)	21	39	1.53
0503 Urinary Elimination	100.00 (n-21)	21	39	1.53
1918 Aspiration Prevention	100.00 (n-9)	9	30	1.18
2403 Sensory Function: Taste & Smell	100.00 (n-9)	9	26	1.02
1611 Vision Compensation Behavior	100.00 (n-12)	12	24	0.94
1014 Appetite	100.00 (n-9)	9	24	0.94
0903 Communication: Expressive	100.00 (n-8)	8	24	0.94
1616 Body Mechanics Performance	100.00 (n-12)	12	20	0.79
0904 Communication: Receptive	100.00 (n-6)	6	17	0.67
1004 Nutritional Status	100.00 (n-8)	8	14	0.55
1008 Nutritional Status: Food & Fluid Status	100.00 (n-5)	5	6	0.24

As an example, the CMS rule text, "...how the resident uses the toilet room...; transfers on/off the toilet, ...adjusts clothes..." (CMS, 2010), aligned in intent match with the indicator, "021209-Movement in the desired direction," and the intent of the

indicator, “021207- Balanced movement” of the outcome 0212 Coordinated Movement (Moorhead et al., 2008).

The third alignment pattern is presented in Table 6. It contains a description of the CMS F-Tag 310 rule text items that aligned in intent match with some of the indicators of the NOC outcomes. The Weighted Word Frequency distribution of the most common words used two or more times revealed a natural break at approximately 5%. The division in word usage percentage was replicated to identify text item alignment pattern outliers. To identify these outliers, the data are further described by a five or greater percent ratio of the RAI-UG text to the number of indicators that aligned with the text (identified with an *). As an example, 80 text items aligned in intent match with 11 indicators of the NOC outcome 0006 Psychomotor Energy, which calculated to a 7.27% ratio. Due to the vast amount of data, only the NOC outcomes that meet these criteria will be discussed.

In the 99.99 to 90.00% ranking, six NOC outcomes met the 5% alignment criterion. First, 90 or 3.54% of the CMS rule text aligned in intent match with 16 indicators of the NOC outcome 1609 Treatment Behavior: Illness or Injury. Second, 92 or 3.62% of the CMS rule text aligned in intent match with 14 or 93.33% of the indicators of the NOC outcome 2012 Comfort Status: Sociocultural. Also, 120 or 4.72% of the CMS rule text aligned in intent match with 12 or 92.31% of the indicators of the NOC outcome 0900 Cognition. Eighty or 3.15% of the CMS rule text aligned in intent match with 11 or 91.67% of the indicators of the NOC outcome 0006 Psychomotor Energy. The CMS rule contained 117 or 4.60% of the text that aligned in intent match with 21 or 91.30% of the indicators of the NOC outcome 2404 Sensory Function: Vision. Last, 58 or 2.28% of the CMS rule text aligned in intent match with 10 or 90.91% of the indicators of the NOC outcome 1608 Symptom Control.

Table 6. CMS F-Tag 310 Rule Text Items with Intent Alignment of NOC Indicators

NOC Outcome	% of CMS F-Tag 310 Rule Text Items that Aligned with NOC Indicators (Total Indicators)	Number of CMS F-Tag 310 Rule Text Items that Aligned with NOC Indicators	Frequency of CMS F-Tag 310 Rule Text Items that Aligned with the Intent of NOC Indicators	% of Total CMS F-Tag 310 Rule Text Items
1609 Treatment Behavior: Illness or Injury	94.12 (n-17)	16	90*	3.54
2401 Sensory Function: Hearing	94.12 (n-17)	16	68	2.67
2012 Comfort Status: Sociocultural	93.33 (n-15)	14	92*	3.62
1827 Knowledge: Body Mechanics	93.33 (n-15)	14	13	0.51
0900 Cognition	92.31 (n-13)	12	120*	4.72
0006 Psychomotor Energy	91.67 (n-12)	11	80*	3.15
2404 Sensory Function: Vision	91.30 (n-23)	21	117*	4.60
1608 Symptom Control	90.91 (n-11)	10	58*	2.28
1605 Pain Control	90.91 (n-11)	10	10	0.39
1010 Swallowing Status	90.00 (n-20)	18	35	1.38
0502 Urinary Incontinence	89.47 (n-19)	17	33	1.30
2010 Comfort Status: Physical	87.50 (n-24)	21	78	3.07
0501 Bowel Elimination	88.24 (n-17)	15	31	1.22
0210 Transfer Performance	87.50 (n-8)	7	10	0.39
3013 Client Satisfaction: Technical Aspects of Care	86.67 (n-15)	13	124*	4.88
1012 Swallowing Status: Oral Phase	84.62 (n-13)	11	31	1.22
1013 Swallowing Status: Pharyngeal Phase	84.62 (n-13)	11	18	0.71
1804 Knowledge: Energy	84.62 (n-13)	11	13	0.51
2008 Comfort Status	83.33 (n-12)	10	54*	2.13
0918 Heedfulness of Affected Side	83.33 (n-12)	10	35	1.38
0913 Neurological Status: Cranial Sensory/Motor Function	82.61 (n-23)	19	74	2.91
0005 Activity Intolerance	80.00 (n-15)	12	62*	2.44
3006 Client Satisfaction: Physical Care	80.95 (n-21)	17	39	1.53
0500 Bowel Continence	80.00 (n-20)	16	32	1.26
3010 Client Satisfaction: Safety	80.00 (n-13)	12	21	0.83
1811 Knowledge: Prescribed	80.00 (n-15)	12	12	0.47

Table 6 (continued)

3000 Client Satisfaction:	76.92 (n-13)	10	44	1.61
3004 Client Satisfaction: Cultural Needs Fulfillment	76.92 (n-13)	10	12	0.47
3014 Client Satisfaction	75.00(n-24)	24	75	2.95
0208 Mobility	75.00 (n-12)	9	23	0.91
1610 Hearing Compensation	75.00 (n-12)	9	16	0.63
2103 Symptom Severity	73.33 (n-15)	11	64*	2.52
1606 Participation in Health Decisions	73.33 (n-15)	11	52	2.05
3005 Client Satisfaction: Functional Assistance	73.33 (n-15)	11	36	1.42
0911 Neurological Status: Central Motor Control	72.73 (n-11)	8	36	1.42
0202 Balance	70.00 (n-10)	7	34	1.34
3001 Client Satisfaction:	69.57 (n-23)	16	34	1.34
1601 Compliance Behavior	69.23 (n-13)	9	41	1.61
1703 Health Beliefs: Perceived Resources	68.75(n-16)	11	60*	2.36
1909 Fall Prevention Behavior	68.42 (n-19)	13	20	0.7
2102 Pain Level	63.64 (n-22)	14	24	0.94
1011 Swallowing Status:	62.50 (n-16)	10	18	0.71
0201 Ambulation: Wheelchair	62.50 (n-8)	5	6	0.24
2109 Discomfort Level	62.16(n-37)	23	79	3.11
1814 Knowledge: Treatment Procedure	60.00 (n-10)	6	36	1.42
3016 Client Satisfaction:	58.82 (n-17)	10	32	1.26
1603 Health Seeking Behavior	54.55 (n-11)	6	35*	1.38
2101 Pain: Disruptive Effects	54.55 (n-22)	12	65*	2.54
0310 Self-Care: Toileting	53.85 (n-13)	7	7	0.28
1831 Knowledge: Arthritis Pain	50.00 (n-28)	14	14	0.55
0302 Self-Care: Dressing	50.00 (n-14)	7	10	0.39
0905 Concentration	50.00 (n-14)	7	77*	3.01
0300 Self-Care: Activities of Daily Living	45.45 (n-11)	5	6	0.24
1813 Knowledge: Treatment Regimen	42.85 (n-12)	28	48	1.89
1805 Knowledge: Knowledge Health Behavior	41.18 (n-17)	7	15	0.59

Table 6 (continued)

1824 Knowledge: Illness Care	33.33 (n-9)	6	25	0.98
3015 Client Satisfaction: Case Management	32.35 (n-31)	11	27	1.06
0301 Self-Care: Bathing	28.57 (n-4)	4	5	0.20
0313 Self-Care Status	28.57 (n-14)	4	4	0.16
2400 Sensory Function: Cutaneous	27.57 (n-11)	3	9	0.35
0305 Self-Care: Hygiene	26.67 (n-15)	4	4	0.16
1602 Health Promoting Behavior	26.09 (n-23)	6	31	1.21
0203 Body Positioning: Self-Initiated	25.00 (n-12)	3	5	0.20
1911 Personal Safety Behavior	20.83 (n-24)	5	9	0.35
1823 Knowledge: Health Promotion	15.00 (n-20)	3	3	0.12
3012 Client Satisfaction: Teaching	14.29 (n-21)	3	3	0.12
0200 Ambulation	12.50 (n-16)	2	2	0.08
1828 Knowledge: Fall Prevention	9.52 (n-21)	2	2	0.08
0906 Decision Making	9.09 (n-11)	1	1	0.04
3011 Client Satisfaction: Symptom Control	6.25 (n-16)	1	1	0.04
1843 Knowledge: Pain Management	4.88 (n-41)	2	12	0.47

*Greater than 5% ratio between number of NOC indicators and the frequency of CMS F-Tag 310 rule text items.

In the 89.99 to 80.00% ranking, three NOC outcomes met the 5% of alignment criteria. First, the CMS rule contained 124 or 4.88% of the text that aligned in intent match with 13 or 86.67% of the indicators of the NOC outcome 3013 Client Satisfaction: Technical Aspects of Care. Second, 54 or 2.13% of the CMS rule text aligned in intent match with 10 or 83.33% of the indicators of the NOC outcome 2008 Comfort Status. Last, 62 or 2.44% of the CMS text aligned in intent with 12 or 80.00% of the indicators of the outcome 0005 Activity Tolerance.

In the 79.99 to 70.00% ranking, one NOC outcome met the 5% of alignment criteria. The CMS rule contained 64 or 2.52% of the text that aligned in intent match with 11 or 73.33% of the indicators of the NOC outcome 2103 Symptom Severity.

In the 69.99 to 60.00% ranking, one NOC outcome met the 5% of alignment criterion. The CMS rule contained 60 or 2.36% of the text that aligned with 11 or 68.75% of the indicators of the outcome 1703 Health Beliefs: Perceived Resources.

In the 59.99 to 50.00% ranking, three NOC outcomes met the 5% criterion. First, 35 or 1.38% of the CMS rule text aligned in intent match with 6 or 54.55% of the indicators of the NOC outcome Health Seeking Behavior. Second, 65 or 54.55% of the CMS rule text aligned in intent with 12 or 2.54% of the indicators of the NOC outcome 2101 Pain: Disruptive Effects. Last, 77 or 3.01% of the CMS text rule aligned in intent match with 7 or 50.00% of the indicators of the NOC outcome 0905 Concentration.

No other NOC outcomes met the 5% alignment criterion. Furthermore, in the 49.99 to 40.00% ranking, the 39.99 to 30.00% ranking, the 29.99 to 20.00% ranking, the 19.99 to 10.00% ranking, and the 9.99 to 0.01% ranking, no CMS rules met the 5% criterion. Table 6 provides a synopsis of the CMS rule text that aligned with the intent of NOC indicators.

The following example of a CMS sentence fragment is one that aligned with the intent of the indicator, “090009- Information processing” of the NOC outcome 0900 Cognition (Moorhead et al., 2008): “...does the resident have specific difficulties in transmitting messages, comprehending messages, and/or using a variety of communication skills...use of assistive devices...writing skills?” (CMS, 2010).

An example of a text item in the 59.99 to 50.00% ranking, the sentence fragment, “fastens and takes off all of clothing” (CMS, 2010) aligned in intent match with the indicator, “030214-Removes clothing from lower body” of the outcome 0302 Self-Care: Dressing (Moorhead et al., 2008).

No Alignment

The coded text items in the CMS F-Tag 310 rule contained 46 or 30.80% of the text that did not align in exact alignment or intent word match with either the select NOC outcomes or respective indicators. It was found that text in the CMS F-Tag 310 rule did

not align with the NOC outcomes and indicators in two ways. In the first pattern of no alignment, the CMS rule text described nursing process or input and not outcomes of care. In the second no-alignment pattern, functional status or activities of daily living text in the CMS rule did not align with NOC indicators. Also in the second pattern of no exact alignment or intent word match, functional status or activities of daily living NOC indicators did not align with the text items in the CMS rule.

In the first pattern of no alignment, the CMS rule contained text that described nursing process or input and not outcomes of care, which did not answer the research question. The following text is a process example from the CMS F-Tag 310 rule that describes SNHSA surveyor instructions for a substandard nursing care deficiency citation: “If the survey team identifies a pattern of deterioration in ADLs...and it is determined there is a deficient practice, cite at F310” (CMS, 2010).

In the second pattern of no alignment, it was found that the following text in the CMS rule did not align with NOC indicators:

1. “...refusal of care and treatment...to offer alternatives to the resident, surrogate, or representative...” (CMS, 2010).
2. “...donning/removing prosthesis...” (CMS 2010).
3. “...alternative approaches developed...” (CMS, 2010).
4. “...staff provides resident with dementia with cues...” (CMS, 2010).

The NOC did not have an outcome or an indicator that referenced the action of offering a resident or the resident’s representative an alternative nursing intervention or approaches as an outcome indicator of nursing practice. The NOC also did not reference resident prosthesis use in the Self-Care, Ambulation, Mobility, or Client Satisfaction indicators. Staff providing residents with cues was not referenced in the NOC outcomes or indicators.

The second pattern of no alignment also included the NOC outcomes or indicators that described the outcome of nursing practice that did not align with a text item of the

CMS rule. The indicators of the NOC outcome of 0308 Self-Care: Oral Hygiene and 1614 Personal Autonomy outcomes did not align in exact match or intent match with the CMS rule text.

The pattern of no alignment was included in the previous intent alignment tables. The previous tables, in reverse, describe the NOC outcomes and indicators that did not align with the CMS F-Tag 310 rule text. For instance, the NOC outcome 0310 Self-Care: Toileting contained 12 indicators, of which only seven aligned with the intent of the CMS text. The remaining six indicators in the 0310 Self-Care: Toileting outcome did not align with a CMS rule text item (Moorhead et al., 2008).

Research Question Two

2. What is the degree of alignment of select NOC outcomes and respective indicators with the text in Section G of the RAI-UG for activities of daily living-functional status?

Exact Alignment

The RAI-UG contained 21 text items that aligned exactly with 15 indicators in eight of the NOC outcomes. The RAI-UG and NOC indicators aligned exactly with the outcome topics of mobility, dressing, self-care, and nutrition. Three indicators of the NOC outcome of 0308 Self-Care: Oral Hygiene aligned exactly with three RAI-UG text items, whereas the NOC indicator “030509-Combs or brushes hair” (Moorhead et al., 2008) of the NOC outcome 0305 Self-Care: Hygiene aligned with three RAI-UG text items. Also, in the 0305 Self-Care: Hygiene, the indicator, “030501- Washes hands” (Moorhead et al., 2008) aligned with three RAI-UG text items. In contrast, the RAI-UG contained one text item that aligned with only one indicator of each of 12 NOC outcomes, as displayed in Table 7.

The words in the RAI-UG and the NOC indicators, such as hydration, gait, and walking, aligned exactly. Although the content alignment was in agreement, there was a variation in word tense, plural usage, and terminology. For example, the NOC indicator

Table 7. RAI-UG Text Items with Exact Alignment with NOC Indicators

NOC Outcome	NOC Indicator	RAI-UG Text Items	Frequency of RAI-UG Text Items in Exact Alignment with NOC Indicators
0308 Self-Care: Oral Hygiene	030801 Brushes teeth	-Brushes own teeth -Brushes his teeth -Brushing teeth	3
0208 Mobility	020810 Gait	-Gait	1
1004 Nutritional Status	100411 Hydration	-Hydration	1
1008 Nutritional Status: Food & Fluid Intake	100802 Tube Feeding	-Tube feeding	1
	100804 Intravenous fluid intake	-IV fluids	1
	100805 Parenteral nutrition intake	-Total parenteral nutrition	1
0300 Self-Care: Activities of Daily Living	030008 Walking	-Walking	1
0301 Self-Care: Bathing	030113 Washes face	-Washing/drying face	1
0302 Self-Care: Dressing	030204 Puts on clothing upper body	Puts on clothes	1
	030205 Puts clothing on Lower body	-Puts on clothes	1
	030207 Uses fasteners	-Fastens	1
0305 Self-Care: Hygiene	030509 Combs or brushes hair	-Combs own hair -Combing hair -Brush hair	3
	030510 Shaves	-Shaving	1
	030511 Applies makeup	-Applying makeup	1
	030501 Washes hands	-Wash his hands -Wash his hands -Wash hands	3

030501 used the words “Washes hands” (Moorhead et al., 2008) whereas the RAI-UG used the words “Wash his hands” and “Wash hands” (CMS, 2010). Additionally, the NOC indicator 030207 used the words “Uses fasteners” (Moorhead et al., 2008) and the RAI-UG used the word “fastens” (CMS, 2010). These grammatical differences are

attributed to necessary sentence structure in the RAI-UG to convey instructions for completion of the MDS 3.0 resident evaluation tool. The verb tense used within NOC and its indicators is necessary to align with the definition and evaluation scales.

Intent Alignment

Data analysis revealed three patterns of intent alignment of the RAI-UG with the NOC outcomes and indicators. In the first intent alignment pattern, an RAI-UG text item aligned with all of the indicators of a NOC outcome. In the second type of alignment pattern, multiple RAI-UG text items aligned with the intention of all of the indicators of a NOC outcome. In the third pattern, multiple RAI-UG text items aligned with some of the indicators of a NOC outcome. The upcoming discussion will describe each type of intent alignment pattern.

In the first intent alignment pattern, it was found that 74 RAI-UG text items aligned in intent match with all of the indicators in 27 NOC outcomes. One such example, the NOC outcome 0212 Coordinated Movement, aligned with a total of 499 text items in the RAI-UG. Of those 499 text items, 23 or 4.60% aligned in intent match with all the indicators of the outcome. Also, the RAI-UG contained a total of 107 text items that aligned with the intent of the indicators in the 1014 Appetite outcome. Of those items, six or 5.60% aligned in intent match with all the indicators of the NOC outcome. The RAI-UG contained four text items that aligned in intent match with all of the indicators of the NOC outcome 0210 Transfer Performance, the outcome 0300 Self-Care: Activities of Daily Living, the outcome 0200 Ambulation, and the outcome 0301 Self-Care: Bathing. In addition, the RAI-UG contained three text items that aligned in intent match with all of the indicators of the NOC outcome 0310 Self-Care: Toileting. The RAI-UG contained two text items that aligned in intent match with all of the indicators of the NOC outcomes of (a) Self-Care: Hygiene, (b) Symptom Control, (c) Sensory Function: Taste and Smell, (d) Self-Care: Eating, and (e) Body Mechanics Performance. One RAI-UG text item aligned in intent match with all of the indicators in 14 NOC outcomes.

Table 8 is a synopsis of the text in the RAI-UG that aligned with the intent of all of the indicators of the NOC outcomes.

Table 8. RAI-UG Text Item with Intent Alignment with All Indicators in NOC Outcomes

NOC Outcome	% of RAI-UG Text Items that Aligned with NOC Indicators	Frequency of RAI-UG Text Items that Aligned with NOC Indicators (Total Text Items that Aligned with NOC Indicator)
0212 Coordinated Movement	4.60	23 (n-499)
1014 Appetite	5.60	6 (n-107)
0210 Transfer Performance	3.73	4 (n-98)
0300 Self-Care: Activities of Daily Living	2.05	4 (n-195)
0200 Ambulation	1.31	4 (n-304)
0301 Self-Care: Bathing	3.73	4 (n-107)
0310 Self-Care: Toileting	2.63	3 (n-114)
0202 Balance	.81	2 (n-246)
0305 Self-Care: Hygiene	.28	2 (n-71)
1608 Symptom Control	3.77	2 (n-53)
2403 Sensory Function: Taste & Smell	7.40	2 (n-27)
0303 Self-Care: Eating	3.50	2 (n-57)
1616 Body Mechanics Performance	1.39	2 (n-143)
1008 Nutritional Status: Food & Fluid	3.44	1(n-29)
1601 Compliance Behavior	1.75	1(n-57)
1823 Knowledge: Health Promotion	4.54	1(n-22)
1827 Knowledge: Body Mechanics	1.33	1(n-75)
1831 Knowledge: Arthritis Management	3.33	1(n-30)
2405 Sensory Function	4.54	1(n-22)
1613 Self-Direction of Care	4.16	1(n-24)
0204 Immobility Consequences: Physiologic	3.84	1(n-26)
0201 Ambulation: Wheelchair	1.56	1(n-64)
0302 Self-Care: Dressing	1.75	1 (n-57)
0902 Communication	2.04	1(n-49)
0903 Communication: Expressive	3.44	1(n-29)
0904 Communication: Receptive	2.50	1(n-40)
0906 Decision Making	2.50	1(n-40)

The sentence fragment, “A resident...walks a short-stepped, shuffling type gait. Despite the gait abnormality, she is steady” (CMS, 2009), is an example of a text item that aligned in intent match with all of the indicators of the NOC outcome 0212 Coordinated Movement. The following are examples of NOC indicators that aligned with this specific text example: (a) “021204-Smooth movement,” (b) “021206-Steadiness of movement,” (c) “021207-Balanced movement,” and (d) “021209-Movement in desired direction” (Moorhead et al., 2008).

The second intent alignment pattern generated from the data showed that the RAI-UG contained various text items that aligned in intent match with the indicators of the NOC outcomes. Due to the number of RAI-UG text items, only the highest and lowest number of RAI-UG text items that aligned in intent match with NOC indicators will be discussed. A complete listing of RAI-UG text items that aligned in intent match with the indicators of the NOC outcomes is presented in Table 9.

In reviewing the NOC indicators, the NOC outcome 0212 Coordinated Movement contained the highest frequency (499 or 6.67%) of RAI-UG text that aligned in intent match with 12 or 100.00% of its indicators whereas, in contrast, the NOC outcome of 1012 Swallowing Status: Oral Phase contained the lowest frequency of 16 or 0.21% of the RAI-UG text that aligned in intent match with 13 or 100.00% of the indicators of the outcome.

As an example of the RAI-UG text item, “...eating each meal daily by himself...after he had eaten only his bread, he stated he was tired and unable to complete his meal. One staff member physically supported his hand...provided verbal cues to swallow the food ...” (CMS, 2009) aligned in intent match with the indicator, “101405- Reports energy to eat”; it also aligned with the indicator, “101406- Food intake,” the indicator, “101408- Fluid intake,” and the indicator, “101409- Stimulus to eat” of the outcome 1014 Appetite (Moorhead et al., 2008). In addition, of the NOC outcome 1014 Appetite, the RAI-UG text item, “Could become more independent in eating if she

Table 9. RAI-UG Text Items with 100% Intent Alignment with NOC Indicators

NOC Outcome	% of RAI-UG Text Items that Aligned with NOC Indicators (Total Indicators)	Number of RAI-UG Text Items that Aligned with the Intent of NOC Indicators	Frequency of RAI-UG Text Items that Aligned with the Intent of NOC Indicators	% of Total RAI-UG Text Items
0212 Coordinated Movement	100.00 (n-12)	12	499	6.67
3013 Client Satisfaction: Technical Aspects of Care	100.00 (n-15)	15	449	6.02
0200 Ambulation	100.00 (n-16)	16	328	4.40
0202 Balance	100.00 (n-10)	10	246	3.30
0300 Self-Care: Activities of Daily Living	100.00 (n-11)	11	197	2.64
2402 Sensory Function: Proprioception	100.00 (n-12)	12	173	2.32
0900 Cognition	100.00 (n-13)	13	161	2.16
1616 Body Mechanics Performance	100.00 (n-12)	12	143	1.92
0310 Self-Care Status: Toileting	100.00 (n-13)	13	117	1.57
0301 Self-Care: Bathing	100.00 (n-14)	14	107	1.44
1014 Appetite	100.00 (n-9)	9	107	1.44
0918 Heedfulness of Affected Side	100.00 (n-12)	12	100	1.34
0210 Transfer Performance	100.00 (n-8)	8	99	1.33
0905 Concentration	100.00 (n-14)	14	93	1.25
1010 Swallowing Status	100.00 (n-20)	20	88	1.18
1827 Knowledge: Body Mechanics	100.00 (n-15)	15	75	1.01
0305 Self-Care: Hygiene	100.00 (n-15)	15	71	0.95
0201 Ambulation: Wheelchair	100.00 (n-8)	8	64	0.86
0302 Self-Care: Dressing	100.00 (n-14)	14	62	0.83
0303 Self-Care: Eating	100.00 (n-16)	16	57	0.63
1601 Compliance Behavior	100.00 (n-13)	13	57	0.76
1608 Symptom Control	100.00 (n-11)	11	53	0.71
0902 Communication	100.00 (n-9)	9	49	0.66
0006 Psychomotor Energy	100.00 (n-12)	12	48	0.64
1605 Pain Control	100.00 (n-11)	11	41	0.55
0906 Decision Making	100.00 (n-11)	11	40	0.54
0904 Communication: Receptive	100.00 (n-6)	6	40	0.54
1610 Hearing Compensation Behavior	100.00 (n-12)	12	30	0.40
0903 Communication: Expressive	100.00 (n-8)	8	29	0.39

Table 9 (continued)

1008 Nutritional Status: Food & Fluid Intake	100.00 (n-5)	5	29	0.39
2403 Sensory Function: Taste & Smell	100.00 (n-9)	9	27	0.36
0204 Immobility Consequences Physiological	100.00 (n-22)	22	26	0.35
0503 Urinary Elimination	100.00 (n-21)	21	26	0.35
1613 Self-Direction of Care	100.00 (n-9)	9	24	0.32
2405 Sensory Function	100.00 (n-7)	7	22	0.30
1918 Aspiration Prevention	100.00 (n-9)	9	21	0.28
1012 Swallowing Status: Oral Phase	100.00 (n-13)	13	16	0.21

received close supervision and cueing ...” (CMS, 2009) aligned with the intent of indicator, “101401-Desire to eat,” the indicator, “101409- Stimulus to eat, “ and the indicator, “101406-Food intake” (Moorhead et al., 2008).

The third intent alignment pattern is presented in Table 10. It contains a description of the RAI-UG text that aligned in intent match with some of the indicators of the NOC outcomes. The data are displayed according to ranking level of 99.99% to 0.01% of the RAI-UG text that aligned in intent with the NOC indicators. The data are further described by a five or greater percent ratio of the RAI-UG text to the number of indicators that aligned with the text (identified with an *). As an example, 74 RAI-UG text items aligned with 14 indicators of the NOC outcome 1602 Health Promoting Behavior, which calculated to a 5.28% ratio. Due to the vast amount of data, only the NOC outcomes that met these criteria will be discussed.

In the 99.99 to 90.00% ranking, two NOC outcomes met the 5% of alignment criterion. First, the RAI-UG contained 189 or 2.53% of the text that aligned in intent match with 17 or 94.44% of the indicators of the outcome 3002 Client Satisfaction: Communication. Also in this ranking, 165 or 2.21% of the RAI-UG text aligned in intent match with 19 or 90.48% of the indicators of the NOC outcome 3006 Client Satisfaction: Physical Care.

Table 10. RAI-UG Text Items with Intent Alignment with Some NOC Indicators

NOC Outcome	% of RAI-UG Text Items that Aligned with the intent of NOC Indicators (Total Indicators)	Number of RAI-UG Text Items that Aligned with NOC Indicators	Frequency of RAI-UG Text Items that Aligned with the Intent of NOC Indicators	% of Total RAI-UG Text Items
0502 Urinary Continence	94.74 (n-19)	18	74	0.99
3002 Client Satisfaction: Communication	94.44 (n-18)	17	189*	2.53
1606 Participation in Health Care Decisions	93.33 (n-15)	14	26	0.35
3011 Client Satisfaction: Symptom Control	92.86 (n-14)	13	49	0.60
1013 Swallowing Status: Pharyngeal Phase	92.31 (n-13)	12	11	0.15
1804 Knowledge: Energy Conservation	92.31 (n-13)	12	49	0.66
1614 Personal Autonomy	91.67 (n-12)	11	42	0.56
3006 Client Satisfaction: Physical Care	90.48 (n-21)	19	165*	2.21
0500 Bowel Continence	90.00 (n-20)	18	68	0.91
1814 Knowledge: Treatment Procedure	90.00 (n-10)	9	36	0.48
1824 Knowledge: Illness Care	88.89 (n-9)	8	13	0.17
1004 Nutritional Status	87.50 (n-8)	7	22	0.30
1011 Swallowing Status: Esophageal Phase	87.50 (n-16)	14	14	0.19
1811 Knowledge: Prescribed Activity	86.68 (n-15)	13	64	0.86
3005 Client Satisfaction: Functional Assistance	86.67 (n-15)	13	212*	2.84
0005 Activity Intolerance	86.67 (n-15)	13	130*	1.74
2012 Comfort Status: Sociocultural	86.67 (n-15)	13	18	0.24
0913 Neurological Status: Cranial Sensory/Motor Function	83.61 (n-23)	19	53	0.71
0203 Body Positioning: Self-Initiated	83.33 (n-12)	10	130*	1.74
1813 Knowledge: Treatment Regimen	83.33 (n-12)	10	19	0.25
3001 Client Satisfaction: Caring	82.61 (n-23)	19	152*	2.04
1609 Treatment Behavior: Illness or Injury	82.38 (n-17)	14	89	1.19
0501 Bowel Elimination	82.35 (n-17)	14	25	4.00

Table 10 (continued)

0911 Neurological Status: Central Motor Control	81.82 (n-11)	9	132*	1.77
3014 Client Satisfaction	80.00 (n-25)	20	428*	5.74
2103 Perceived Health	80.00 (n-15)	12	40	0.54
2010 Comfort Status: Physical	79.17 (n-24)	19	31	0.42
2404 Sensory Function: Vision	78.26 (n-23)	18	26	0.54
3004 Client Satisfaction: Cultural Needs Fulfillment	76.92 (n-13)	10	47	0.63
1100 Oral Hygiene	76.19 (n-21)	16	36	0.48
0208 Mobility	75.00 (n-12)	9	321*	4.31
1611 Vision Compensation Behavior	75.00 (n-12)	9	13	0.17
1703 Health Beliefs: Perceived Resources	75.00 (n-16)	12	53	0.71
1603 Health Seeking Behavior	72.73 (n-11)	8	51*	0.68
1909 Fall Prevention Behavior	73.68 (n-19)	14	132*	1.77
0308 Self-Care: Oral Hygiene	71.43 (n-7)	5	29	0.39
3000 Client Satisfaction: Access to Care Resources	69.23 (n-13)	9	81*	1.09
3010 Client Satisfaction: Safety	69.23 (n-13)	9	32	0.43
1831 Knowledge: Arthritis Pain	67.86 (n-28)	19	30	0.40
2109 Discomfort Level	67.57 (n-37)	25	72	0.97
2102 Pain Level	63.64 (n-22)	14	24	0.32
1602 Health Promoting Behavior	60.87 (n-23)	14	74*	0.99
2101 Pain: Disruptive Effects	59.09 (n-22)	13	30	0.40
1828 Knowledge: Fall Prevention	57.14 (n-21)	12	91*	1.22
1805 Knowledge: Health Behavior	58.82 (n-17)	10	21	0.28
2008 Comfort Status	58.33 (n-12)	7	12	0.16
0313 Self-Care Status	50.00 (n-14)	7	83*	1.11
3012 Client Satisfaction: Teaching	42.86 (n-21)	9	31	0.42
3016 Client Satisfaction: Pain Management	35.29 (n-17)	6	10	0.13
1843 Knowledge: Pain Management	31.71 (n-41)	13	28	0.38
1823 Knowledge: Health Promotion	35.00 (n-20)	7	22	0.30

Table 10 (continued)

3015 Client Satisfaction: Case Management	29.11 (n-39)	10	70*	0.94
1101 Tissue Integrity: Skin & Mucous Membranes	19.05 (n-21)	4	4	0.05
2401 Sensory Function: Hearing	17.65 (n-17)	3	3	0.04
1911 Personal Safety Behavior	16.67 (n-24)	4	57*	0.76

*Greater than 5% ratio between number of NOC indicators and the frequency of RAI-UG rule text items.

In the 89.99 to 80.00% ranking, seven NOC outcomes met the 5% of alignment criterion. First, the RAI-UG contained 212 or 2.84% of the RAI-UG text that aligned in intent match with 13 or 86.67% of the indicators of the NOC outcome 3005 Client Satisfaction: Functional Assistance. Also, 130 or 1.74% of the RAI-UG text aligned in intent match with 13 or 86.67% of the indicators of the NOC outcome 0005 Activity Tolerance. The RAI-UG contained 130 or 1.74% of the text that aligned in intent match with 10 or 83.33% of the indicators of the outcome 0203 Body Positioning: Self-Initiated. The RAI-UG contained 152 or 2.04% of the text that aligned in intent match with 19 or 82.61% of the indicators of the NOC outcome 3001 Client Satisfaction: Caring. In addition, the RAI-UG contained 132 or 81.82% of the text aligned in intent match with nine or 81.82% of the indicators of the NOC outcome 0911 Neurological Status: Central Motor Control. Last, the RAI-UG contained 428 or 5.74% of the text that aligned in intent match with 20 or 80.00% of the indicators of the NOC outcome 3014 Client Satisfaction.

In the 79.99 to 70.00% ranking, three NOC outcomes met the 5% of alignment criterion. First, 321 or 4.31% of the RAI-UG text aligned in intent match with nine or 75.00% of the indicators of the NOC outcome 0208 Mobility. Second, 51 or 0.68% of the RAI-UG text aligned in intent match with eight or 73.73% of the indicators of the outcome 1603 Health Seeking Behavior. In addition, the RAI-UG contained 132 or

1.77% of the text that aligned in intent match with 14 or 73.68% of the indicators of the outcome 1909 Fall Prevention Behavior. Last, 74 or 0.99% of the RAI-UG text aligned in intent match with 14 or 73.68% of the indicators of the outcome 0502 Urinary Continence.

In the 69.99 to 60.00% ranking, two NOC outcomes met the percent of alignment criterion. First, 81 or 1.09% of the RAI-UG text that aligned in intent match with nine or 69.23% of the indicators of the NOC outcome 3000 Client Satisfaction: Access to Care. The RAI-UG contained 74 or 0.99% of the text that aligned in intent match with 14 indicators of the NOC outcome 1602 Health Promoting Behavior.

In the 59.99 to 50.00% ranking, two NOC outcomes met the 5% of alignment criterion. First, 91 or 1.22% of the RAI-UG text aligned in intent match with 12 or 57.14% of the indicators of the outcome 1828 Knowledge: Fall Prevention. Second, 83 or 1.11% of the RAI-UG text aligned with the intent match with seven or 50.00% of the indicators of the NOC outcome 0313 Self-Care Status. The rankings levels of 49.99 to 40.00%, 39.99 to 30.00%, and 29.99 to 20.00% did not contain NOC outcomes that met the 5% alignment criteria. In the 20.00 to 19.99% ranking, however, 57 or 0.76% of the RAI-UG text aligned in intent match with four or 16.67% of the indicators of the NOC outcome 1911 Personal Safety Behavior. There were no NOC outcomes that ranked in the 10.00% to 0.01% ranking level (see Table 10).

The following RAI-UG sentence fragment, “Eating—cutting meat and opening containers at meals; giving one food item at a time” (CMS, 2009), is an example of an item of text that aligned in intent match with the indicator, “300602- Assistance with eating,” of the NOC outcome 3006 Client Satisfaction: Physical Care (Moorhead et al., 2008).

An example of two RAI-UG text items that aligned in intent match with the indicator, “300002-Availability of assistive staff” of the outcome 3000 Client Satisfaction (Moorhead et al., 2008). The first RAI-UG text that aligned in intent with the NOC

indicator was “verbal cueing and physical guiding of her hand placement on the walker...frequent verbal reminders of how to use her walker, where to place her hands, and to pick up her feet” (CMS, 2009). The second sentence fragment, “needs assistance ambulating transfers to his wheelchair from the bed...stand halfway up and then fall back on the bed... a nursing assistant helps him stand up, pivot, and sit down in his wheelchair” (CMS, 2009), also aligned in intent match with the indicator.

No Alignment

The RAI-UG contained 130 or 40.02% of text that did not align in exact alignment or intent word match with either the NOC outcomes or indicators. It was found that text in the RAI-UG did not align with the NOC outcomes and indicators in two ways. In the first pattern of no alignment, the RAI-UG text described nursing process or input and not outcomes of care. In the second no alignment pattern, functional status or activities of daily living text in the RAI-UG did not align with NOC indicators. Also in the second pattern of no exact alignment or intent word match, functional status or activities of daily living NOC indicators did not align with the text items in the RAI-UG.

An example of the first pattern of no alignment is as follows. The text item, “For each ADL activity: To assist in coding ADL self-performance, please use the flow diagram on page G-6” (CMS.gov), is instruction on how to accurately complete the MDS 3.0 resident evaluation tool.

In second pattern of no alignment, the following three text items in the RAI-UG did not align with NOC outcomes or indicators.

1. “...Differentiating between guided maneuvering and weight-bearing assistance...who is supporting the weight of the resident’s extremity or body” (CMS, 2009).
2. “...if a resident can lift the utensil or cup, but staff assistance is needed to guide the resident’s hand to his or her mouth...” (CMS, 2009).
3. “...supervision, cueing, and reminders...” (CMS, 2009).

The NOC did not have an outcome or an indicator that referenced the nursing action of guided maneuvering or weight-bearing assistance as an outcome indicator of nursing practice. The NOC also did not reference nursing supervision, cueing, or reminders of the NOC outcomes or indicators.

Some of the NOC outcome definitions (0200 Ambulation, 0203 Body Positioning: Self-Initiated, 0208 Mobility, 0210 Transfer Performance, and the Self-Care NOC outcomes) included the words “assistive devices” in the definition (Moorhead et al., 2008). Some of the NOC outcomes included indicators that incorporated assistance with transfers and use of assistive devices (see Table 11). These indicators, however, did not include verbal cueing and reminders, transfer assistance, or weight-bearing assistance. The NOC indicators also did not define partial weight-bearing, guided maneuvering, or human assistance and supervision.

Table 11. NOC Indicators with Transfer Assistance and Assistive Devices

NOC Outcome	NOC Indicator
3014 Client Satisfaction	301414 Assistance to achieve mobility
3010 Client Satisfaction: Safety	301005 Assistance with transfer
	301006 Assistance with ambulation
3006 Client Satisfaction: Physical Care	300617 Assistance with ambulation
	300621 Assistance with transfer
3005 Client Satisfaction: Functional Assistance	300504 Assistance with physical activity
1911 Personal Safety Behavior	191107 Uses assistive devices correctly
1909 Fall Prevention Behavior	190901 Uses assistive devices correctly
1828 Knowledge: Fall Prevention	182801 Correct use of assistive devices
1616 Body Mechanics Performance	161607 Uses supportive devices correctly

The second pattern of no alignment also included the NOC outcomes or indicators that described the outcome of nursing practice that did not align with a text item of the RAI-UG. The indicators in the 2400 Sensory Function: Cutaneous NOC outcome did not align in exact match or intent match with RAI-UG text.

The second no alignment pattern was included in the previous intent alignment tables. The previous tables, in reverse, described the NOC outcomes and indicators that did not align with the RAI-UG text. For instance, the RAI-UG contained text that aligned in intent match with three of the 17 indicators of the NOC outcome 2401 Sensory Function: Hearing. The remaining 14 indicators in the 2401 Sensory Function: Hearing outcome did not align with an RAI-UG text item. Indicators such as “240109-Turns to sound” or “240110-Shows interest in auditory stimuli” did not align in an exact word or intent match with the RAI-UG text.

Not all of the NOC indicators were relevant to the purpose of this study. The indicator “300011-Wait times for getting an appointment,” the indicator “300012-Wait times to be seen at an appointment,” and the indicator “300013-Access to support group” in the 3000 Client Satisfaction: Access to Care Resources outcome, as examples, did not apply to functional status and activities of daily living (Moorhead et al., 2008). Further evaluation of the NOC outcomes and indicators that did not align with RAI-UG text items beyond describing the percentage and frequency did not answer the research question of this exploratory study.

Research Question Three

3. What is the degree of alignment of select NOC outcomes and respective indicators with the text in the CEP for Activities of Daily Living and Range of Motion?

Exact Alignment

The CEP contained 22 text items that aligned exactly with eight indicators of the NOC outcome of 0300 Self-Care: Activities of Daily Living. The NOC indicator “030005-Grooming” (Moorhead et al., 2008) aligned exactly with four CEP text items. The NOC indicators (a) “030012-Positions self,” (b) “030001-Eating,” (c) “030002-Dressing,” (d) “030003- Toileting,” and (e) “030007-Oral Hygiene” (Moorhead et al., 2008) aligned exactly with three CEP text items. Also, in the 0300 Self-Care: Activities

of Daily Living outcome, the indicator “030010- Transfer performance” aligned with two CEP text items. The CEP contained one text item that aligned exactly with the indicator “030004-Bathing” as displayed in Table 12.

Table 12. CEP Text Items with Exact Word Alignment with NOC Indicators

NOC Outcome	NOC Indicator	CEP Text Items	Frequency of CEP Text Items in Exact Alignment with NOC Indicators
0300 Self-Care: Activities of Daily Living	030005 Grooming	Grooming	4
	030012 Positions self	Positioning	3
	030001 Eating	Eating	3
	030002 Dressing	Dressing	3
	030003 Toileting	Toileting	3
	030007 Oral Hygiene	Oral hygiene	3
	030010 Transfer Performance	Transferring	2
	030004 Bathing	Bathing	1

Although the content alignment was in agreement, there was a variation in word tense and plural usage. For example, the NOC indicator 030012 used the words “Positions self” (Moorhead et al., 2008) whereas the CEP used the word “positioning”(Kramer, 2008). The NOC indicator 030010 used the words “Transfer Performance” (Moorhead et al., 2008) whereas the CEP used the word “Transferring”(Kramer, 2008). These grammatical differences are attributed to necessary sentence structure in the CEP to convey instructions for completion of the recertification survey evaluation tool. The verb tense used with of the NOC and its indicators is necessary to align with the definition and evaluation scales.

Intent Alignment

Data analysis revealed three patterns of intent alignment of the CEP with the NOC outcomes and indicators. In the first pattern of intent alignment, a CEP text item

aligned with all of the indicators of a NOC outcome. In the second pattern of intent alignment, multiple CEP text items aligned with the intention of all of the indicators of a NOC outcome. In the third pattern of intent alignment, multiple CEP text items aligned with some of the indicators of a NOC outcome. The upcoming discussion will describe each type of intent alignment pattern.

In the first intent alignment pattern, it was found that 24 CEP text items aligned in intent match with all of the indicators of 15 NOC outcomes. One such example, the NOC outcome 3002 Client Satisfaction: Communication, aligned with a total of 113 text items in the CEP. Of those 113 text items, four or 3.54% aligned in intent match with all of the indicators of the outcome. Also, the CEP contained a total of 56 text items that aligned with the intent of the indicators in the Client Satisfaction: Cultural Needs Fulfillment outcome. Of those items, two or 3.57% aligned in intent match with all of the indicators of the NOC outcome. In addition, the NOC outcomes (a) 0904 Communication: Receptive, (b) 3011 Client Satisfaction: Symptom Control, (c) 0200 Ambulation, (d) 1014 Appetite, and (e) 2102 Pain Level contained two CEP text items that aligned with the intent of all indicators. Eight outcomes contained one CEP text item that aligned with a NOC indicator in those outcomes. Table 13 is a synopsis of the text in the CEP that aligned with the intent of all of the indicators of the NOC outcomes.

The sentence fragment, "Resident's/representative's involvement in care plan development including defining the approaches and goals, and interventions reflect preferences and choices" (Kramer, 2008), is an example of a text item that aligned with the intent of all of the indicators of the NOC outcome 3004 Client Satisfaction: Cultural Needs Fulfillment. The following are examples of NOC indicators that aligned with this specific text example: (a) "300401-Respect for cultural beliefs," (b) "300404-Respect for personal perspectives," (c) "300412- Respect for family members' participation in care," and (d) "300413-Respect for family members' participation in decisions" (Moorhead et al., 2008).

Table 13. CEP Text Item with Intent Alignment with All Indicators in NOC Outcomes

NOC Outcome	% of CEP Text Items that Aligned with NOC Indicators	Frequency of CEP Text Items that Aligned with NOC Indicators (Total Text Items that Aligned with NOC Indicator)
3002 Client Satisfaction: Communication	3.54	4 (n-113)
3004 Client Satisfaction: Cultural Needs Fulfillment	3.57	2 (n-56)
0904 Communication: Receptive	6.45	2 (n-31)
3011 Client Satisfaction: Symptom Control	6.08	2 (n-106)
0200 Ambulation	5.26	2 (n-38)
1014 Appetite	8.33	2 (n-24)
2102 Pain Level	2.04	2 (n-83)
0212 Coordinated Movement	1.58	1 (n-63)
1813 Knowledge: Treatment Regimen	2.17	1 (n-46)
0203 Body Positioning: Self-Initiated	1.42	1 (n-70)
0202 Balance	5.0	1 (n-20)
0308 Self-Care: Oral Hygiene	12.5	1 (n-8)
0310 Self-Care: Toileting	8.33	1 (n-12)
0300 Self-Care: Activities of Daily Living	9.09	1 (n-11)
0210 Transfer Performance	3.03	1 (n-33)

The second pattern of intent alignment generated from the data showed that the CEP contained various text items that aligned with the intent of the indicators of the NOC outcomes. Due to the number of CEP text items, only the highest and lowest number of CEP text that aligned with NOC indicators will be discussed. A complete listing of CEP text that aligned with the intent of the indicators of the NOC outcomes is presented in Table 14.

Among the NOC indicators, the NOC outcome 2109 Discomfort Level contained the highest frequency (144 or 3.75%) of CEP text that aligned with the intent of the 37 or 100.00% of the indicators whereas the NOC outcome of 0308 Self-Care: Oral Hygiene contained the lowest frequency (8 or 0.21%) of the CEP text that aligned with the intent of 17 or 100.00% of the indicators of the outcome.

Table 14. CEP Text Items with 100% Intent Alignment with NOC Indicators

NOC Label	% of CEP Text Items that Aligned with the Intent of NOC Indicators (Total Indicators)	Number CEP Text Items that Aligned with the Intent of NOC Indicators	Frequency of CEP Text Items with the Intent of NOC Indicators	% of Total CEP Text Items
2109 Discomfort Level	100.00 (n-37)	37	144	3.75
3002 Client Satisfaction: Communication	100.00 (n-18)	18	113	3.00
1827 Knowledge: Body Mechanics	100.00 (n-15)	15	112	3.00
3011 Client Satisfaction: Symptom Control	100.00 (n-14)	14	106	3.00
2102 Pain Level	100.00 (n-22)	22	83	2.00
0203 Body Positioning: Self-Initiated	100.00 (n-12)	12	70	2.00
1010 Swallowing Status	100.00 (n-20)	20	69	2.00
0212 Coordinated Movement	100.00 (n-12)	12	63	2.00
3004 Client Satisfaction: Cultural Needs Fulfillment	100.00 (n-13)	13	56	1.46
1814 Knowledge: Treatment Procedure	100.00 (n-10)	10	42	1.09
1613 Self-Direction of Care	100.00 (n-9)	9	34	0.89
0210 Transfer Performance	100.00 (n-8)	8	33	0.86
0904 Communication: Receptive	100.00 (n-6)	6	31	0.81
1014 Appetite	100.00 (n-9)	9	24	0.63
0202 Balance	100.00 (n-10)	10	20	0.52
0310 Self-Care: Toileting	100.00 (n-13)	13	12	0.31
0300 Self-Care: Activities of Daily Living	100.00 (n-11)	11	13	0.29
0308 Self-Care: Oral Hygiene	100.00 (n-7)	7	8	0.21

As an example, the CEP text item, “A resident who has been placed in a wheelchair or reclining chair is positioned in correct alignment to prevent leaning, with limbs and head supported...” (Kramer, 2008), aligned with the intent of the indicator “210917- Muscle aches” of the outcome 2109 Discomfort Level (Moorhead et al., 2008). Also, of the NOC outcome 3011 Client Satisfaction: Symptom Control, the CEP text item, “...positioning the resident in bed to maintain proper body alignment, with limbs and head supported in a manner to prevent complications...”(Kramer, 2008), aligned with the intent of the indicator “301115- Care to control symptoms,” the indicator “301104- Investigation of cause of symptoms,” and the indicator, “301105- Actions taken to prevent symptoms” (Moorhead et al., 2008).

The third pattern of intent alignment is presented in Table 15. It contains a description of the CEP text that aligned in intent match with some of the indicators of the NOC outcomes. The data are displayed according to ranking level of 99.99% to 0.01% of the CEP text that aligned in intent with the NOC indicators. The data are further described by a five or greater percent ratio of the CEP text to the number of indicators that aligned with the text (identified with an *). As an example, 106 CEP text items aligned with 13 indicators of the NOC outcome 1811 Knowledge: Prescribed Activity, which calculated to an 8.15% ratio. Because of the vast amount of data, only the NOC outcomes that met these criteria will be discussed.

In the 99.99 to 90.00% ranking, two NOC outcomes met the 5% of alignment criterion. First, the CEP contained 105 or 3.00% text that aligned in intent match with 14 or 93.00% of the indicators of the outcome 3005 Client Satisfaction: Functional Status. Second, the CEP contained 163 or 4.25% of the text that aligned in intent match with 14 or 93.33% of the indicators of the outcome 3013 Client Satisfaction: Technical Aspects of Care.

Table 15. CEP Text Items with Intent Alignment with Some NOC Indicators

NOC Label	% of CEP Text Items that Aligned with the Intent of NOC Indicators (Total Indicators)	Number of CEP Text Items that Aligned with the Intent of NOC Indicators	Frequency of CEP Text Items with the Intent of NOC Indicators	% of Total CEP Text Items
2010 Comfort Status: Physical	96.00 (n-24)	23	101	3.00
0204 Immobility Consequences: Physiological	95.00 (n-22)	21	80	2.00
1100 Oral Hygiene	95.00 (n-21)	20	69	2.00
0502 Urinary Incontinence	94.74 (n-19)	18	33	0.86
2401 Sensory Function: Hearing	94.00 (n-17)	16	68*	2.00
1011 Swallowing Status: Esophageal Phase	93.75 (n-16)	15	37	0.96
0900 Cognition	93.75 (n-16)	13	37	0.96
0303 Self-Care: Eating	93.75 (n-16)	15	15	0.39
3005 Client Satisfaction: Functional Assistance	93.00 (n-15)	14	105*	3.00
3013 Client Satisfaction: Technical Aspects of Care	93.33 (n-15)	14	163*	4.25
2103 Perceived Health	93.33 (n-15)	14	51	1.33
0005 Activity Intolerance	93.33 (n-15)	14	47	1.22
0905 Concentration	92.86 (n-14)	13	49	1.28
1012 Swallowing Status: Oral Phase	92.31 (n-13)	12	47	1.22
0302 Self-Care: Dressing	92.86 (n-14)	13	14	0.36
1013 Swallowing Status: Pharyngeal Phase	92.31 (n-13)	12	36	94.00
2402 Sensory Function: Proprioception	91.67 (n-12)	11	52	1.35
0918 Heedfulness of Affected Side	91.67 (n-12)	11	49	1.28
1813 Knowledge: Treatment Regimen	91.67 (n-12)	11	46	1.20
0006 Psychomotor Energy	91.67 (n-12)	11	35	0.91
0503 Urinary Elimination	90.48 (n-21)	19	19	0.50
3012 Client Satisfaction: Teaching	90.48 (n-21)	19	14	0.36
0902 Communication	88.89 (n-9)	8	32	0.83
1843 Knowledge: Pain	88.00 (n-41)	36	142	4.00
0201 Ambulation: Wheelchair	87.50 (n-8)	7	15	0.39
1811 Knowledge: Prescribed Activity	86.68 (n-15)	13	106*	2.76
3006 Client Satisfaction: Physical Care	86.00 (n-21)	18	58	2.00

Table 15 (continued)

2405 Sensory Function	85.71 (n-7)	6	18	0.47
0500 Bowel Continence	85.00 (n-20)	17	22	0.57
0208 Mobility	83.33 (n-12)	10	42	1.09
1611 Vision Compensation Behavior	83.33 (n-12)	10	31	0.81
3016 Client Satisfaction: Pain Management	82.00 (n-17)	14	91*	2.00
0911 Neurological Status: Central Motor Control	81.82 (n-11)	9	35	0.91
1603 Health Seeking Behavior	81.82 (n-11)	9	31	0.81
3014 Client Satisfaction: Technical Aspects of Care	80.00 (n-25)	20	123*	3.00
3001 Client Satisfaction: Caring	78.00 (n-23)	18	100*	3.00
2403 Sensory Function: Taste & Smell	77.78 (n-9)	7	21	0.55
1918 Aspiration Prevention	77.78 (n-9)	7	7	0.18
0501 Bowel Elimination	76.47 (n-17)	13	13	0.34
1703 Health Beliefs: Perceived Resources	75.00 (n-16)	12	58	2.00
1831 Knowledge: Arthritis Pain	75.00 (n-28)	21	57	1.00
1616 Body Mechanics Performance	75.00 (n-12)	9	35	0.91
2404 Sensory Function: Vision	73.91 (n-23)	17	48	1.25
0913 Neurological Status: Cranial Sensory/Motor Function	73.91 (n-23)	17	39	1.02
0301 Self-Care: Bathing	71.43 (n-14)	10	10	0.26
3015 Client Satisfaction: Case Management	71.00 (n-34)	24	79*	2.00
1601 Compliance Behavior	69.23 (n-13)	9	34	0.89
2101 Pain: Disruptive Effects	68.18 (n-21)	15	54	1.41
1606 Participation in Health Care Decisions	66.67 (n-15)	10	17	0.44
1004 Nutritional Status	62.50 (n-8)	5	5	0.13
1008 Nutritional Status: Food & Fluid Intake	60.00 (n-5)	3	3	0.08
1609 Treatment Behavior: Illness or Injury	58.82 (n-17)	10	34	0.89
1828 Knowledge: Fall Prevention	57.14 (n-21)	12	50	1.30
1824 Knowledge: Illness Care	55.56 (n-9)	5	10	0.26
2400 Sensory Function: Cutaneous	54.55 (n-11)	6	15	0.39
3000 Client Satisfaction: Access to Care Resources	53.85 (n-13)	7	45*	1.17
1909 Fall Prevention Behavior	52.63 (n-19)	10	20	0.52

Table 15 (continued)

1610 Hearing Compensation Behavior	50.00 (n-12)	6	24	0.63
1804 Knowledge: Energy Conservation	46.15 (n-16)	6	6	0.16
1605 Pain Control	45.45 (n-11)	5	11	0.29
0313 Self-Care Status	42.86 (n-6)	6	6	0.16
3010 Client Satisfaction: Safety	3.33 (n-12)	4	10	0.26
1614 Personal Autonomy	25.00 (n-12)	3	9	0.23
1602 Health Promoting Behavior	23.09 (n-23)	6	6	0.16
1823 Knowledge: Health Promotion	20.00 (n-20)	4	7	0.18
1101 Tissue Integrity: Skin and Mucous Membranes	19.05 (n-21)	4	12	0.31
2008 Comfort Status	16.67 (n-12)	2	2	0.05
1805 Knowledge: Health Behavior	11.76 (n-17)	2	3	0.08
1911 Personal Safety Behavior	8.33 (n-24)	2	2	0.05
2012 Comfort Status: Sociocultural	6.67 (n-15)	1	3	0.08
0305 Self-Care: Hygiene	6.67 (n-15)	1	1	0.03

*Greater than 5% ratio between number of NOC and the frequency of CEP text items.

In the 89.99 to 80.00% ranking, three NOC outcomes met the 5% of alignment criterion. The CEP contained 106 or 2.76% of the CEP text that aligned in intent match with 13 or 86.68% of the indicators of the NOC outcome 1811 Knowledge: Prescribed Activity. Also, 91 or 2.00% of the CEP text aligned in intent with 14 or 82.00% of the indicators of the NOC outcome 3016 Client Satisfaction: Pain Management. The CEP contained 123 or 3.00% of the text that aligned in intent with 20 or 80.00% of the indicators of the outcome 3014 Client Satisfaction: Technical Aspects of Care.

In the 79.99 to 70.00% ranking, one NOC outcome met the 5% of alignment criterion. The CEP contained 100 or 3.00% text items that aligned in intent match with 18 or 78.00% of the indicators of the NOC outcome 3001 Client Satisfaction: Caring.

In the 69.99 to 60.00% ranking, no NOC outcomes met the 5% of alignment criterion. In the 59.99 to 50.00% ranking, one NOC outcome met the 5% of alignment criterion. The CEP contained 45 or 1.17% text items that aligned in intent match with seven or 53.85% of the indicators of the outcome 3000 Client Satisfaction: Access to Care Resources.

In the ranking levels of 49.99 to 40.00% ranking, the 39.99 to 30.00% ranking, the 29.00 to 20.00% ranking, the 19.99 to 10.00% ranking, and the 9.99 to 0.01% ranking, no NOC outcomes met the 5% of alignment criterion.

The following CEP sentence fragment in the 90% ranking, “allowing ... wash his/her face, brush his/her teeth or comb his/her hair by himself/herself or with cues,...to stand up and ambulate...with an assistive device...” (Kramer, 2008), is an example of an item of text that aligned with the intent of the indicator “301304-Capability of staff” of the NOC outcome 3013 Client Satisfaction: Technical Aspects of Care (Moorhead et al., 2008). In the 70% ranking level, the sentence fragment, “provide encouragement and assistance, as needed, in order for the resident to complete...”(Kramer, 2008), aligned with the intent of the indicator “300503-Encouraged to be as active as possible” of the outcome 3005 Client Satisfaction: Functional Assistance (Moorhead et al., 2008).

No Alignment

The CEP contained 22 or 59.16% text that did not align in exact alignment or intent word match with either the NOC outcomes or indicators. It was found that text in the CEP did not align with the NOC outcomes and indicators in two ways. In the first pattern of no alignment, the CEP text described nursing process or input and not outcomes of care. In the second no alignment pattern, functional status or activities of daily living text in the CEP did not align with NOC indicators. Also in the second pattern of no exact alignment or intent word match, functional status or activities of daily living NOC indicators did not align with the text items in the CEP.

An example of the first pattern of no alignment is as follows. The text item, “Did the facility assess adequately to determine the level of ADL (self-care), functional ROM and contractures, the risk, causal and contributing factors?”(Kramer, 2008), is an instruction to SNHSA surveyors on how to accurately complete the CEP evaluation tool.

In the second no alignment pattern, the following two text items in the CEP did not align with NOC outcomes or indicators:

1. “If interventions were refused...alternatives and/or other alternative approaches were offered” (Kramer, 2008).
2. “...sufficient time...to complete tasks...(Kramer, 2008)

The NOC did not have an outcome or an indicator that referenced the action of offering a resident or the resident’s representative an alternative nursing intervention or approaches as an outcome indicator of nursing practice. The NOC also did not reference nursing staff allowing sufficient time for a resident to complete a task or time for a resident to comprehend communication.

The second pattern of no alignment also included the NOC outcomes or indicators that described the outcome of nursing practice that did not align with a text item of the CEP. The NOC outcomes 0903 Communication: Expressive, 0906 Decision Making, and the 1608 Symptom Control did not align in exact match or intent match with CEP text.

The second no alignment pattern was included in the previous intent alignment tables. The previous tables, in reverse, described the NOC outcomes and indicators that did not align with the CEP text. For instance, the NOC outcome 3006 Client Satisfaction: Physical Care contained 21 indicators, of which only 18 aligned with the intent of the CEP text. The remaining three indicators in the 3006 Client Satisfaction: Physical Care outcome did not align with a CEP text item.

Weighted Word Frequency Distribution

As another method of evaluating the data collected in this study, a weighted Word Frequency Distribution of the most frequently used 1000 words revealed the intent of a

document. The following discussion describes the most common words used two or more times in the CMS F-310 rule, the RAI-UG, and the CEP.

CMS F-Tag 310 Rule

The CMS F-Tag 310 rule contained 3,281 text items that aligned with NOC outcomes and indicators. Of the most frequently used 1000 words in the CMS rule, 15 were used two or more times. The six most frequently used words, “pressure,” “resident,” “ulcer,” “care,” “may,” and “ulcers,” were used a total of 1,147 times in the CMS F-Tag 310 rule. The words “ulcer,” “ulcers,” “risk,” “wound,” “treatment,” “tissue,” “healing,” and “skin” were used 737 times. Table 16 is a synopsis of words that were used two or more times in the CMS F-Tag 310 rule.

Table 16. CMS F-310 Rule Word Frequency Distribution of Words Used Two or More Times

Word	Frequency of Use	Weighted percentage (%)
Pressure	324	2.85
Resident	283	2.49
Ulcer	193	1.70
Care	118	1.04
May	117	1.03
Ulcers	113	1.00
Risk	87	0.77
Wound	84	0.74
Facility	77	0.68
Treatment	73	0.64
An	68	0.60
Has	67	0.59
Tissue	66	0.58
Healing	64	0.56
Skin	57	0.50

RAI-UG

The RAI-UG contained a combination of 7,446 text items that aligned with NOC outcomes and indicators. Of the most frequently used 1000 words in the RAI-UG, 17

were used two or more times. The word “resident” was the most commonly used word (323 times). The nine words “section,” “staff,” “code,” “coded,” “period,” “back,” “look,” “coding,” and “from” were used a total of 1,337 times. A combination of the seven words “assistance,” “during,” “do,” “activity,” “would,” “her,” and “day” were used a total of 935 times. Table 17 is a synopsis of words that were used two or more times in the RAI-UG.

Table 17. RAI-UG Word Frequency Distribution of Words Used Two or More Times

Word	Frequency of Use	Weighted percentage (%)
Resident	323	2.02
Section	224	1.40
Staff	218	1.37
Code	207	1.30
Assistance	161	1.01
During	154	0.96
Do	139	0.87
Coded	136	0.85
Activity	125	0.78
Period	123	0.77
Would	121	0.76
Her	118	0.74
Day	117	0.73
Back	115	0.72
Look	107	0.67
Coding	106	0.66
From	101	0.63

CEP

The CEP contained a combination of 1,084 text items that aligned with NOC outcomes and indicators. Of the most frequently used 1000 words in the CEP, 32 were used two or more times. The five most frequently used words were “question,” “resident,” “care,” “interventions,” and “staff.” Other most frequently used words, including “ROM,” “contractures,” “positioning,” “range,” and “ADL(s),” were used a

total of 99 times. The words “decline” (used 10 times) and “goals” (used 9 times) ranked near the bottom of the most frequently used words. Table 18 is a synopsis of words that were used two or more times in the CEP.

Table 18. CEP Word Frequency Distribution of Words Used Two or More Times

Word	Frequency of Use	Weighted percentage (%)
Question	97	5.50
Resident	69	3.91
Care	46	3.91
Interventions	30	1.70
Staff	26	1.47
ADL	23	1.30
Motion	23	1.30
Range	23	1.30
Whether	23	1.30
Plan	21	1.19
Determine	17	0.96
Provide	17	0.96
Services	17	0.96
Who	16	0.91
Facility	15	0.85
ROM	15	0.85
Needed	14	0.79
Positioning	14	0.79
ADLs	13	0.74
Approaches	13	0.74
How	12	0.68
Appropriate	11	0.62
Contractures	11	0.62
Have	11	0.62
Recognized	11	0.62
Any	10	0.57
Consistent	10	0.57
Decline	10	0.57
Provision	10	0.57
Goals	9	0.51
Has	9	0.51
Were	9	0.51

Summary

Upon application of the previously described research methodology, this chapter described the degree of alignment of the NOC outcomes and respective indicators for functional status-activities of daily living with the CMS F-Tag 310 rule, the RAI-UG, and the CEP for functional status-activities of daily living. Through the use of tables and discussion, the data results for each CMS document and NOC document were described. In addition, this chapter described the weighted word frequency distribution of the most common words that were used two or more times in the NOC, the CMS rule, the RAI-UG, and the CEP. The next chapter will present conclusions and recommendations for future study.

CHAPTER 5

CONCLUSION

The premise of this study was based on the reports of the SNHSA surveyors that the CMS administrative rules and surveyor guidance manual were too complex and ambiguous to assign deficiency severity scores accurately (U. S. GAO, 2009). In reviewing the nursing literature, it was noted that the standardization of nursing language has been suggested as a method (Clancy, 2006) that may increase the clarity and usability of the complex CMS process of assigning deficiency severity scores. Also, using a standardized nursing language as a cross-link for the CMS rules and the surveyor guidance manual may be a viable solution to improve the quality of SNHSA surveyor's documentation to connect evidence of substandard nursing care to a CMS rule (Hamilton, 2008). Thus, the researcher, who was familiar with the Nursing Outcomes Classification (NOC), concluded that the first step toward exploring the viability of a NOC for NHs would be to examine whether alignment could be achieved across NOC with the CMS rules and specific documents referenced in the surveyor guidance manual.

To test the viability of using the NOC as a linkage, this body of work examined the degree of alignment of select NOC outcomes and their respective indicators with CMS rules and specific documents used in a recertification survey by the state nursing home survey agency (SNHSA) nurse surveyors. Upon answering the research questions and describing the data in Chapter 4, the researcher confirmed that there was sufficient evidence of a degree of alignment of select NOCs with the CMS rule, the Resident Assessment Instrument-Users Guide (RAI-UG), and the Critical Elements Pathway (CEP) for activities of daily living and functional status. The findings further suggest that a NOC specific to nursing homes (NH) may be a viable cross-link to the full guidance manual. During data analysis, however, it became evident that the degree of alignment of the select NOC outcomes and indicators with the text items in the CMS rule and specific

documents provided only a segment of the information that would be necessary for a NOC specific to NHs.

The forthcoming sections of this chapter will provide an overview of the conclusions of the data analysis described in the preceding chapter. The discussion will review the data conclusions related to the origins of the CMS documents, the shared connotations found in the analysis of the data, the degree of text item alignment, and a review of the text items that did not align with NOC outcomes or indicators. The discussion will progress into a discussion of the changes suggested in the research methodology used to explore the degree of alignment of the select NOC to the CSM F-Tag 310 rule, the RAI-UG, and the CEP. Recommendations for future research to develop a NOC specific to NHs, research into the text items that aligned in intent match with the select NOC outcomes and indicators. The chapter will conclude with a discussion of the conceptual framework developed for this work.

Data Analysis Conclusions

The research questions in this study examined how the standardized language of NOC outcomes and its indicators were aligned with the text items of CMS rules, the RAI-UG, and the CEP. The data conclusions from this body of work revealed additional interesting patterns in the alignment of the select NOC outcomes and respective indicators with the text items in the CMS rule and documents. The first data pattern suggested that there was a relationship of the origin of the CMS rule and documents to the degree of alignment of text items with the select NOC outcomes and indicators. In the second data pattern, it was found that the intent of the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP shared three common connotations. In the third pattern, an association was found in the number of words, sentence fragments, or sentences used to convey the intent of a text item with the degree of alignment with the select NOC outcomes and indicators.

Relationship of Origin of Documents to NOC

Outcomes and Indicators

RAI-UG. The first data pattern that was revealed suggested that there may be a relationship in the origin of the CMS rule, the RAI-UG, and the CEP to the degree of alignment with the select NOC outcomes and the respective indicators. The RAI-UG had the largest proportion of text items that aligned in exact match with the select NOC outcomes and their respective indicators. Specifically, the RAI-UG contained 21 text items that aligned exactly with 15 indicators in eight of the NOC outcomes. The RAI-UG also had the greatest number of multiple text items that had 100% intent alignment of the indicators in 21 NOC outcomes.

It may be concluded that this finding is supported by the fact that the RAI-UG was developed by a large representation of expert nurses and nurse clinicians, and thus, may reflect the language used by nurses to communicate nursing practice. In the language selected by the CMS Division of Nursing Homes development team, the RAI-UG is consistent and reflects the contribution of nurse experts in the assessment, planning, implementation, and evaluation of nursing care that represents nursing practice. The word frequency distribution of the RAI-UG validates the influence of nurse experts when it used terms such as resident autonomy, and residents' ability, capacity, or willingness to participate in nursing care and nursing interventions. In comparison, the language of the select NOCs also focused on a resident-centered approach to nursing care.

CEP. The text items of the CEP aligned in exact match with the indicators in only one of the Self-Care NOC outcomes. The largest percentage of the text items in the CEP ranked in the Intent Alignment and No Alignment categories. This finding may be substantiated by the fact that the Division of Health Care Policy and Research sought the knowledge of nursing experts primarily during the reliability and validity testing phase of development. It could be argued that failing to include more nurses in the writing of the text items in the CEP explains why fewer common nursing words were found. It was

also found that the focus of nursing practice in the CEP, as represented in the most commonly used words, communicated nursing staff performance expectations (e.g., question, facility, staff, care, plan, provide, interventions, and services). The comparison of the word frequency of the RAI-UG and NOC that was developed with a strong nursing influence suggests that including more nurses in the early stages of development of the CEP may have shifted the focus away from staff performance into a more resident-centered approach.

It was also found that the text items in the CEP were broader in scope and aligned with NOC outcomes and indicators to a lesser degree than the text items in the CMS F-Tag 310 rule and RAI-UG. Data analysis revealed that text items in the CEP aligned in intent match with indicators in as many as 29 of the select NOC outcomes. The language used in the CEP suggests that the focus and scope of some of the text items in the CEP lack the needed specificity in order to avoid ambiguity when being used by the SNHSA surveyors to assign deficiency severity scores accurately. The finding also aligns with Hamilton (2008) who reported no increase in the SNHSA surveyors' ability to identify substandard care or improvement in the documentation to support a deficiency and severity score when using the CEP.

CMS F-Tag 310 Rule. The percentage of CMS F-Tag 310 rule text items that aligned in exact match and intent match with the select NOC outcomes and indicators ranked midway between the RAI-UG and the CEP. A contradiction to this finding was illustrated in the most frequently used words that may be the best representation of the focus of the CMSF-Tag 310 rule. The most frequently used words in the F-Tag 310 rule for activities of daily living and functional status more closely resemble the CMS rule for skin care. Rearranging the sequence of 12 words and filling gaps when necessary reveals the focus of the CMS rule: "Facility care (and) treatment may risk resident pressure ulcer(s), skin, tissue, (and) wound healing" (CMS, 2010).

Isolating the true source of the inconsistency in this finding would require additional research. Nonetheless, it may be suggested that the extent of nursing representation in the CMS Nursing Home Division's selection of committee members who developed the rule, as in the CEP and RAI-UG, may explain this finding. Upon request the CMS will release a list of the committee members who created the CMS F-Tag 310 rule, but the bureaucratic process to obtain this information was beyond the time frame of this body of work. Regardless of the nursing representation in the CMS committee who developed the rule, the CMS encourages comments and suggestions by expert nurses and clinicians prior to finalizing the regulatory guidelines. There is, however, no obligation or agency rule that mandates the CMS to incorporate the expert opinions and suggestions into the rule. Further research may find that (a) the CMS development committee lacked sufficient nurse expert representation, (b) comments by nurses made during the open form period were not incorporated into the rule, or (c) nurses may have not participated in the open comment period.

Shared Connotations

The intent of the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP shared the connotations of (a) disease physiology and physical limitations; (b) resident autonomy and the ability, capacity, or the willingness to participate in health care planning, nursing care, or nursing interventions; and (c) the role or contribution of nursing staff in the assessment, planning, implementation, and evaluation of nursing care to satisfactorily meet the minimum standards of nursing practice defined in the CMS rule and documents in the surveyor guidance manual. Although these connotations were present in the CMS F-Tag 310 rule, the RAI-UG, and the CEP, there is evidence to suggest that each document emphasizes one particular connotation. The CMS F-Tag 310 rule primarily focused on the connotations of disease physiology and physical limitations and the role of nurses in providing nursing care. The RAI-UG predominantly focused on disease physiology and physical limitations, and on the autonomy, ability, capacity, or

willingness of a resident to participate in the process of providing nursing care. The predominate connotation of the text items in the CEP was to evaluate the role or contribution of nursing staff in the assessment, planning, implementation, and evaluation of nursing care.

Degree of Alignment

The combined text items in the CMS rule, the RAI-UG or the CEP aligned in various degrees with all of the select NOC outcomes and some of their respective indicators. Individually, text items the CMS rule aligned with indicators in 91 of the 93 select NOC outcomes; text items in the RAI-UG aligned with indicators in 92 of the 93 select NOC outcomes; and text items in the CEP aligned with indicators in 90 of the 93 select NOC outcomes. The text items in the RAI-UG did not align with indicators in the 2400 Sensory Function: Cutaneous NOC outcome.

The remaining NOC outcomes and respective indicators that did not align with the text items in the CMS rule were the 0308 Self-Care: Oral Hygiene and 1614 Personal Autonomy outcomes. The CMS Long Term Care Survey Manual (CMS, 2010) has nine rules that define resident's rights, freedom of choice, and personal autonomy which support the lack of text item alignment with the 1614 Personal Autonomy NOC outcome. In further investigation, it was found that the purpose of the F-Tag 310 rule section on oral hygiene is written to evaluate nursing staff's ability to maintain the mouth in a clean and intact condition (CMS, 2010), but does not speak to a resident's ability to self-perform oral care as the NOC outcome does (Moorhead et al., 2008). This section of the F-Tag 310 rule for oral care, however, did align with the 3013 Client Satisfaction: Technical Aspects of Care NOC outcome and respective indicators.

In addition, the text items in the CEP did not align with indicators in the 0903 Communication: Expressive, 0906 Decision Making, and the 1608 Symptom Control NOC outcomes. The CEP instructs the SNHSA surveyor to interview residents and evaluate the resident's opinion of the quality of nursing care with the assumption that the

resident has the ability and capacity to converse. Regardless of this assumption, the CEP does not include communication as a component of the activities of daily living and fails to evaluate a resident's ability or capacity to express their options and feelings. This CEP is not in agreement with the F-Tag 310 rule that incorporates communication as a fundamental characteristic of the activities of daily living.

It could also be argued that the failure of the CEP to include text items that align with the 0906 Decision Making and 1608 Symptom Control NOC outcomes represent the CEP's primary connotation of the role or contribution of nursing staff in nursing care. The CEP's exclusion of resident-centered text items that align with these NOC outcomes demeans a resident's self-sufficiency in two significant approaches. First, the absence of text items in the CEP that acknowledge a resident's ability to make decisions and communicate their opinions to nursing staff diminishes a resident's autonomy and freedom of choice. As another example that represents the connotation of the CEP, the definition of the 1608 Symptom Control NOC outcome describes the role of "personal actions" (Moorhead et al., 2008) in a resident's functional status. Personal action corresponds to independence and the ability to communicate decisions to nursing caregivers. Also, the failure to acknowledge a resident's personal actions and autonomy increases the responsibility of nursing care.

Another data pattern that was equally represented in the CMS F-Tag 310 rule, the RAI-UG, and the CEP was found in the relationship in the number of words used to convey the intent of a text item to the degree of alignment with the select NOC outcomes and the respective indicators. Specifically, it was found that the fewer the number of words that were used to convey the intent of a text item, the greater the degree of alignment with some of the indicators in selected NOC outcomes. In contrast, the more words, sentence fragments, or sentences that were used to convey the intent of a text item resulted in a lesser degree of alignment with a greater number of the select NOC outcomes and indicators. Some of these text items with a lesser alignment with NOC

outcomes and indicators were frequently repeated in the content of the CMS rule, the RAI-UG, and the CEP. It could be argued that an increase in the number of words, sentence fragments, or sentences in a text item, or an increase in the repetition in the use of a text item, did not necessarily improve the clarity or usability of the text item. As the example in Table 20 displays, the word “gait” aligned in exact match with indicators in the 0208 Mobility NOC outcome. As the number of words, sentence fragments, or sentences used to communicate the intent of “gait” increased, a weaker degree of alignment was generated with the larger number of the select NOC outcomes and indicators. The weakest degree of alignment is displayed the Table 20 (column 5), where the intent of “gait” aligned with indicators in five NOC outcomes.

In summary, the data suggest that the participation of expert nurses and nurse clinicians in the writing of the text items in the RAI-UG equated to a greater degree of alignment with the select NOC outcomes and respective indicators. In combination, the CMS F-Tag 310 rule, the RAI-UG, and the CEP contained text items that aligned with indicators in all of the select NOC outcomes. Also, the data suggest that increasing the number of words, sentence fragments, or sentences to convey the intent of a text item may not improve the clarity and usability of the document.

No Text Item Alignment

The data revealed that some nursing outcome indicators defined in text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP had no alignment with certain specific NOC indicators. It was found that the connotation of the role or contribution of nursing staff in resident care had a greater degree of alignment in the CMS F-Tag 310 rule and the RAI-UG than the CEP.

Offering residents an alternative nursing intervention was a specific area of the CMS rule and the CEP text items that did not align with the select NOC indicators. The CMS F-Tag 310 rule and the CEP text suggested that nurses should develop and offer alternative interventions if a resident or the resident’s representative refuses all or some

elements of a plan of nursing care. The NOC does not contain an outcome indicator that defines offering an alternative nursing intervention when a resident or the resident's representative disagrees with the nursing plan of care.

The data analysis also revealed no alignment of the select NOC outcomes and indicators with the CMS F-Tag 310 rule and the RAI-UG text items of cueing, assistance, prosthesis use and care, and the term "assistive device." The CMS rule and the RAI-UG defined verbal and nonverbal cueing as a form of nursing personal assistance in the completion of ADL tasks to maintain functional status (CMS, 2010; CMS 2011). The RAI-UG further delineated nursing personal assistance, with or without equipment or mechanical devices, in more precise terms of guided maneuvering, weight-bearing assistance, supervision, and verbal reminders (CMS, 2011). The outcomes in NOC do not contain indicators that align with the CMS F-Tag 310 rule or the RAI-UG's definition of assistive devices or prosthesis use and care. The definitions of the NOC Mobility and Self-Care outcomes included the term "assistive devices" (Moorhead et al., 2008). It is unclear if nursing personal assistance techniques, with or without equipment or mechanical devices, such as stand-by assistance, guided maneuvering, weight-bearing assistance, supervision, or cueing were included in the NOC outcome definition of "assistive device." In addition, the definitions in the NOC Mobility and Self-Care outcomes did not clarify if the term "assistive devices" included prosthesis use and care.

The CEP text item to allow "...sufficient time...to complete tasks..." (Kramer, 2008) did not align with an indicator in the select NOC outcomes. The NOC indicator, "300603-Time for meals," in the outcome 3006 Client Satisfaction: Physical Care (Moorhead et al., 2008), defined the importance of allowing a resident sufficient time to complete activities of daily living tasks. There may be a supposition that allowing sufficient time to eat should be included in the intent of the CEP, but this was not clearly communicated in the text item and did not align in exact or intent match with the select NOC outcomes or indicators.

As previously discussed, the CEP primarily focused on the outcome of client satisfaction with the actions of nursing practice, while the NOC used a resident-centered approach to define the outcome of nursing care. The focus on a resident's impression of nursing actions as the outcome of nursing care in conjunction with the broad scope of the queries in the CEP may be another explanation for the weaker degree of alignment with the select NOC outcomes and indicators.

Research Methodology

The research methodology specifically designed for this work enabled examination of the degree of alignment of the select NOC outcomes and indicators with the F-Tag 310 rule, the RAI-UG, and the CEP. The coding taxonomy was intuitive and sufficiently sensitive to accurately align the text items of the CMS rule, the RAI-UG, and the CEP with the select NOC outcomes and respective indicators. Features of the NVivo 9 computer software, however, had weaknesses that should be explored prior to using the software in future studies.

The NVivo 9 software was helpful in calculating the Cohen's Kappa that provided information on the reliability of the coding rules and the researcher's coding decisions. In addition, the NVivo 9 software also has the capacity to calculate the frequency and percentage of the text items that were aligned to the select NOC outcomes and indicator coding taxonomy. Unfortunately, the extensive volume of data generated in this body of work exceeded the software's capacity to generate the frequency distribution tables presented in Chapter 4. The frequency and percentages of text items that aligned with the select NOC outcomes and indicators were transferred into Excel software by the researcher for analysis. Also, the noteworthy text items from the three CMS documents were transferred into an Excel spreadsheet for analysis.

Another software limitation of the NVivo 9 was in the capturing of text items for coding. The CMS rule, the RAI-UG, and the CEP frequently presented text items in a bulleted-outline format. The NVivo 9 software was unable to capture a detached stem and

body of a statement as a singular unit to code as one datum. Strict adherence to the coding rules resolved many of these detached text items; yet, if this study were to be replicated, document preparation prior to transcription to ensure that a generic stem was attached to the body of each text item would simplify the coding process.

Recommendations

Nursing Outcomes Classification Specific to Nursing Homes

This body of work elicited data suggesting that with additional research the NOC may hold promise of becoming a viable solution as a cross-link for the CMS rules and guidance manual to more accurately assign severity scores. The data analysis also suggests that in developing a NOC for NHs, specific areas of the current select NOC outcomes and indicators should be revised to more closely align with specific areas of the CMS F-Tag 310 rule, the RAI-UG, and the CEP. The data analysis suggests that this can be achieved by strengthening the degree of alignment by incorporation of the three previously mentioned CMS connotations into the NOC outcomes and indicators (a) to incorporate text items in the Exact match category into the new NOC, (b) to conduct further research on text items in the Intent match category, and (c) to develop indicators that align with the text items in the No Alignment category that did not align with the NOC outcomes or indicators.

NOC Connotations. To further align the language of the select NOC outcomes and indicators to the three CMS documents, a NOC specific to NHs should incorporate the three previously discussed connotations (disease pathology, resident autonomy and willingness to participate in nursing care, and the role or contribution of nursing staff). The data analysis revealed a stronger degree of alignment of the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP with NOC outcomes and indicators in the connotations of disease pathology and resident autonomy and willingness to participate in nursing care. A possible solution to strengthening the alignment of NOC outcomes and

indicators with the three CMS connotations may be to expand the outcomes in the Client Satisfaction category.

More specifically, this weak degree of alignment may be strengthened in a NOC specific to NHs by creating a Client Satisfaction outcome for the outcomes in the Self-Care and Mobility categories. These new Client Satisfaction outcomes should contain indicators that emphasize the importance of resident autonomy and self-direction of care from the perspective of a resident and the resident's representatives. For example, the current NOC has an outcome for Self-Care: Hygiene that defines the outcome indicators of a resident's ability to perform this task. To better align with the text items in the CMS rule, the RAI-UG, and the CEP, a NOC specific to NHs should contain a companion Client Satisfaction: Hygiene outcome. As an example, Appendix C displays three sample NOC outcomes that demonstrate how the indicators can be reorganized to incorporate the CMS F-Tag 310 rule, the RAI-UG and the CEP shared connotations.

Exact Match Text Items. As a viable cross-link, a NOC specific to NHs should closely align the outcomes and indicators to text items in the CMS rules, the RAI-UG, and the CEP that define the outcome of nursing practice. For a NOC specific to NHs the NOC indicators that exactly aligned with the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP should be incorporated into the new NOC without revision or modification.

Intent Match Text Items. The text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP that aligned in intent match with the NOC outcomes and respective indicators should undergo further review. Suggestions for further review will be discussed in the recommendations for nursing research section of this chapter.

New NOC Indicators to Align with No Alignment Text Items. The text items that defined the outcome of nursing practice in the CMS F-Tag 310 rule, the RAI-UG, and the CEP that did not align with NOC outcomes or indicators should be incorporated into a

NOC specific to NHs. It is suggested that this can be achieved by incorporating these text items as indicators in the appropriate NOC outcomes.

A NOC specific to NHs should include an indicator in the Self-Direction of Care outcome to evaluate a resident or resident's representative's actions to direct others to develop an alternative nursing intervention. Also indicators to evaluate a resident's judgment of the offer and approval of alternative nursing interventions should be incorporated into the Client Satisfaction NOC outcomes.

In a NOC specific to NHs the outcome definitions and indicators clarify the term "assistive devices" to include the CMS definition of assistance and assistive devices. To improve the degree of alignment of a NOC specific to NHs with the CMS F-Tag 310 rule and the RAI-UG, the new NOC should include indicators that define a resident's response to cueing, human or mechanical assistance, prosthesis use and care, and personal assistance techniques. A separate Likert-type rating scale may differentiate the evaluation of residents who do not need personal assistance, equipment, or mechanical devices.

In addition, to strengthen the degree of alignment with the CEP, a NOC specific to NHs should expand the Client Satisfaction outcomes and indicators for functional status and activities of daily living. Specifically, a NOC specific to NHs should contain indicators that evaluate a resident's satisfaction with nursing staff in allowing sufficient time to complete all activities of daily living and functional status tasks in the Client Satisfaction outcomes.

Recommendations for Nursing Research

Future nursing research may be based on two approaches. It is suggested that the NOC undergo further testing with the goal of developing a NOC specific to NHs as a cross-link to the CMS rules and documents in the surveyor guidance manual. Second, research should be conducted to describe how the participation of nurse experts and

clinicians in the CMS document development committees influences the language to communicate the outcome of nursing practice.

NOC Specific to NHs

The data generated in this body of work suggest that specific areas of the current select NOC outcomes and indicators should be revised to more closely align with the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP. In particular, it was found that data analysis conclusions in the Intent Alignment category of the CMS F-Tag 310 rule, the RAI-UG, and the CEP substantiate the necessity of additional research. This research would guide the development of a NOC specific to NHs and conclusively demonstrate how it may increase the clarity and usability of the CMS rules and the documents in the guidance manual. Prior to implementation of a NOC specific to NHs, additional testing should consult geriatric experts and SNHSA surveyors to evaluate the effectiveness, clarity, and usability of a NOC specific to NHs to assign deficiency severity scores.

As a starting point, further research should be conducted to explore the word structure of the text items in the Intent Alignment category to facilitate construction of new or reconstruction of current NOC indicators into a NOC specific to NHs. A text item content analysis would determine the true meaning of the text items and would also identify the differences and similarities in a word in relation to other words, and the relationship of word meaning to the meaning of a sentence. The data analysis of the text items has already revealed that the origin and connotation of CMS F-Tag 310 rule, the RAI-UG, and the CEP may have an effect on the meaning of words in relation to other words within the text. Also, future content analysis research may reveal how a word that is used by professionals in health fields other than nursing may influence its clarity and usability.

On completion of content analysis, the text items should be reassembled into a NOC outcomes and indicators specific to NHs. The reassembled text items in the new

NOC outcomes and indicators should then be evaluated by a panel of geriatric nurse experts, practicing nurses in nursing homes, and SNHSA surveyors to assess the usability, clarity, and ease of comprehension of a NOC specific to NHs. It may also be necessary to extend testing of the new NOC into nursing practice in NHs.

Nurse Involvement in CMS Document Development

It was found that the majority of the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP aligned in Intent match with NOC outcomes and indicators. This alignment corroborates the GAO (2009) suggestion that the CMS does not effectively communicate the minimum expectations for nursing care in a language that is clear or usable by the SNHSA nurse surveyors. This body of work concluded that NOC, as a language that communicates the outcomes of nursing practice in a manner that is familiar to nurses, had the greatest degree of alignment with the RAI-UG. The greater degree of alignment of the RAI-UG with the NOC outcomes and indicators may be attributed to the large representation of expert nurses and clinicians who contributed to the development of the document. This may suggest a relationship between nurse participation in the development of a CMS document and the clarity and usability of the document by SNHSA nurse surveyors. Further research is necessary to fully explore the importance of expert nurse and clinician participation in the development the CMS rules and the documents in the guidance manual to ensure that they are written in a language that clearly conveys the outcomes of nursing practice. Also, to reduce the usage of the IDR and DFR, the CMS rules and the documents in the surveyor guidance manual to assign deficiency severity scores should be written in a language so that nurses practicing in NHs can understand the standards by which their nursing care is being measured.

Expert nurse and clinician involvement in the CMS rule and the documents in the guidance manual development could be achieved through several approaches. First, expert nurses and clinicians increase participation in the CMS Division of Nursing Homes rule and surveyor guidance manual development committees. If this opportunity

is not available, expert nurses and clinicians could use their knowledge and expertise to critique a new CMS rule during the open forum Notice of Proposed Rulemaking comment and suggestion period of the rule-making process. Also, expert nurses and clinicians may want to avail themselves of the opportunity to evaluate the benefits or consequences of new rules by joining NH specialty organizations, such as American Health Care Association.

Conceptual Framework

A conceptual framework was developed specifically for this body of work. Nursing literature available at the time of its development and the personal experiences of the researcher contributed to the design of the model. Using this knowledge, the conceptual framework described the mediators and modifiers that influence assigning deficiency severity scores; the impact that inaccurate severity scores have on the SNHSA surveyors and the NHs, and the proposed process to explore the viability a NOC specific to NHs. The data collection and analysis section of the model described the method to explore the degree of alignment of select NOC outcomes and the respective indicators with the text items in the CMS F-Tag rule, the RAI-UG, and the CEP. Upon answering the research questions and analyzing the accumulated data, the researcher found that this model did not accurately represent the data analysis methodology or the product of this proposed research.

Revision to the conceptual framework should correct these inaccuracies. The data analysis methodology to describe the NOC Testing Method in the conceptual framework should condense the three stages into two. The first two stages that describe the methodology of aligning the select NOC outcomes and indicators to the three CMS documents and to identify gaps in NOC proved to be accurate. As this body of work unfolded, it was found that the third stage, to identify CMS F-Tag gaps specific to nursing practice, did not align with the CMS cross-linkage proposal. The suggestion by CMS to create a cross-link between the rules and the guidance manual to assign severity

scores is an alternative solution to avoid revision of the CMS rules or the documents in the surveyor guidance manual (U.S. GAO, 2009a). Identification of the gaps in the CMS rules and documents in the surveyor guidance manual can be achieved during future research to evaluate the usability of a NOC specific to NHs by geriatric nurse experts, practicing nurses in nursing homes, and SNHSA surveyors. It is not the researcher's intent to modify the CMS rules or the documents in the surveyor guidance manual.

The hesitancy of the CMS to modify the current CMS rules or the documents in the surveyor guidance manual to improve the accuracy of severity scores leads to the conclusion that the final section of the conceptual framework also needs revision. The final item in the framework, number 4, that contains "CMS Guidelines Specific to Nursing Practice," be removed. It is also recommended that prior to further research, beyond the replication of this body of work, the research model undergo testing to determine its validity as a guide for future studies.

Limitations of the Study

1. The current version of the CEP may undergo revision depending on the results of the five-state demonstration project and may potentially have significant effects on the findings in this study. Selecting functional status as a research focus (due to the minimal changes in the new MDS 3.0) reduces, but does not eliminate, the possibility of changes in the Activities of Daily Living and Range of Motion CEP.
2. Due to personal experiences of the researcher, there may be some inherent bias within this study that will be controlled through strict adherence to the conceptual framework and explicit coding guidelines, as well as a reliability check by select expert NH and NOC clinicians.
3. The ability to generalize the findings in this study is only relevant to activities of daily living-functional status portions of the NOC, the CMS F-Tag 310 rule, the MDS 3.0- Section G.

4. Information used for comparison in this study in the selected NOC outcomes; the NOC indicators, the CMS F-Tag 310 rule, the MDS 3.0, and the CEP are based on the most recent publication. As the NOC and the CMS make revisions to subsequent publications, the examined linkages between these documents may also undergo change.

In conclusion, the purpose of this research project was to explore the viability of NOC outcomes and respective indicators specific to activities of daily living and functional status as a cross-link with the CMS rules and surveyor guidance manual to assign a deficiency severity score. A research model and methodology was developed specifically to determine the degree of alignment of select NOC outcomes and indicators to the text items in the CMS F-Tag 310 rule, the RAI-UG, and the CEP. Words within the CMS F-Tag 310 rule, the RAI-UG, and the CEP aligned exactly with some NOC indicators that defined a specific activity of daily living or functional status activity. Words, sentence fragments, and sentences in the CMS F-Tag 310 rule, the RAI-UG, and the CEP represented the largest portion of the text items that aligned in intent match with the select NOC outcomes and the respective indicators. It was found that the fewer the number words that were used to convey the intent of a text item, the greater the degree of alignment with some of the indicators in a few of the select NOC outcomes. In reverse, it was found that an increase in the number of words, sentence fragments, or sentences that were used to convey the intent of a text item resulted in a lesser degree of alignment with more indicators in numerous select NOC outcomes. The data analysis also revealed three connotations that were embedded in the text of the CMS F-Tag 310 rule, the RAI-UG, and the CEP that may be useful in development of a NOC specific to NHs. As the NOC clearly defines the outcome of nursing practice, then aligning the NOC outcomes and indicators to the CMS F-Tag 310 rule, the RAI-UG and the CEP may increase the clarity and usability of the CMS rules and guidance manual, and improve the deficiency severity scores accuracy. The findings in this body of work provide sufficient evidence that the

NOC may be a viable cross-link for the CMS rules and surveyor guidance manual as well as a starting point for the refinement and further development of a NOC specific to NHs.

APPENDIX A
ABBREVIATIONS

ALJ- Administrative Law Judge

AHCA- American Health Care Association

CEP- Critical Elements Pathway

CMS- Centers for Medicare and Medicaid Services

DCV- Fehring's Diagnostic Content Validation method

DNH- the Centers for Medicare and Medicaid Services Division of Nursing Homes

F-Tag- The classification code for CMS administrative nursing home rules

F-Tag 310- The CMS administrative rule for functional status and activities of daily living

GAO- United States Government Accountability Office

IDR- Informal Dispute Resolution

FDR- Formal Dispute Resolution

LTCEP- Long Term Care Enforcement Procedures Manual

LTCSM- Long Term Care Survey Manual

QIS- Quality Indicator Survey

MDS 3.0- Minimum Data Set nursing assessment tool

NH- nursing home

NHFSA- Nursing Home Facility Survey Agencies

NOC- Nursing Outcomes Classification

OIG- Office of the Inspector General

RAI- Resident Assessment Instrument that consists of the Minimum Data Set, the Care Area Assessment, and the Resident Assessment Instrument Utilization Guide

RAI-UG- Resident Assessment Instrument Utilization Guide

SNHSA- State Nursing Home Survey Agency

2567- Recertification Survey findings document

APPENDIX B

NOC OUTCOME—SELF-CARE: EATING

Self-Care: Eating--0303

*Domain-Functional Health (I)**Care Recipient:**Class-Self-Care (D)**Data Source:**Scale(s)-Severely compromised to Not compromised (a)***DEFINITION:** Ability to prepare and ingest food and fluid independently with or without assistive device

OUTCOME TARGET RATING: Maintain at _____ Increase to _____

	Severely compromised	Substantially compromised	Moderately compromised	Mildly compromised	Not compromised	
SELF-CARE: EATING						
OVERALL RATING	1	2	3	4	5	
INDICATORS:						
030301Prepares food for ingestion	1	2	3	4	5	NA
030302Opens containers	1	2	3	4	5	NA
030316Cuts up food	1	2	3	4	5	NA
030303Uses utensils	1	2	3	4	5	NA
030304Gets food onto the utensil	1	2	3	4	5	NA
030305Picks up cup or glass	1	2	3	4	5	NA
030306Brings food to mouth with fingers	1	2	3	4	5	NA
030307Brings food to mouth with container	1	2	3	4	5	NA
030308Brings food to mouth with utensil	1	2	3	4	5	NA
030309Drinks from a cup or glass	1	2	3	4	5	NA
030310Places food in mouth	1	2	3	4	5	NA
030311Manipulates food in mouth	1	2	3	4	5	NA
030312Chews food	1	2	3	4	5	NA
030313Swallows food	1	2	3	4	5	NA
030317Swallows fluid	1	2	3	4	5	NA
030314Completes a meal	1	2	3	4	5	NA

APPENDIX C

DRAFT NOC OUTCOME—SELF-CARE: HYGIENE

Self-Care: Physiological

*Domain- Functional Health (I)**Care Recipient:**Class- Self-Care (D)**Data Source:**Scale(s)- Severely compromised to Not compromised (a)***DEFINITION:** Physiologic capacity to perform personal cleanliness and kempt appearance

OUTCOME TARGET RATING: Maintain at _____ Increase to _____

	Severely compromised	Substantially compromised	Moderately compromised	Mildly compromised	Not compromised	
SELF-CARE: HYGIENE						
OVERALL RATING	1	2	3	4	5	
INDICATORS:						
Control of movement ²	1	2	3	4	5	NA
Movement with desired precision ²	1	2	3	4	5	NA
Correct use of equipment ³	1	2	3	4	5	NA
Oxygen saturation with activity ⁴	1	2	3	4	5	NA
Pulse rate with activity ⁴	1	2	3	4	5	NA
Respiratory rate with activity ⁴	1	2	3	4	5	NA
Ease of breathing with activity ⁴	1	2	3	4	5	NA
Systolic blood pressure with activity ⁴	1	2	3	4	5	NA
Diastolic blood pressure with activity ⁴	1	2	3	4	5	NA
Skin Color ⁴	1	2	3	4	5	NA
Upper body strength	1	2	3	4	5	NA
Lower body strength	1	2	3	4	5	NA
Ability to speak with physical activity ⁴	1	2	3	4	5	NA
Uses proper body mechanics ⁵	1	2	3	4	5	NA
Performs activities of daily living consistent with	1	2	3	4	5	NA

tolerance ³						
Exhibits affect that fits situation ¹²	1	2	3	4	5	NA
Exhibits concentration ¹²	1	2	3	4	5	NA
Exhibits understanding of activity	1	2	3	4	5	NA
Exhibits understanding steps in activity	1	2	3	4	5	NA
Concentration ¹⁰	1	2	3	4	5	NA
Comprehension of the meaning of situations ¹⁰	1	2	3	4	5	NA
Information processing ¹⁰	1	2	3	4	5	NA
Maintains attention ¹¹	1	2	3	4	5	NA
Maintains focus ¹¹	1	2	3	4	5	NA
Responds to visual cues ¹¹	1	2	3	4	5	NA
Responds to language cues ¹¹	1	2	3	4	5	NA
Responds to tactile cues ¹¹	1	2	3	4	5	NA
Responds to auditory cues ¹¹	1	2	3	4	5	NA
Vision ¹²	1	2	3	4	5	NA
Hearing ¹²	1	2	3	4	5	NA
Facial movement ¹²	1	2	3	4	5	NA
Bilateral muscle strength ¹²	1	2	3	4	5	NA
Purposeful head movement ¹²	1	2	3	4	5	NA
Purposeful shoulder movement ¹²	1	2	3	4	5	NA

***The title, definition, and indicators are not in standard format of NOC; this structure represents a starting point for future work.**

OUTCOME CONTENT REFERENCES:

- ²Coordinated Movement---021205
- ²Coordinated Movement---021212
- ³Knowledge: Treatment Procedure---181404
- ⁴Activity Tolerance---000501
- ⁴Activity Tolerance---000502
- ⁴Activity Tolerance---000503
- ⁴Activity Tolerance---000504
- ⁴Activity Tolerance---000504
- ⁴Activity Tolerance---000505
- ⁴Activity Tolerance---000507
- ⁴Activity Tolerance---000516
- ⁴Activity Tolerance---000517
- ⁴Ability to speak with physical activity---000514

- ⁵Body Mechanics Performance---161615
- ⁷Health Seeking Behavior---160305
- ⁸Psychomotor Energy---000601
- ⁸Psychomotor Energy---000602
- ¹⁰Cognition---090013
- ¹⁰Cognition---090004
- ¹⁰Cognition---090009
- ¹¹Concentration---090501
- ¹¹Concentration---090502
- ¹¹Concentration---090503
- ¹¹Concentration---090504
- ¹¹Concentration---090505
- ¹¹Concentration---090506
- ¹¹Concentration---090507

Draft NOC Outcome—Self-Care: Hygiene

Self Care-Personal Behavior: Hygiene

*Domain-Health Knowledge and Behavior (IV)**Care Recipient:**Class- ()**Data Source:**Scale(s)- Never demonstrated to Consistently demonstrated (m)*

DEFINITION: Personal autonomy, ability, capacity, or the willingness to achieve and maintain personal cleanliness and kempt appearance

OUTCOME TARGET RATING: Maintain at _____ Increase to _____

	Never demonstrated	Rarely demonstrated	Sometimes demonstrated	Often demonstrated	Consistently demonstrated	
SELF CARE-PERSONAL ACTIONS: HYGIENE						
OVERALL RATING	1	2	3	4	5	
INDICATORS:						
Washes face	1	2	3	4	5	NA
Dries face	1	2	3	4	5	NA
Shaves ¹	1	2	3	4	5	NA
Applies makeup ¹⁴	1	2	3	4	5	NA
Cleans perineal area front to back	1	2	3	4	5	NA
Wears protective pads ¹⁴	1	2	3	4	5	NA
Keeps nose blown and clean ¹⁴	1	2	3	4	5	NA
Maintains oral hygiene ¹⁴	1	2	3	4	5	NA
Cares for fingernails ¹⁴	1	2	3	4	5	NA
Uses a mirror ¹⁴	1	2	3	4	5	NA
Maintains neat appearance ¹⁴	1	2	3	4	5	NA
Maintains body hygiene ¹⁴	1	2	3	4	5	NA
Performs tasks independently	1	2	3	4	5	NA
Perceived functional ability ¹¹	1	2	3	4	5	NA
Perceived energy to act ¹¹	1	2	3	4	5	NA
Perceived adequacy of time ¹¹	1	2	3	4	5	NA
Perceived access to	1	2	3	4	5	NA

equipment ¹¹						
Perceived access to supplies ¹¹	1	2	3	4	5	NA
Perceived access to nursing assistance ¹¹	1	2	3	4	5	NA
Perceived access to physical assistance ¹¹	1	2	3	4	5	NA
Correct use of equipment ¹³	1	2	3	4	5	NA
Proper care of equipment ¹³	1	2	3	4	5	NA
Washes hands ¹	1	2	3	4	5	NA
Uses risk avoidance behaviors ²	1	2	3	4	5	NA
Correct use of equipment ¹³	1	2	3	4	5	NA
Recognizes pain onset ⁴	1	2	3	4	5	NA
Specifies health outcome preferences ⁵	1	2	3	4	5	NA
Follows recommended precautions ⁷	1	2	3	4	5	NA
Follows recommended treatment regimen ⁷	1	2	3	4	5	NA
Uses risk avoidance behaviors ²	1	2	3	4	5	NA
Positions self to advantage vision ⁸	1	2	3	4	5	NA
Remind others to use techniques that advantage vision ⁸	1	2	3	4	5	NA
Perceived support from health care provider ¹¹	1	2	3	4	5	NA
Performs activities of daily living as prescribed ¹	1	2	3	4	5	NA
Perceived support from health care provider ¹¹	1	2	3	4	5	NA
Asks health-related questions ³	1	2	3	4	5	NA
Obtains assistance from health professional ³	1	2	3	4	5	NA
Performs activities of daily living as prescribed ¹	1	2	3	4	5	NA
Performs activities of daily living to affected side ¹⁵	1	2	3	4	5	NA
Changes body orientation to enable unaffected side to compensate for physical or	1	2	3	4	5	NA

sensory deficits						
Correct use of prosthetic device	1	2	3	4	5	NA
Correct care of prosthetic device	1	2	3	4	5	NA

***The title, definition, and indicators are not in standard format of NOC; this structure represents a starting point for future work.**

OUTCOME CONTENT REFERENCES:

- ¹Compliance Behavior—160108
- ²Health Promoting Behavior—160201
- ³Health Seeking Behavior—160301
- ³Health Seeking Behavior—160313
- ⁴Pain Control—160502
- ⁵Participation in Health Care Decisions—160605
- ⁷Treatment Behavior: Illness or Injury—160901
- ⁷Treatment Behavior: Illness or Injury—160902
- ⁸Vision Compensation Behavior—161102
- ⁸Vision Compensation Behavior—161103
- ¹¹Health Beliefs: Perceived Resources—170304
- ¹¹Health Beliefs: Perceived Resources---170306
- ¹¹Health Beliefs: Perceived Resources—170307
- ¹¹Health Beliefs: Perceived Resources---170309
- ¹¹Health Beliefs: Perceived Resources---170312
- ¹¹Health Beliefs: Perceived Resources---170313
- ¹¹Modified from Health Beliefs: Perceived Resources---170314
- ¹¹Modified from Health Beliefs: Perceived Resources---170316
- ¹³Knowledge: Treatment Procedure---181404
- ¹³Knowledge: Treatment Procedure---181407
- ¹⁴Self-Care: Hygiene---030501
- ¹⁴0305 Self-Care: Hygiene---030509
- ¹⁴Self-Care: Hygiene---030510
- ¹⁴Self-Care: Hygiene---030511
- ¹⁴Self-Care: Hygiene---030515
- ¹⁴Self-Care: Hygiene---030505
- ¹⁴Self-Care: Hygiene---030506
- ¹⁴Self-Care: Hygiene---030513
- ¹⁴Self-Care: Hygiene---030514
- ¹⁴Self-Care: Hygiene---030517
- ¹⁴Self-Care: Hygiene---030512
- ¹⁵Heedfulness of Affected Side---091806
- ¹⁵Heedfulness of Affected Side---091808

Draft NOC Outcome—Self-Care: Hygiene

Self Care-Client Satisfaction: Assisted Hygiene

*Domain- Perceived Health VI)**Care Recipient:**Class- Satisfaction with Care (e)**Data Source:**Scale(s)- Not at all satisfied to Completely satisfied (s)*

DEFINITION: Extent of positive perception of nursing assistance to maintain cleanliness and kempt appearance

OUTCOME TARGET RATING: Maintain at _____ Increase to _____

	Not at all satisfied	Somewhat satisfied	Moderately satisfied	Very satisfied	Completely satisfied	
SELF CARE-CLIENT SATISFACTION: ASSISTED HYGIENE						
OVERALL RATING	1	2	3	4	5	
INDICATORS:						
Courtesy shown by staff ¹	1	2	3	4	5	NA
Compassion shown by staff ¹	1	2	3	4	5	NA
Gentleness of staff ⁴	1	2	3	4	5	NA
Kindness shown by staff ¹	1	2	3	4	5	NA
Respect shown by staff ¹	1	2	3	4	5	NA
Emotional support provided ¹	1	2	3	4	5	NA
Correct assistance provided ⁴	1	2	3	4	5	NA
Organization of assistance ⁴	1	2	3	4	5	NA
Capability of staff ⁴	1	2	3	4	5	NA
Encourage independence	1	2	3	4	5	NA
Consistency in performance of assistance ⁴	1	2	3	4	5	NA
Knowledge of nursing staff ⁵	1	2	3	4	5	NA
Expertise of nursing staff ⁵	1	2	3	4	5	NA
Time to perform task	1	2	3	4	5	NA
Explanation of reasons for assistance ³	1	2	3	4	5	NA
Explanation of extremity mobility restrictions ³	1	2	3	4	5	NA
Actions taken to relieve pain ⁷	1	2	3	4	5	NA
Verbal reminders provided	1	2	3	4	5	NA
Guided maneuvering	1	2	3	4	5	NA

provided						
Periodic oversight provided	1	2	3	4	5	NA
Access to supplies and equipment needed for care ⁵	1	2	3	4	5	NA
Uses assistive devices correctly ¹⁰	1	2	3	4	5	NA
Correct use of equipment ⁸	1	2	3	4	5	NA
Correct care of equipment ⁸	1	2	3	4	5	NA
Opportunity to do self care unless assistance requested or required ²	1	2	3	4	5	NA
Proper care of equipment ⁸	1	2	3	4	5	NA
Correct use of equipment ⁸	1	2	3	4	5	NA
Assistance to achieve self-care ⁵	1	2	3	4	5	NA
Offer alternative nursing intervention	1	2	3	4	5	NA
Cares for prosthetic device correctly	1	2	3	4	5	NA

***The title, definition, and indicators are not in standard format of NOC; this structure represents a starting point for future work.**

OUTCOME CONTENT REFERENCES:

¹Client Satisfaction: Caring—3001

²Modification of Client Satisfaction: Functional Assistance ---300511

²Modification of Client Satisfaction: Functional Assistance—300511

²Modification of Client Satisfaction: Functional Assistance—300507

²Modification of Client Satisfaction: Functional Assistance—300516

³Modification of Client Satisfaction: Teaching—301209

³Modification of Client Satisfaction: Teaching—301212

⁴Modification of Client Satisfaction: Technical Aspects of Care—301301

⁴Modification of Client Satisfaction: Technical Aspects of Care—301302

⁴Client Satisfaction: Technical Aspects of Care—301304

⁴Modification of Client Satisfaction: Technical Aspects of Care—301309

⁴Client Satisfaction: Technical Aspects of Care—301317

⁵Client Satisfaction—301402

⁵Client Satisfaction—301403

⁵Client Satisfaction---301415

⁷Client Satisfaction: Pain Management—301604

⁸Knowledge: Treatment Procedure---181404

⁸Knowledge: Treatment Procedure---181407

⁸Knowledge: Treatment Procedure---181407

⁸Knowledge: Treatment Procedure---181407

¹⁰Personal Safety Behavior---191107

APPENDIX D
CHRONOLOGICAL ORDER
RECERTIFICATION SURVEY OVERSIGHT INITIATIVE
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